# CHAPTER 4

# MEDICAL OPERATIONS

## INTRODUCTION

The previous chapter looked at the A. E. F. Medical Department from an organizational and doctrinal viewpoint. It is equally important to study medical support by looking at combat operations and how the Medical Department supported them. The best way to study these operations is chronologically, because they fall naturally into three phases. The first phase began with the arrival of the first medical units and extended to May 1918. During this time, American medical units assisted in providing care to the Allied forces and to the arriving American troops in camps. The second phase started in May 1918 when American soldiers captured the town of Cantigny. Mainly defensive operations with the French characterize this period, which covers the three months until August 1918. American medical units became more involved in combat care, especially at division-level and below. The final phase deals with the Allied offensives that ended the war. During this phase the Medical Department delivered medical care in the mobile battles of St. Mihiel and the Meuse-Argonne. This period subjected American medical doctrine to its greatest test of trying to deliver supplies, evacuate patients, and treat sick and wounded over a rapidly advancing front.

## PHASE ONE – MAY 1917 TO MAY 1918

The first phase began when American hospital units first arrived in France. These units were the Red Cross Base Hospitals, which the Army

rapidly mobilized and sent overseas. The first six to arrive in France took over British General Hospitals and provided hospital level care for the British. Other American hospitals arriving later in the summer of 1917, remained assigned to the American forces. They provided care in the camp hospitals, which treated the arriving Americans, and in base hospitals, which cared for sick American and sick and wounded French soldiers.[1]

This phase was a time of training for the American medical forces. A field medical school at Langres transformed civilian physicians into military ones. It had courses on military aspects of medicine, such as field sanitation, the role of a sanitary train, and the *Field Service Regulations* and *Manual of the Medical Department*. It also used French and British doctors to lecture on the changes in medical care that had occurred during the war. Trips to the front to observe actual combat medicine supplemented the lectures. For many arriving American physicians, this was their first experience with techniques like triage, debridement, and wound irrigation with Carrel-Dakin (an antiseptic) solution that the Allied surgeons had invented during the war.[2]

HOSPITALS FOR THE BRITISH

As soon as the Congress declared war, the British sent a mission led by Arthur Balfour to the United States. When this commission met with the

[1] Charles Lynch, Joseph H. Ford, and Frank W. Weed, The Medical Department of the United States Army in the World War, Volume VIII, *Field Operations*, (Washington, D.C.: Government Printing Office, 1925) 84-86 (Hereafter referred to as *Field Operations*).

[2] William N. Bispham, The Medical Department of the United States Army in the World War, Volume VII, *Training*, (Washington, D.C.: Government Printing Office, 1927) 572-79 (Hereafter referred to as *Training*).. Bailey K. Ashford, "The Preparation of Medical Officers of the Combat Division in France at the Theatre of Operations." *Military Surgeon* 44 (February 1919): 111-22. Harold Barclay, *A Doctor in France, 1917-1919: The Diary of Harold Barclay*, (New York: Privately printed, 1923), 46-48. Richard Derby, *"Wade in Sanitary!": The Story of a Division Surgeon in France*, (New York and London, G. P. Putnam's Sons, 1919), 6-9, 24-26. *Field Operations*, 84-85, 90-92.

Council of National Defense at the White House, 27 April 1917, Balfour grabbed the hand of Dr. Franklin Martin, excitedly, when introduced. He asked Martin, who served as the medical representative, if he worked with the enrollment of doctors in the Army. When Martin answered affirmatively, Balfour replied, "Our soldiers are in great need of doctors....My first request of your government would be–Send us Doctors." At the same time, the British requested six base hospitals and 116 other medical officers from the War Department.[3]

The telegrams from the Surgeon General mobilizing units went out at once. Harvey Cushing, the chief of Base Hospital No. 5, received his telegram at a meeting on 28 April 1917 where he was arguing to train his unit on the Boston Common. Base Hospital No. 5 got their training in France instead of Boston.[4] George Crile of Base Hospital No. 4 got his the same day. He received a second telegram from Colonel Jefferson R. Kean, Director of Military Relief of the Red Cross, asking if the unit was ready to move in ten days. Eight days later Base Hospital No. 4 boarded the *Orduna* in New York and sailed for Europe.[5] Other hospitals called up, Base Hospitals No. 2, 5, 10, 12, and 21, sailed later in May. Only one incident marred the

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[3]Donna B. Munger, "Base Hospital 21 and the Great War," *Missouri Historical Review* 70 (April 1976): 275. Charles Lynch, Frank W. Weed, and Loy McAfee, The Medical Department of the United States Army in the World War, Volume I, *The Surgeon General's Office,* (Washington, D.C.: Government Printing Office, 1923) 101 (Hereafter referred to as *The Surgeon General's Office).*

[4]Harvey Cushing, *From a Surgeon's Journal: 1915-1918,* (Boston: Little, Brown, and Company, 1936), 96.

[5]George Crile, *George Crile, An Autobiography,* edited with sidelights by Grace Crile, 2 Vol. (Philadelphia and New York: Lippincott, 1947), 273-75. U.S. Army, A.E.F. Base Hospital No. 4, Album de la Guerre, (Cleveland: Scientific Illustrating Studios, 1919), 4-8. *The Surgeon General's Office,* 101, says that Base Hospital No. 4 sailed 5 May. Joseph H. Ford, The Medical Department of the United States Army in the World War, Volume II, *Administration American Expeditionary Forces,* (Washington, D.C.: Government Printing Office, 1927) 632, claims that the *Orduna* sailed 7 May, (Hereafter referred to as *Administration, A.E.F.*).

mobilization and deployment of the medical units. Shortly after leaving New York, the *Mongolia,* carrying Base Hospital No. 12, had a gun explode while training. The fragments killed two nurses and injured others; the ship returned to New York. After repairs, it sailed uneventfully later in the month.[6]

These hospitals started work immediately upon arrival, as the British situation was desperate. On 28 May 1917, Base Hospital No. 4 took over British General Hospital No. 9, a 1,240 bed hospital with an additional 300 crisis beds, in Rouen. The Americans started treating patients that day. Similarly, Base Hospital No. 2 took over British General Hospital No. 1 at Etretat; Base Hospital No. 5 took over British General Hospital No. 13 at Boulogne; Base Hospital No. 10 took over British General Hospital No. 16 at Treport; Base Hospital No. 12 took over British General Hospital No. 18 at Camiers; and Base Hospital No. 21 took over British General Hospital No. 12 at Rouen. These hospitals arrived in Europe earlier than any other units of the A. E. F. and started right in performing their wartime mission. The formation of medical units before the war as a reserve, allowed these units to start work without a lengthy mobilization or training period.[7]

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[6]*The Surgeon General's Office,* 101. Munger, "Base Hospital 21," X. Historical Division, Department of the Army, United States, United States Army in the World War, 1917-1919. Vol. 15 *Reports of Commander-in-Chief, A. E. F., Staff Sections and Services,* (Washington, D.C.: Government Printing Office, 1948), 370 (Hereafter referred to as Historical Division, *Reports*).

[7]W. C. Gorgas, *Inspection of Medical Services with American Expeditionary Forces: Confidential Report to Secretary of War,* (Washington, D.C.: Government Printing Office, 1919) 38. Crile, *Autobiography,* 273-75. U.S. Army, A.E.F. Base Hospital No. 4, *Album de la Guerre,* (Cleveland: Scientific Illustrating Studios, 1919), 4-8. Cushing *Surgeon's Journal,* 111. *History of the Pennsylvania Hospital Unit (Base Hospital No. 10, U.S.A.) in the Great War,* (New York: Paul B. Hoeber, 1921), 64. Munger, "Base Hospital 21," 280.

MEDICAL TEAMS TO THE FRONT

The British did not just use the Americans at the General Hospitals, but also sent medical teams throughout their system. Teams were first sent from the base hospitals to the front during the battle of Passchendaele. On 22 July 1917, American base hospitals sent operating teams to Casualty Clearing Stations (C. C. S.), which corresponded to the American evacuation hospital. At the C. C. S., teams operated twelve to sixteen hours a day and slept in tents. The sheer volume of patients was horrendous; Cushing describes expanding from a 200 bed hospital to a 1300 bed one in a day for the more than 2000 patients who passed through.[8]

The loss of many doctors had hurt the British medical system. During the Battle of the Somme, more than 400 surgeons were killed or wounded. Often the physicians in the C. C. S. had only the slightest of medical education, able to provide only simple stabilizing medical care before evacuation. Cushing recalled performing delicate neurosurgical procedures in a hospital where the Americans were the only ones who could use an ophthalmoscope to check the patients' eyes after surgery. The Americans vastly expanded the range of medical care available to the patients.[9]

Sir William Osler, the dean of the medical school at Oxford, showed the respect that the British had for their American counterparts. When his son, Revere, was wounded 29 August 1917, he wired Cushing, asking him to operate on his son. Although Cushing, Crile, and others struggled to save him, Revere Osler died the next day.[10]

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[8]Cushing, *Surgeon's Journal,* 166-71. *Pennsylvania Hospital Unit,* 86, 141-58.

[9]Cushing, *Surgeon's Journal,* 166-71. *Pennsylvania Hospital Unit,* 86, 141-58. Woods Hutchinson, *The Doctor in War,* (Boston and New York: Houghton, Mifflin Company, 1918), 100.

[10]Cushing, *Surgeon's Journal,* 197.

## FIRST DEATHS FROM ENEMY ACTION IN THE A. E. F.

One of the hazards was German night bomber raids, which attacked hospitals despite the red cross markings. Tragedy struck 4 September 1917, when the Germans struck Base Hospital No. 5 at Camiers, killing Lieutenant William T. Fitzsimmons and Privates Oscar C. Tugo, Rudolph Rubino, Jr., and Leslie G. Woods, who became the first A. E. F. casualties by enemy action. For the entire war, the A. E. F. Medical Department lost 47 officers and 314 enlisted men killed in action and another 35 officers and 206 enlisted men died of wounds[11].

## SUMMARY: AMERICAN HOSPITALS WITH THE BRITISH

The British relied heavily on these American units. By 1917, their Medical Department was having trouble handling the massive numbers of casualties from the war. The numbers of casualties treated by the American base hospitals with the British demonstrates the heavy load of patients. Base Hospital No. 4 treated 82,179; No. 10 treated 47,811, and No. 21 treated about 60,000. These numbers do not include the numbers of patients the Americans treated at the C. C. S. or while working with British units. Overall, a daily average of approximately 800 officers, 600 nurses, and 1,100 soldiers was serving with the British.[12]

## EARLY ACTIVITIES OF AMERICAN HOSPITAL UNITS

The first Base Hospitals to support the American Expeditionary Forces (Nos. 6, 8, 9, 15, 17, 18, 27, and 39), arrived in France during the summer of 1917. These hospitals were important role in the establishment of the A. E.

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[11]Cushing, *Surgeon's Journal,* 204-206. "First Casualties in the A.E.F.," *Military Surgeon* 62 (March 1928): 383-84.

[12]Historical Division, *Reports,* 404. Munger, "Base Hospital 21," 287. *Pennsylvania Hospital Unit,* 64. Base Hospital No. 4, *Album de la Guerre,* 17.

F. hospitalization program. They also supplied vital personnel for the administrative changes in the chief surgeon's office. The War Department created a priority schedule that determined the shipping of units from the United States. It consisted of six phases which would together bring the units required for an army. The urgent requests from the Allies for machine gun and infantry units resulted in major changes to the schedule. The War Department required three to six months to prepare a medical unit for overseas. As a consequence, most of the medical units that arrived in France in 1917 and the first half of 1918, were ones that had been organized before the war. These fell into two groups, those medical units that made up the division sanitary trains and the Red Cross base hospitals.[13]

These hospitals provided care to the arriving A. E. F. troops. Often the Medical Department split the hospitals into teams to provide care in a variety of locations. Teams from the base hospitals staffed camp hospitals. Camp hospitals had no assigned personnel, so that their staffs came from Medical Department personnel already in France. Camp hospitals were 300 bed facilities with a crisis capacity of 500. They treated patients with minor illness. Anyone requiring more specialized care was evacuated to a base hospital. Very few ambulances were available initially, so these evacuations often used wagons or trucks. One problem that became obvious early in the war was that all the units required by the *Field Service Regulations* and *Manual for the Medical Department* need to be organized and staffed by specific units. The medical support that a combat division requires needs to

[13]Sanford H. Wadhams and Arnold D. Tuttle, "Some of the Early Problems of the Medical Department, A.E.F.," *Military Surgeon* 45 (December, 1919): 640-44. Center of Military History, United States Army, Order of Battle of the United States Land Forces in the World War, Zone of the Interior: Directory of Troops, Volume 3, Part 3 (Washington, D. C.: U.S. Government Printing Office, 1949) facsimile reprint (Washington, D. C.: U.S. Government Printing Office, 1988), 1429-55. *Field Operations*, 17-18.

accompany it overseas. The failure to send the camp hospitals and ambulance companies with the divisions increased the burdens on the hospitals in France.[14]

The base hospitals positioned themselves in buildings supplied by the French. During the fall and winter of 1917, the hospitals adapted to the new conditions in France and prepared for the increased combat that followed. The workload tended to be light. It was not until December 1917, that Base Hospital No. 9, with a capacity of 500 beds, averaged more than 100 patients in hospital.[15]

MEDICAL TRAINING

The hospitals and the sanitary trains of the divisions instituted training programs, not always popular or practical. Teams went to the British and French sectors to observe the care given by the Allies. Howard Barclay, of Base Hospital No. 15, gave a class on "Demography in so far as it relates to the vital statistics of the Army;" it was, unfortunately, typical of the classes given in his unit. Not all the doctors had such worthless training. Richard Derby, who served with the Second Division, took the two-week medical officer course at Langres under Colonel Bailey K. Ashford. He noted that the course was excellent, with lectures presented by the best French doctors in their specialties.[16]

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[14]*Field Operations,* 86-87.

[15] [George Clymer], ed., *The History of U.S. Army Base Hospital No. 6 and Its Part in the American Expeditionary Forces,* (Boston: Privately published, 1924), 8-10. *Base Hospital N.9, A.E.F.: A History of the Work of the New York Hospital Unit during Two Years of Active Service: Written by the Padre.* (New York: Privately published, 1920), 149. *History of Base Hospital No. 18, American Expeditionary Forces.* (Baltimore: Base Hospital No. 18 Association, 1919), 15-17.

[16]*Training,* 572-79. *Field Operations,* 90-92. Barclay, *A Doctor in France,* 46-48. Derby, *"Wade in Sanitary!",* 6-9, 24-26. Ashford, "Preparation of Medical Officers," 111-22.

EARLY COMBAT OPERATIONS

The first combat operations that American troops carried out involved training in the front-line trenches with the French at the end of 1917 and early in 1918. The First Division entered the trenches in October 1917. Although there was a marked shortage of hospital units in general and evacuation hospitals in particular, the low level of combat led to minimal casualties that were easily handled by the evacuation hospitals supplemented by base hospitals. For example, the First Division Field Hospital No. 13 evacuated directly to Base Hospital No. 18 at Bazoilles-sur-Meuse. Especially in the Toul, Luneville, and Baccarat sectors, where American troops trained, most of the hospitals turned over by the French came with equipment, so the Medical Department needed only to staff them.[17]

Where American hospitals were not available, the wounded went to French hospitals. Having Americans in French hospitals, not cared for by Americans proved unsatisfactory. The French hospital trains were "wretchedly equipped" and misunderstandings from the differences in language often created dissatisfaction with the medical care. The French hospital trains scattered the Americans throughout France and the Medical Department spent much time and effort to bring these patients back to American facilities.[18]

The American divisions went up to the line according to schedule. This allowed the medical staff at G. H. Q. to anticipate hospitalization requirements and to assign adequate evacuation and mobile hospitals and evacuation ambulance companies. This changed drastically in March 1918,

[17]War Department, *Report of the Surgeon General, 1919,* (Washington, D. C.: Government Printing Office, 1919), 1458-59, 1469-71. *Field Operations,* 291-95.
[18]*Report of the Surgeon General, 1919,* 1458-59, 1469-71. *Field Operations,* 291-95.

when the Germans started their spring offensive. As the German advance threatened the French and the British lines, American units took positions in the trenches on short notice. The first action that involved significant American hospitalization was the 26th Division at Seicheprey on 20 April 1918. There were over 650 casualties triaged, which the system handled without problem. The only problem noted was a shortage of litter bearers.[19]

When the 26th Division went into the trenches near Seicheprey, its hospitalization fell to the French. The only American hospital nearby was the old *Ambulance Americaine,* now renamed Red Cross Military Hospital No. 1. The French agreed to send wounded Americans there. This was technically a French hospital, so the French fulfilled their responsibility to provide hospitalization for the Americans serving with them, while allowing the American patients to go to an American-staffed hospital. The American demand to hospitalize all their countrymen remained a source of friction between the two medical staffs until the Americans received their own sector.[20]

This marked the end of the first phase in the American medical operations. It was characterized by easily planned treatment rendered from fixed facilities to soldiers in camp or in defensive positions in trenches. This time proved invaluable to the Medical Department. It enabled the medical units to train in military subjects and to learn first hand the demands of combat care without getting overwhelmed. These experiences provided a foundation for the more demanding medical challenges ahead.

[19]*Report of the Surgeon General, 1919,* 1469-71, 1580-81.
[20]*Report of the Surgeon General, 1919,* 1458-59, 1469-71. *Field Operations,* 986-87.

PHASE TWO – MAY TO AUGUST 1918

The German Spring Offensive in 1918 severely strained the Allied forces. The situation became so desperate that American units fought into active sectors as part of the French armies. This second phase involved providing medical care to the divisions in their operations with the French. The combat operations that make up the second phase are the Cantigny, Aisne, and Aisne-Marne Operations.

The first major engagement that American troops fought was the attack on Cantigny. In that battle, a reinforced regiment of the First Division captured the town of Cantigny and held it against German counterattacks as part of the French Sixth Corps. There was no American hospitalization in the area, so responsibility for the American forces fell to the French. Despite, this arrangement in the orders, the American Medical Department, felt uneasy about trusting the evacuation and care of the wounded to the Allies. They proposed setting up an American evacuation hospital at Beauvais to evacuate patients to the American base hospitals. The French refused this arrangement because it required American hospital trains to move against the flow of the rest of the evacuation, further confusing a difficult operation.[21]

Cantigny was the first battle for the A. E. F. The Medical Department tried many of the innovations it had developed after arrival in France. First, the division surgeon assigned specific field hospitals for gas, triage, and non-transportable wounded. Second, the field hospital treating the non-transportable wounded received operating teams from the base hospitals. Third, a field medical supply depot set up in the immediate rear of the division. Fourth, the ambulances carried out resupply by backhauling

[21]*Report of the Surgeon General, 1919,* 1459-60,1471-73.

medical supplies when they returned to the front. Finally, a medical officer served as the regulating officer for the railroad evacuations.[22]

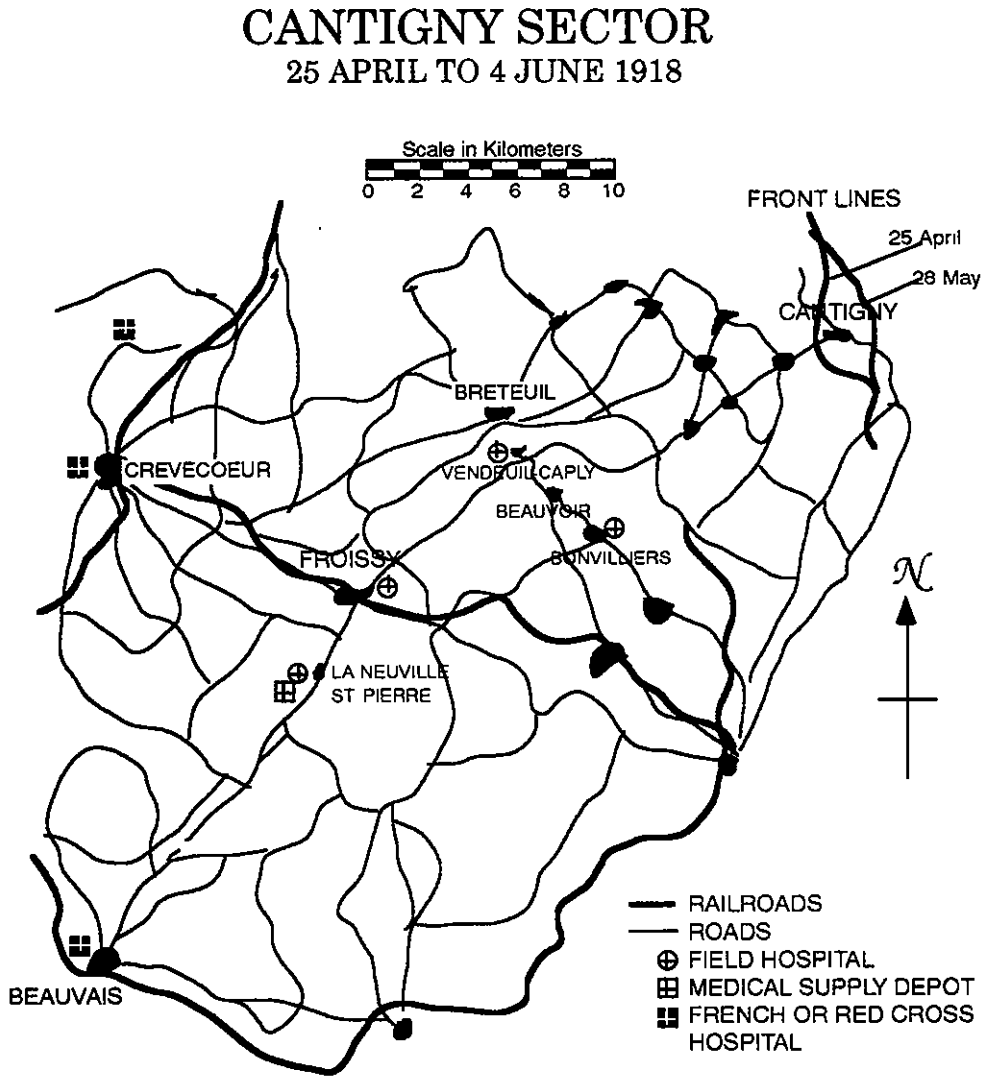


**Figure 6:** The Cantigny sector with evacuation routes and hospitals.[23]

The command and control for the operation was complicated. The First Division was assigned to the French Sixth Corps. The Chief Surgeon, A. E. F.

[22]*Field Operations*, 298-99.
[23]Adapted from *Field Operations*, Plate III opposite page 296.

assigned Colonel Paul C. Hutton as the medical liaison officer with the French Army. During the offensive, Hutton, who was a member of the medical section at the G. H. Q., served in the role of corps surgeon for the First Division. He supervised its medical activities to include, evacuation of casualties, provision of supplies, and served as the medical liaison between the division and G. H. Q. These duties evolved into the responsibilities of the corps and army surgeons later in the war.[24]

The First Division Surgeon located the divisional hospitals, while the surgeon of the Sixth Corps (French) established the evacuation system. Field Hospital No. 13, at Vendeuil-Caply, served as the triage and gas hospital. It received all patients, except those that went from the dressing station directly to the Field Hospital No. 12 at Bonvillers, which treated the non-transportable wounded. From Field Hospital No. 13, the slightly wounded went to a French hospital at Crèvecoeur. The seriously wounded went to an American Red Cross Hospital at Beauvais. Field Hospital No. 12 received those that were too sick for further transportation. Five surgical teams from base hospitals augmented this hospital to supplement its surgical capability. Field Hospital No. 2 at La Neuville-St. Pierre, received the sick and slightly gassed as it was a horse-drawn unit. Field Hospital No. 3 at Froissy cared for the more seriously gassed patients.[25]

The medical system worked well within the division. The hospitals for the gassed and the non-transportable patients proved their worth. The total casualties in the Cantigny operation were 199 killed and 652 wounded.

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[24]*Field Operations*, 299. *Report of the Surgeon General, 1919*, 1510.
[25]*Field Operations*, 298-305. *Report of the Surgeon General, 1919*, 1510.

However, during the entire period that the First Division remained in the sector, the division's field hospitals admitted 7,689 patients.[26]

Problems arose after the patients left the field hospitals and entered the French system. The Americans continued to complain about the French hospital trains and medical care. American patients sent to French hospitals were difficult to track and return to American care. Two solutions developed to these problems. First, the Red Cross Military Hospital No. 1, in Paris, received many of the American wounded. The Red Cross established a second hospital at Beauvais. This hospital had a French commanding officer to keep the hospital under French control. This meant that the French controlled its evacuation. However, the hospital had an American staff, which reassured the A. E. F. The second solution involved removing all American patients from the French hospital trains at a station near Paris. From there, they went by ambulance to American hospitals. Col. Hutton, worked at the station with a detail of sanitary personnel to coordinate the evacuation and appropriate hospitalization of these patients.[27]

The Cantigny operation was a success for the Medical Department. The basic medical doctrine with the changes adopted in France had handled the casualties well. The system only had problems in liaison with the French and Hutton handled these well. This success established a foundation for the medical support of the more complicated operations that followed.

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[26]*Field Operations,* 298-305. *Report of the Surgeon General, 1919,* 1510.
[27]*Report of the Surgeon General, 1919,* 1459-60,1471-73. *Field Operations,* 306-08.

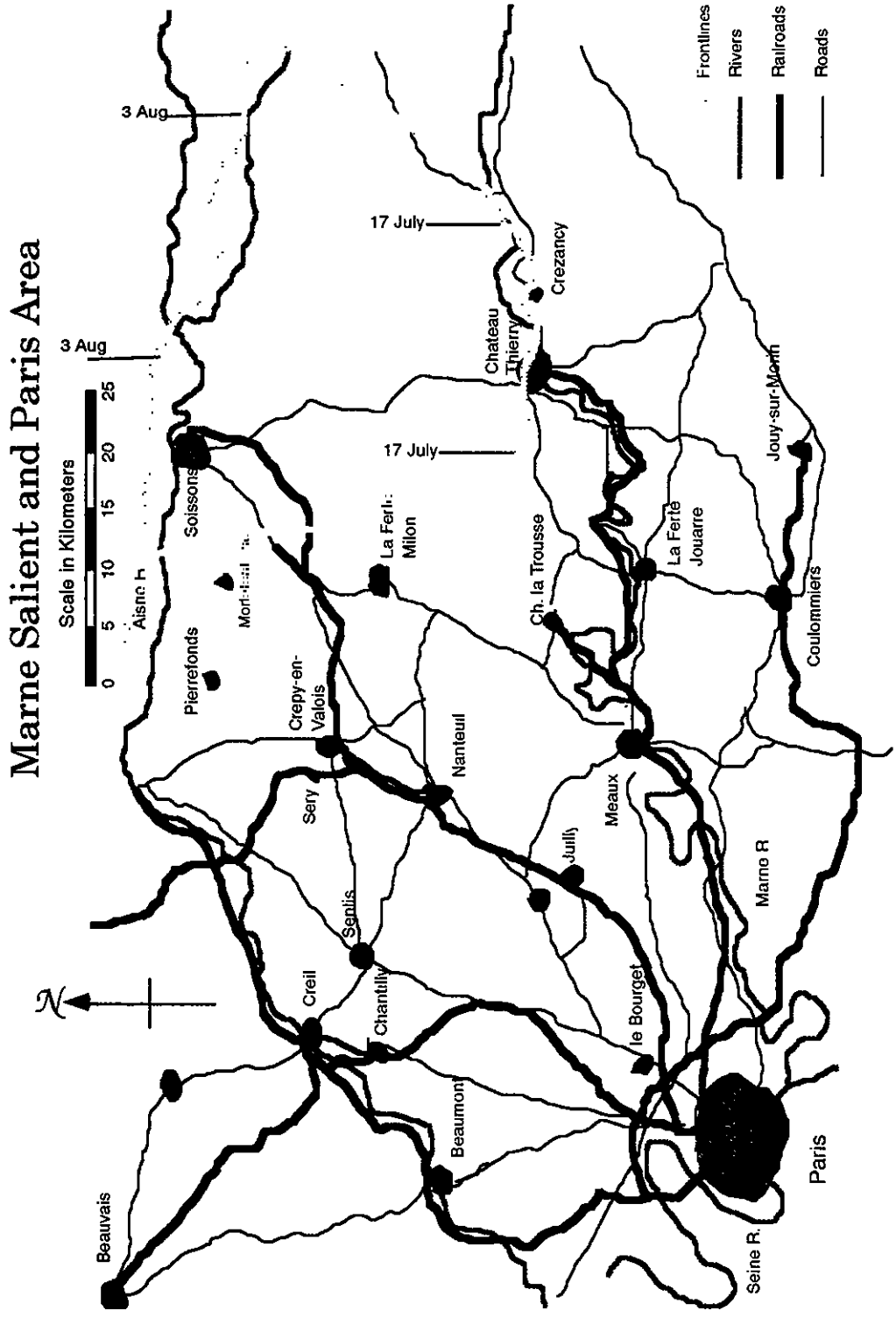


**Figure 7:** Map of the Paris area, June to August 1918[28]

[28]Adapted from *Field Operations,* Plate V opposite page 358.

AISNE–MARNE OPERATION

The Aisne-Marne operations stressed the system more drastically. On 27 May 1918, the Germans reached the Marne east of Chateau-Thierry. On 31 May, the American Second and Third Divisions rushed forward to stop the advance. The hurried deployment of these divisions did not allow the establishment of a proper evacuation system behind them. As the French retreated, they lost the evacuation hospitals that had supported their troops in the region, a loss of about 45,000 beds. Without any means to provide these facilities for the American units, the French, for the first time, allowed the Americans to furnish the medical support for units serving in French Armies. This decision, although welcomed by the Americans, complicated the work of the Medical Department. First, the A. E. F. was dreadfully short of evacuation hospitals with only eight in Europe, instead of the fifty called for by doctrine. Second, the fixed base hospitals that the Americans had built were in the originally selected American sector in Lorraine, where they were not well situated to support the troops near Paris.[29]

The fighting took a heavy toll in the Second Division, and its medical personnel struggled to provide care to the wounded. Derby, who was the assistant division surgeon during this period, recalls visiting aid stations that had treated over 750 casualties in thirty-six hours, where the staff worked until they dropped of exhaustion. These aid stations were close to the front line and under enemy shell fire. Navy Lieutenant Commander Joel T. Boone, who won a Medal of Honor a month later, had his regimental aid station destroyed by artillery on two consecutive days and ten men killed. He earned

[29]J. R. Kean, "Evacuation of the American Wounded in the Aisne-Marne Battles, June and July, 1918," *Military Surgeon* 56 (April 1925): 473-77. Derby, *"Wade in Sanitary!,"* 49-51. *Field Operations,* 320-29.

a Distinguished Service Cross for continuing to provide care to the wounded marines throughout this shelling.[30]

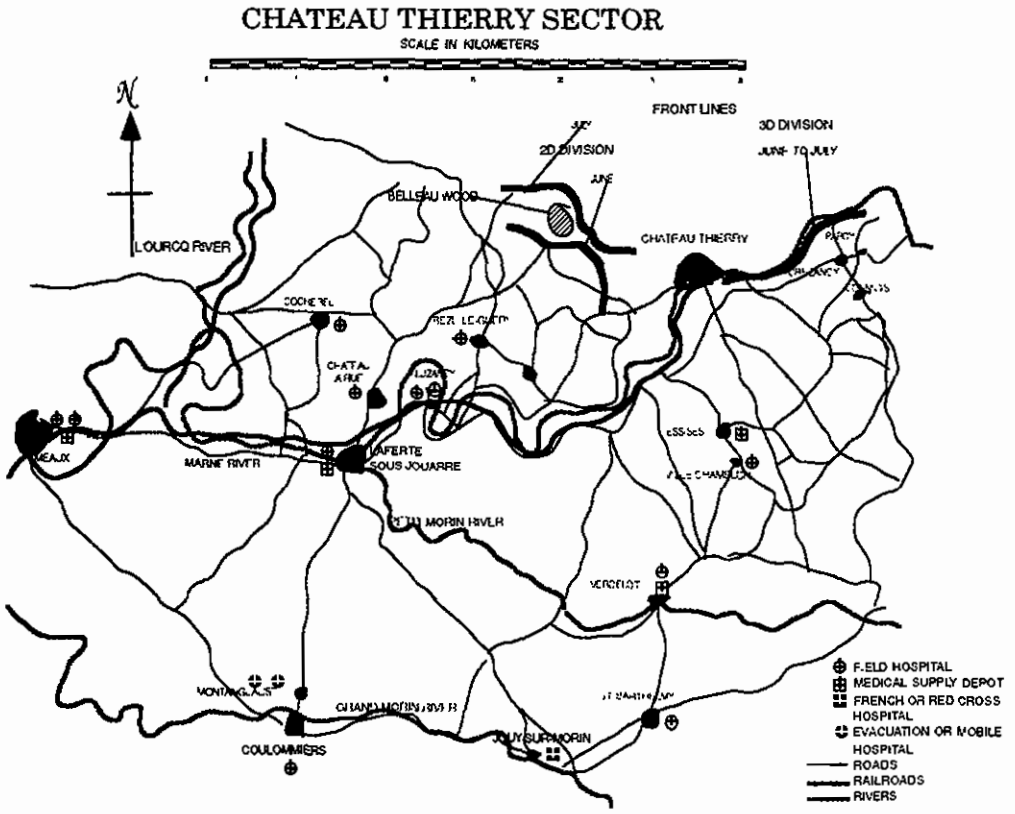


**Figure 8:** Chateau-Thierry Sector, June to July 1918[31]

## ESTABLISHMENT OF HOSPITAL FACILITIES

The Medical Department worked to establish adequate medical care behind the divisions. This work occurred at several levels. First, G. H. Q. had established a headquarters in Paris called G-4, Paris group, which had responsibility to supervise supply and evacuation for the American divisions in its area. Colonel Hutton became the surgeon for this group as this

[30]Derby, *"Wade in Sanitary!,"* 68-72. Edgar E. Hume, "The Medical Book of Merit: United States Army and Navy Decorations Awarded to Medical Officers for Distinguished Service in the World War," *Military Surgeon* 56 (March 1925): 292-93.
[31]Adapted from *Field Operations,* Plate IV opposite page 312.

continued his work during the Cantigny operation. He met with Colonel Charles R. Morrow, the Second Division Surgeon, and Colonel William R. Eastman, the Third Division Surgeon, to coordinate with them the plan for evacuation and treatment of the casualties. After this meeting, Hutton wired the G-4 medical section for urgently needed evacuation and mobile hospitals, hospital trains, operating teams, surgical units, and any miscellaneous medical personnel available.[32]

The second step to provide adequate medical care involved coordinating evacuation and hospitalization with the French. Hutton continued in his job as liaison officer and requested hospitalization for our wounded in French hospitals. Colonel Arnold D. Tuttle went from the medical section of G-4 to request assistance from the Sixth French Army. The French had trouble caring for their own casualties at this point and asked the Americans to provide hospitalization themselves.[33]

SECOND DIVISION

This left the Medical Department to arrange hospitalization as best it could. In the Second Division, the field hospitals set up according to doctrine. Field Hospital No. 1 carried out triage at Bezu-le-Guery only one to eight kilometers behind the battalion aid stations. It served initially as the hospital for the non-transportable wounded. The division surgeon tried using Field Hospital No. 15 as an alternate triage station, to rest the staff of Field Hospital No. 1, but the experiment confused the ambulance drivers as to where to bring patients and was discontinued. At first, Field Hospital No. 23

[32]*Field Operations*, 311, 320. Kean, "Evacuation in the Aisne-Marne," 473-77.

[33]Kean, "Evacuation in the Aisne-Marne," 473-77. *Report of the Surgeon General, 1919*, 1460-61,1473-75, 2025-29.

established a relay station at Meaux between Bezu and Juilly and treated sick and slightly wounded. It moved forward on 9 June and treated the seriously injured at La Ferte-sous-Jouarre. The horse-drawn field hospital, No. 16, assisted Field Hospital No. 23 at Meaux. It moved to Luzancy on 11 June, where it joined Field Hospital No. 15.[34]

EVACUATION HOSPITALS

The biggest problem was to supply hospitalization behind the divisions. The surgical consultant for the Second Division, Major Burton J. Lee, evaluated the situation and found that the only hospital in the area that could serve as an evacuation hospital in the initial fighting was Army Red Cross Hospital No. 7 at Juilly. This was a 280-bed hospital under the direction of Red Cross Hospital No. 1 and headed by Dr. Charles G. Mixter of Boston. On 2 June 1918, the G-4 Medical Section augmented it with supplies and personnel to increase its bedspace to 800. Three surgical teams arrived the next day, but the wounded quickly swamped the hospital.[35]

On 4 June, Colonel Sanford H. Wadhams, the head of the medical section at G. H. Q. and A. E. F. Chief Surgeon Ireland went to the Second Division headquarters to meet with the Chief of Staff (the division commander was unavailable) to discuss the situation and optimize medical support. They next visited the Chief Surgeon for the French Sixth Army, Medecin Inspecteur Lasnet, and the Red Cross Hospital at Juilly. Although both approved of the steps taken to remedy the deficiencies, they realized

[34]Derby, *"Wade in Sanitary!,"* 70-79. *Field Operations,* 315-17.

[35]Kean, "Evacuation in the Aisne-Marne," 473-77. *Field Operations,* 320-29. *Report of the Surgeon General, 1919,* 1460-61,1473-75, 2025-29. Frederick Pottle, *Stretchers, The Story of a Hospital Unit on the Western Front,* (New Haven: Yale University Press, 1929), 127-30. Arthur M. Shipley and Agnes T. Considine, *The Officers and Nurses of Evacuation Eight,* (New Haven: Yale University Press, 1929), 9. *History of Base Hospital No. 18,* 76-77.

that more evacuation hospitals were sorely needed. The Chief Surgeon requested the G. H. Q. send Evacuation Hospital No. 8 to Juilly immediately. This hospital had just arrived in Brest and was the only American evacuation hospital readily available. The French could not provide the necessary transportation, so Colonel George Van Horn Moseley, the Assistant Chief of Staff, G-4, G. H. Q., urgently requested of the chief of the French mission to expedite the movement. Although cars became immediately available, the hospital did not reach Juilly until the morning of 8 June.[36]

Evacuation Hospital No. 8 operated using Red Cross equipment as there had not been time to bring its own to the front. They arrived to find the personnel at the Red Cross Hospital, "too weary to lift a litter to the upper tier of the ambulance." A detachment from the Second Division relieved the exhausted staff until Evacuation Hospital No. 8 arrived. The Red Cross Hospital treated about 1,700 patients before it was relieved. In the next week, Evacuation No. 8 treated an equal number. Colonel John M. T. Finney, the chief consultant in surgery, sent surgical teams from Base Hospital No. 18, No. 35, and a Navy team. Six surgical teams assisted Evacuation No. 8 during the fighting. Evacuation No. 7 and Mobile Hospital No. 1 arrived on 12 June, and started treating patients the next day. These two hospitals worked under a consolidated command and tentage. They treated approximately 2,700 patients over the next six weeks. Evacuation No. 7 had not received its operating equipment, so the surgeons performed all their operations on the four tables of Mobile Hospital No. 1. Back in Paris, the

[36]Kean, "Evacuation in the Aisne-Marne." 473-77. *Field Operations*, 320-29. *Report of the Surgeon General, 1919*, 1460-61,1473-75, 2025-29. Pottle, *Stretchers*, 127-131. Shipley and Considine, *Evacuation Eight*, 9-11.

medical staffs worked for three days without sleep to try to treat the tremendous number of patients.[37]

The Medical Department established an evacuation system for the sick and wounded behind the Third Division also. One of the first steps was to get the Red Cross to establish a hospital at Jouy-sur-Morin. Both the Army and the Red Cross staffed this hospital, with the Army supplying the commissioned personnel. Designated American Red Cross Hospital No. 107, it had a 700 bed capacity. During the fighting at Belleau Woods, it received patients from Evacuation No. 7 and Mobile Hospital No. 1.[38]

PATIENT EVACUATION

The rapid German advance disrupted the railroads, which forced patient evacuation from the evacuation hospitals by ambulance and truck. Colonel Ernest G. Bingham who was responsible for the hospital center in Paris, worked with Colonel Percy L. Jones, who headed the U. S. Ambulance Service with the French Army, to obtain sufficient ambulances to make the evacuation system work. The A. E. F. borrowed approximately 200 ambulances from the French for the Second Division and another 100 for the evacuation back to Paris. The Second Division used Ford ambulances for the evacuation to Field Hospital No. 1, which served as the triage. It used the larger General Motors ambulances for the longer evacuations to Juilly. Despite the augmentation, there were still not enough ambulances. The shortage of vehicles meant that trucks and buses also evacuated patients. This trip of 40 to 100 kilometers (25 to 63 miles) over rough cobbled roads by

[37]Pottle, *Stretchers*, 127-131. *Field Operations*, 320-29. Shipley and Considine, *Evacuation Eight*, 9-11. *Report of the Surgeon General, 1919*, 1703. Kean, "Evacuation in the Aisne-Marne," 476-81

[38]*Field Operations*, 320-29. Kean, "Evacuation in the Aisne-Marne," 476-81.

any vehicle available was the only way to clear the battlefield of wounded. Unfortunately for the seriously injured, it decreased the chance of survival. For example, on the night of 7 June 1918, more than 700 cases arrived at Red Cross Military Hospital No. 2 in Paris, of these about 500 had not yet received an operation, many died along the way back.[39]

THE INSPECTOR GENERAL'S INVESTIGATION

Through this hastily gathered collection of medical assets, the Medical Department managed to provide care to the Second Division at Belleau Woods. The situation clearly demonstrated the problems caused by the severe shortage in evacuation hospitals and the reliance on the Red Cross for supplies and hospitals. The consultant system had worked well in finding facilities for the wounded and in supplementing those facilities with surgical teams from the base hospitals. After the battle, a newsman, Mr. Whitney, wrote that the Medical Department had failed to provide proper medical care. The Inspector General of the A. E. F. made a complete investigation that concluded, "the care received by the wounded during the period in question was as good or better than that received by the soldiers of the other allied armies under similar battle conditions." Whitney acknowledged that he had written his report on hearsay evidence and concurred in the findings of the Inspector General. One of the Inspector General's recommendations was for fuller representation of the Medical Department on the General Staff. The final one and most important, recommended an urgent increase in number of sanitary personnel and establishment of more hospitals.[40]

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[39]Kean, "Evacuation in the Aisne-Marne," 473-77. *Report of the Surgeon General, 1919,* 1460-61,1473-75, 2025-29. Derby, *"Wade in Sanitary!,"* 60-62. *Field Operations,* 320-29.

[40]*Field Operations,* 329-38 (This section contains reprints of the response of the medical section of the G-4, General Brewster's conclusions, and Mr. Whitney's letter in response). Report reprinted in part in Kean, "Evacuation in the Aisne-Marne," 481-83.

SECOND BATTLE OF THE MARNE

The last phase of the German offensive fell on the French Sixth Army from 15 to 17 July 1918. The main American units engaged were the Third Division, Fourth Division, Forty-second Division, and the First Corps with the Twenty-sixth Division and the French 167th Division. The brunt of the attack fell on the right wing of the French Sixth Army where the American Third and the French 125th Divisions held the line. Fortunately, the fighting of the previous month had allowed the Medical Department to prepare for the casualties.[41]

Colonel Jay Grissinger, the First Corps surgeon, recalled taking over a quiet sector on 4 July. In his diary for 11 July, he described, "an ominous quiet prevails everywhere. No one seems to know where the Germans will strike next." Grissinger organized the corps surgeon's office similarly to the divisions, with an assistant, an executive, and consultants for the specialties. The surgeon set up with the rest of the corps headquarters at La Ferte-sous-Jouarre. Orders No. 6, First Army Corps, 9 July 1918, detailed the medical evacuation plan. This established the location of the triage for the 26th Division at Bezu-le-Guery, provided for evacuation back to Evacuation Hospital No. 7 and located the hospital for the non-transportable at La Ferte-sous-Jouarre.[42]

The Twenty-sixth Division plans supplemented the corps plan. They set up their field hospitals according to doctrine. The terrain defended,

[41]The German leaders ordered a cessation of the attack 16 July, however attacks continued through 17 July. Edward M. Coffman, *The War to End All Wars: The American Military Experience in World War I,* (New York: Oxford University Press, 1968), 227. *Field Operations,* 341-42.

[42]*Field Operations,* 342-44. Jay W. Grissinger, "Field Service," *Military Surgeon* 62 (February 1928): 157-58, 161-62. Field Orders, First Army Corps, Nos. 2 to 95 incl., TMs, United States Army Command and General Staff College Library, Fort Leavenworth, KS.

helped the sanitary train provide medical care also. There were many well-constructed farmhouse cellars where the regiments set up their aid stations. This provided excellent medical care for the division as demonstrated by handling approximately 2,000 casualties without strain. The same set up served for the follow-up offensive by the Allies.[43]

THIRD DIVISION, "THE ROCK OF THE MARNE"

Further to the east, the Third Division suffered the brunt of the German bombardment and offensive. The division surgeons, Colonel William R. Eastman and Colonel Frederick S. Wright, had set up the aid stations and field hospitals to effectively support the front line.[44] The two regiments that suffered the heaviest casualties were the 30th and 38th Infantry. The 30th Infantry set up its regimental and battalion aid stations near Crezancy. The fighting was so severe, that the majority of the 450 casualties who received treatment at the regimental aid stations were seriously wounded. The slightly wounded and gassed had to find their own way to the rear. The 38th Infantry provided care under even more trying conditions. The heavy casualties it suffered required increased medical support. One officer and twenty men from Ambulance Company No. 5 reinforced the regimental aid station from 15 to 17 July.[45]

This was a particularly difficult and dangerous regiment to support medically. The force of the German attack forced some of its elements to fall back. This allowed an aid station at Paroy to fall into enemy hands. Captain Hoddie W. Daniels, responsible for the aid station, returned with an infantry

[43]*Field Operations*, 342-44. *Report of the Surgeon General, 1919*, 1583-84.
[44]Colonel Wright took over as division surgeon on 15 July 1918. *Field Operations*, 979.
[45]*Field Operations*, 344-46. *Report of the Surgeon General, 1919*, 1548-49.

patrol, two ambulances and a YMCA truck. They recaptured the aid station until they evacuated all the patients. Daniels was killed treating the wounded on 19 July. Similarly, when a medical officer and ten men went on 17 July to the regimental aid station of the 38th Infantry at Connigis, ten became casualties.[46]

### DIVISIONAL MEDICAL CARE

The thorough preparations made before the German attack helped the Medical Department handle the heavy load of patients. Fortunately, the sector had a well-developed road network for evacuation. The division had sixty ambulances available, but they were insufficient for the massive casualties. The division transportation officer provided eighty trucks to serve as supplementary evacuation vehicles. These enabled the division's sanitary train to evacuate over 8,000 casualties from 15 to 18 July.[47]

The field hospitals suffered under the heavy load of patients. Field Hospital No. 27 worked with a French hospital that set up with it at Verdelot; it provided triage, and cared for the non-transportable, sick, and slightly wounded. The consultants sent one shock team, four surgical teams, and nine nurses to reinforce it. During the period from 15 to 27 July, it admitted 4,512 patients, three-quarters of whom were from the Third Division and the rest from the Twenty-eighth.[48]

### MEDICAL CARE IN THE REAR OF THE DIVISIONS

Behind the field hospitals, the Medical Department had established a well-staffed group of hospitals under the direction of Colonel Hutton. These

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[46]*Field Operations,* 344-46. *Report of the Surgeon General, 1919,* 1435, 1548-49.
[47]*Field Operations,* 344-47. *Report of the Surgeon General, 1919,* 1474-75, 1548-49.
[48]*Field Operations,* 348. *Report of the Surgeon General, 1919,* 1548-49.

hospitals were: Evacuation Hospital No. 7 with Mobile Hospital No. 1 at Chateau Montanglaust; Army Red Cross Hospital No. 107 at Jouy-sur-Morin; Evacuation Hospital No. 8 at Juilly; and Army Red Cross Hospital No. 105 at Juilly. Most of these hospitals had arrived in the sector to support the fighting in June. Because Jouy-sur-Morin and Chateau Montanglaust were closest to the fighting, most of the casualties arrived there. Colonel Hutton moved the surgical teams from Evacuation Hospital No. 8 and sent them to Evacuation Hospital No. 7 and Army Red Cross Hospital No. 107. These hospitals suffered under the huge number of patients. The operating teams and litter bearers worked twenty hours out of each twenty-four. To complicate matters further, during the night of the 15th, German planes bombed the hospitals causing one death and wounding eighteen, four mortally. By the evening of 17 July, all transportable wounded had left the field hospitals. Evacuation Hospital No. 7, alone, sent 3,564 patients to the rear during 16 and 17 July.[49]

ASSESSMENT

The Medical Department succeeded in meeting the challenge of the German offensive in July better than it had in June. This success resulted from adaptations made at many levels. At the lowest levels, the battalion and regimental medical personnel were more experienced. They had been in the same location for over a month and had time to organize aid stations and evacuation plans. The divisional medical assets similarly knew the medical plan. The field hospitals received proper augmentation to allow them to handle the large numbers of casualties. The ambulance companies responded

[49]*Field Operations*, 353-54. *Report of the Surgeon General, 1919*, 1474-75.

promptly to the increased number of evacuations by securing additional vehicles from the division transportation officer. Evacuation proved much easier over the shorter distances and better roads west of Chateau Thierry.[50]

Behind the divisions, the system worked more effectively, as well. The evacuation hospitals were in place, along with evacuation plans and means. The hospitals survived the test of the June fighting and developed effective systems for triage and treatment of casualties. The management of the hospitals became more efficient with the appointment of Colonel Hutton as the surgeon for the Paris Group, reporting to the medical section, G-4. He served in the role of army surgeon for the medical units involved. With this experience, the American Army showed that it could handle the demands of providing medical care in the defense. The next challenge would be to provide medical care in the mobile warfare during the Allied offensives of the second half of 1918.

THE AISNE–MARNE OPERATION (SOISSONS)

After the Allies stopped the German offensive, they shifted to the offense. This was the beginning of the second phase of the A. E. F.'s involvement in the war, when the fighting shifted to mobile warfare. One of the first operations was to reduce the Marne salient. This would free the Paris-Nancy Railroad and reduce pressure on Paris. The American First and Second Divisions with the First French Moroccan Division were the spearhead of the attack. They each drove the Germans back, capturing the heights south of Soissons. The French threw these divisions into the line

[50]*Report of the Surgeon General, 1919,* 1548-49.

without first notifying the American command that they had committed the divisions to combat.[51]

### ADAPTING TO MOBILE OPERATIONS

The First and Second Division medical units had to adapt to different conditions than those of their previous battles. Battalion aid stations set up in cellars, shell holes, caves, old gun emplacements, or anywhere else that they could shelter the wounded and the medical staff. These stations needed to be mobile to keep up with the advancing troops. The regimental aid stations struggled to keep the wounded evacuated to the rear. A tremendous shortage of litter bearers resulted. Medical units used soldiers from the infantry companies and enemy prisoners of war as litter bearers.[52]

### FIRST DIVISION

The First Division suffered from lack of coordination of its medical efforts. The division commander had removed the sanitary train from the control of the division surgeon during the march toward Soissons. The French had established the evacuation routes and dressing station locations. Because of this confusion, the division had only one dressing station in operation when it attacked. This was nine kilometers behind the lines in a barn shared with the French. The rapidity of the movement prevented the designation of evacuation routes. This confusion hampered effective medical care in the initial hours of the attack.[53]

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[51]*Field Operations,* 357-60. *Report of the Surgeon General, 1919,* 1473-75, 1511-13. Kean, "Evacuation in the Aisne-Marne," 484-88.

[52]*Field Operations,* 360-62. Kean, "Evacuation in the Aisne-Marne," 484-88.

[53]*Field Operations,* 362-63. Kean, "Evacuation in the Aisne-Marne," 488-90.

This confusion complicated care by the field hospitals. Field Hospital No. 3 served as the triage hospital at Mortefontaine. The division surgeon requested that it move farther forward to Coeuvres-et-Valsery where he had established a large collection point. The division G-1 disapproved this move, because he felt that Coeuvres-et-Valsery was vulnerable to shell fire. This meant that the patients at the collection point required evacuation further back, causing the ambulances to travel an extra 4,000 miles. Shell fire did not hit the collection point. Field Hospital No. 3 treated and evacuated over 5,000 patients. Field Hospital No. 12 received extensive augmentation from Field Hospital No. 2, surgical teams, and X-ray equipment. It treated 3,385 patients until the Fifteenth Scottish Division relieved the First Division. Field Hospital No. 13, functioned as an improvised evacuation hospital, until evacuation hospitals arrived to support the division. It transferred 2,987 patients to French hospitals and to hospital trains. Evacuation Hospital No. 5 relieved it on 20 July.[54]

The experience of the surgical teams from Base Hospital No. 46 illustates the chaotic conditions. This hospital had just arrived at Bazoilles, and its surgeons had started a two-week familiarization at Evacuation Hospital No. 1. Two days into the course, Colonel William L. Keller, chief of the consultants ordered their immediate return. Within one hour of their return, three surgical teams from Base Hospital No. 46, six from Mobile Hospital No. 1, and two from Base Hospital No. 42 were driving madly through the night. Despite a five-car collision, they arrived at Field Hospital No. 12 the next day. Here, 1,500 patients littered the ground awaiting

[54]*Field Operations,* 364. Kean, "Evacuation in the Aisne-Marne," 491.

surgery, while the surgeons struggled through twenty-four hour shifts. They remained there eight days until the hospital was relieved.[55]

EVACUATION BY THE FIRST DIVISION

Evacuation of the wounded remained a problem. The number of ambulances was inadequate. The Red Cross obtained forty ambulances to help, which the division supplemented with trucks. Because the animal-drawn ambulances proved unsatisfactory, those personnel worked as litter bearers.[56]

The division had not designated evacuation routes before the operation. In the advance that followed, the few roads quickly became crowded with ammunition and artillery moving forward. The evacuation routes were long, fifty-five kilometers to Senlis and Chantilly. The division surgeon instituted three separate evacuation circuits. The first used the General Motors and Ford ambulances and evacuated from as far forward as possible to the dressing stations and triage. This stage worked exceptionally well, with the wounded removed from the battlefield within six hours . The second circuit used the few remaining General Motors ambulances to evacuate from triage to Field Hospital No. 12, which cared for non-transportable wounded. It used trucks and animal-drawn ambulances to evacuate patients to Field Hospital No. 13, which acted as an evacuation hospital. The third circuit carried patients by trucks to the French evacuation hospitals at Senlis and Chantilly. The lack of adequate corps ambulance support from the French, forced the divisional units to evacuate

[55]*On Active Service with Base Hospital 46, U.S.A., Mar. 20, 1918 to May 25, 1919,* (Portland, OR: Arcady Press, 1919(?)), 100-01.

[56]*Field Operations,* 362-63. Kean, "Evacuation in the Aisne-Marne," 488-90.

beyond the division rear. This added considerable difficulty to an already stressed system.[57]

The failure of the French to evacuate the hospitals quickly led to overcrowding. The French established a holding area at Crepy-en-Valois for evacuation by hospital train. Unfortunately, the French had not provided sufficient hospital trains, so many of the wounded waited at Crepy with minimal care. The First Division called urgently to the American G. H. Q. and on 20 July, Evacuation Hospital No. 5 started to receive patients at Crepy. This hospital, augmented by surgical teams from the base hospitals, provided urgently needed medical care. Many of the patients had waited two days for operation until Evacuation Hospital No. 5 arrived.[58]

SECOND DIVISION

The Second Division suffered from the inadequate preparation by the French as well. The battalions set up their aid stations as close to the enemy lines as possible before the attack. Some of these were as close as fifty yards from the German lines. Once the attack opened, the advance proved too rapid for the aid stations to keep up. The only medical care that they provided during the advance were collection points for the wounded at crossroads or where shelter was available. The aid stations suffered under the heavy shelling.[59] On 19 July 1918, Navy Surgeon Joel T. Boone, Acting Regimental Surgeon for the Sixth Marines, described the battle as follows:

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[57]*Field Operations,* 364-66. Kean, "Evacuation in the Aisne-Marne," 492-94. *Report of the Surgeon General, 1919,* 1473-75, 1511-13.

[58]*Field Operations,* 364-66. Kean, "Evacuation in the Aisne-Marne," 492-94. *Report of the Surgeon General, 1919,* 1473-75, 1511-13.

[59]*Field Operations,* 368-69. Kean, "Evacuation in the Aisne-Marne," 494-95. Derby, *"Wade in Sanitary!,"* 88-93.

> The darkest day in my whole career at the Front.... I accompanied the regiment afoot about three miles, passing through an area saturated with gas....
>
> While at the colonel's P. C. on the Vierzy-Tigny road,... we were observed by enemy planes and attracted considerable fire. There were several men killed and wounded in this area....
>
> Shortly after this, a call came from the Front that the regimental headquarters company was suffering very heavy casualties from high explosive shells....I rushed to do what I could for the wounded. The only shelter I could find was a cemetery wall about four feet high, behind which I had the wounded brought that I might apply most meager first aid. It looked while occupying this place, as though our work might terminate momentarily. The shelling was terrific; fragments of shell chipping out portions of the wall right behind us. One hospital corps man and I remained here until we had all the wounded cared for. We successfully got these men into a ravine just in time to avoid a complete wiping out....
>
> Our medical supplies were about exhausted.... I obtained a side car from the colonel and went to the other side of Vierzy which, at the time, was being heavily bombarded and saturated with gas. I fortunately made this trip successfully bringing up a car full of surgical supplies....
>
> I then manned the cave in which I had established my battalion aid station, and began caring for the several hundred wounded that I had there for the greater part of ten hours. There was no evacuation during the day until sometime late in the evening. Dressings ran out and there was no food. While toiling at this station and handling about a thousand men, the mental strain was terrific.... A number of my best friends in the regiment were lying here wounded during this long period of time.[60]

For his gallantry, Boone earned the only Medal of Honor awarded a medical officer in the war.[61]

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[60]Derby, *"Wade in Sanitary!,"* 89-93.
[61]Hume, "The Medical Book of Merit," 292-93.

EVACUATION

As with First Division, evacuation was difficult. The roads were so congested that an ambulance sent to provide evacuation for the Fifth Marines did not reach its station until noon on the day after the start of the attack, although the distance travelled was only twenty kilometers. The roads were very narrow, with shoulders of soft mud. Many vehicles skidded off the road, further complicating evacuation. The situation improved after the military police took charge of traffic flow 19 July. The Second Division still suffered from a severe shortage of ambulances, with only thirty-two serviceable General Motors ambulances and twenty-one trucks available. Like the First Division, divisional ambulances evacuated the field hospitals, because the French could not supply this service.[62]

FIELD HOSPITALS

The field hospitals had to serve in place of evacuation hospitals. Field Hospital No. 1 served as the division evacuation hospital, and took care of the non-transportable wounded. Triage was the responsibility of Field Hospital No. 23, which initially located at Haramont, but moved to Taillefontaine at noon of the first day. The facilities were poor, wounded soldiers received their treatment in tents or in the open. Field Hospital No. 15 ran a second sorting station in Bois de Brassois. These three hospitals cared for 3,213 patients in the five days they participated in the operation.[63]

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[62]*Field Operations*, 369-70. Kean, "Evacuation in the Aisne-Marne," 495-97. Derby, *"Wade in Sanitary!,"* 95-96.

[63]*Field Operations*, 370-72. Kean, "Evacuation in the Aisne-Marne," 497-99. Derby, *"Wade in Sanitary!,"* 88-93.

## MEDICAL DEPARTMENT SUPPORT ABOVE THE DIVISIONS

The First and Second Divisions were administratively part of the American Third Corps. For this operation, they were under tactical command of the French. The Third Corps staff were officially observers, but Colonel James L. Bevans, the corps surgeon tried to improve the medical care for his two divisions. The corps G-1 refused to tell him the evacuation plan, as this was a military secret. Col. Bevans then visited the field hospitals of the First Division. On seeing conditions there, he sent corps headquarters troops to help and requested ambulances and medical support from the Paris group headquarters, then arranged with Evacuation Hospital No. 5 to go to Crepy-en-Valois to treat the wounded who waited there.[64]

Colonel Hutton and the rest of the A. E. F. Medical Department did their best to improve the situation at Soissons. As mentioned , the French had not notified anyone in the Medical Department of the planned use of the First and Second Divisions. They had not adequately prepared hospitals for the operation and the wounded Americans suffered. Therefore, the American Medical Department scrambled to support its divisions.[65]

## SUPPORT FOR THE DIVISIONS

The first unit to respond was the Red Cross Hospital at Beauvais, which sent personnel to Chantilly to its hospital for the French. This hospital received supplies and personnel to expand to 400 beds. Six surgical teams drove up from Chaumont by automobile to boost the surgical capability of the field hospitals for the non-transportable wounded. Field Hospital No. 120,

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[64]*Field Operations,* 378-79.

[65]*Field Operations,* 372-75. Kean, "Evacuation in the Aisne-Marne," 499-503. *Report of the Surgeon General, 1919,* 1512.

from the Thirtieth Division, sent its personnel to care for the wounded accumulating at Crepy-en-Valois.[66] On 20 July, Evacuation Hospital No. 5, arrived and started medical care near Crepy-en-Valois. Colonel Hutton selected this site for the evacuation hospital as it was the closest that hospital trains could get to the front. In its first night of operations, Evacuation Hospital No. 5 admitted 477 patients; for the entire operation, it handled 2,626. Although it arrived too late to help the American First and Second Divisions, "its presence proved a godsend to a Scotch division rushed in to relieve the 1st and 2d Divisions with such haste its sanitary train was left far behind."[67]

WHAT WENT WRONG

The medical operations in the Aisne-Marne operation (Soissons) were disastrous. First, the French failed to notify the Assistant Chief of Staff, G-4, the American Medical Department, or the Paris group, which had responsibility for all the divisions operating in the region. The French refused to allow the division surgeon of the Second Division to communicate with the Services of Supply to get an evacuation hospital, because the French claimed adequate hospital facilities were available and to prevent information of the attack leaking to the Germans. If he had, Evacuation Hospital No. 5 could have been ready for casualties when the operation started. When the operation started, the French could not handle the large number of their own, much less American casualties. Eventually, the

[66]As with all the divisions in the Second Corps, the Medical Department detached the 105th Sanitary Train from the Thirtieth Division on its arrival in France. The field hospitals and ambulance companies provided augmentation to other units and camp hospitals while the division trained, after which only half of the sanitary train rejoined the division. *Field Operations,* 21-22, 875, 991-92. Derby, "*Wade in Sanitary!,*" 88-93.

[67]*Field Operations,* 372-75. Kean, "Evacuation in the Aisne-Marne." 499-503. *Report of the Surgeon General, 1919,* 1512.

Americans instituted their own hospitals and evacuation assets to care for the wounded.[68]

### AGREEMENT WITH THE FRENCH ON MEDICAL CARE

The situation was so bad that Colonel Hutton wrote to the Assistant Chief of Staff for the Paris Group, about problems with the French. Brigadier General George Van Horn Moseley, the Assistant Chief of Staff, G-4 wrote to the Chief of the French Mission on 31 August 1918. He proposed that whenever American divisions served under French command the A. E. F. establish its own hospitalization and evacuation behind the divisions, the French permit access of American hospital trains to the hospitals, and the French supply timely notification to the Americans as well as sites for at least two evacuation hospitals. The French accepted these propositions, which provided a sound basis for evacuation and hospitalization of American divisions with the French.[69]

### AISNE-MARNE OPERATION, PHASE TWO

In the second phase of the Aisne-Marne campaign, the American First Corps participated in the attack by the French Sixth Army that drove the Germans back across the Vesle River. The American Twenty-sixth Division attacked first, followed by the Forty-second, and finally, the Fourth Divisions. The American Third Corps, with the Third and Thirty-second Divisions, also participated in this attack. This operation showed that the Army Medical Department adjusted to the problems that it encountered in the previous

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[68]*Field Operations,* 375. Kean, "Evacuation in the Aisne-Marne," 502-04. Derby, *"Wade in Sanitary!,"* 87. *Report of the Surgeon General, 1919,* 1462, 1474, 1512.

[69]*Field Operations,* 375-77. Kean, "Evacuation in the Aisne-Marne," 502-04.

months' fighting as it started to work out the provision of medical care to an advancing force.[70]

TWENTY-SIXTH DIVISION

The initial division engaged in First Corps was the Twenty-sixth. From 18 July to 25 July, it advanced about eighteen kilometers. There was no doctrinal basis for how to supply medical care to an advancing unit. The ambulance companies advanced with it, setting up dressing stations in a leap frog fashion where one company runs a dressing station while the other moves ahead. When the advancing company sets up its dressing station it starts receiving all the wounded freeing the company in the rear to start moving forward. This system worked well and was used throughout the A. E. F. [71]

Initially, evacuation worked well, as the roads were good and the distances short. The division received Ambulance Section No. 502 and the 162d Ambulance Company, so it had seventy-one ambulances and forty trucks for evacuation. Later in the attack, the distance increased to over sixty kilometers from the front lines to the evacuation hospital and the wounded started to accumulate at the triage hospital at Bezu-le-Guery and at the hospitals for the slightly wounded at Luzancy.[72]

Poor liaison between the ambulance holding points and the battalion aid stations made it difficult for the ambulance drivers to find the advancing battalions. Normally, the ambulance company litter bearers provided this liaison, but these had all gone to reinforce the regiments. The shortage of

[70]*Field Operations,* 381-83, 403-05. *Report of the Surgeon General, 1919,* 1584-85.
[71]*Field Operations,* 391-93. *Report of the Surgeon General, 1919,* 1584.
[72]*Field Operations,* 391-93. *Report of the Surgeon General, 1919,* 1584.

litter bearers was so acute that each company detailed twelve infantrymen as litter bearers.[73]

FORTY-SECOND DIVISION

The Forty-second Division passed through the Twenty-sixth and continued the attack. It pressed forward, advancing about fifteen kilometers before the Fourth Division relieved it the night of 2-3 August. The Medical Department faced the same problems caring for both these divisions. When the aid stations advanced, they left their patients behind with a small contingent of men until the ambulances completed the evacuation. The long distances and crowded roads meant that evacuation lagged. The battalion aid stations sent the walking wounded back to the dressing stations on their own; only the litter cases went by ambulance.[74]

The Forty-second Division placed the triage station at Epieds, which was on the main road through the division sector. This station soon accumulated over 400 patients, when evacuations to the rear stopped so every available ambulance could clear the battlefield of wounded. Clearing the aid stations allowed them to move forward and keep up with their battalions, so this was the first priority. The ambulances worked twenty-four hours a day, with the drivers working sixteen hour shifts. One company carried 2,527 soldiers while travelling 15,546 miles. This was typical.[75]

The problem of getting the patients from the division hospitals to the rear was even greater. The advance, coupled with the overcrowding of the hospitals available meant that evacuations ranged from 33 to 140 kilometers.

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[73]*Field Operations,* 391-95. Grissinger, "Field Service," *Military Surgeon* 62 (February 1928): 167. Grissinger, "Field Service," *Military Surgeon* 62 (March 1928): 343-45.

[74]*Field Operations,* 395.

[75]*Field Operations,* 396. Herbert George, *The Challenge of War,* (New York, Washington, and Hollywood: Vantage Press, 1966), 90-91.

The Medical Department used trucks, ambulances, barges and trains to make these evacuations. The problems of evacuation demonstrated the importance of corps augmentation of divisional ambulances during combat, as well as the difficulties imposed on the system by the inadequate numbers of evacuation hospitals.[76]

FIELD HOSPITALS

The field hospitals also had increased demands placed on them by the mobile warfare. Field Hospital No. 165 started at Luzancy on 23 July. On 27 July, it moved to Villiers-sur-Marne, the next day to Chateau Thierry. On 29 July, it took over the triage station at Epieds, and the next day, moved to Bezu-St. Germain. Herbert George, who served with this hospital, recalled running low on supplies and using captured German ones. The shelling from the Germans, coupled with the constant flow of patients and movement forward, made this the worst time in the war for him.[77]

The other field hospitals were equally busy. Field Hospital No. 168 had five operating teams busy working on the 350 patients it received in the first four hours. This hospital moved three times during the operation. Field Hospital No. 166 performed as an evacuation hospital, as the closest evacuation hospital was Evacuation Hospital No. 7, fifty kilometers further back at Montanglaust.[78]

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[76]*Field Operations,* 398.

[77]*Field Operations,* 397. Herbert George, *The Challenge of War,* (New York, Washington, and Hollywood: Vantage Press, 1966), 90-93.

[78]*Field Operations,* 397-98.

# Aisne-Marne Operation
# 26th, 42d, & 4th Division Area

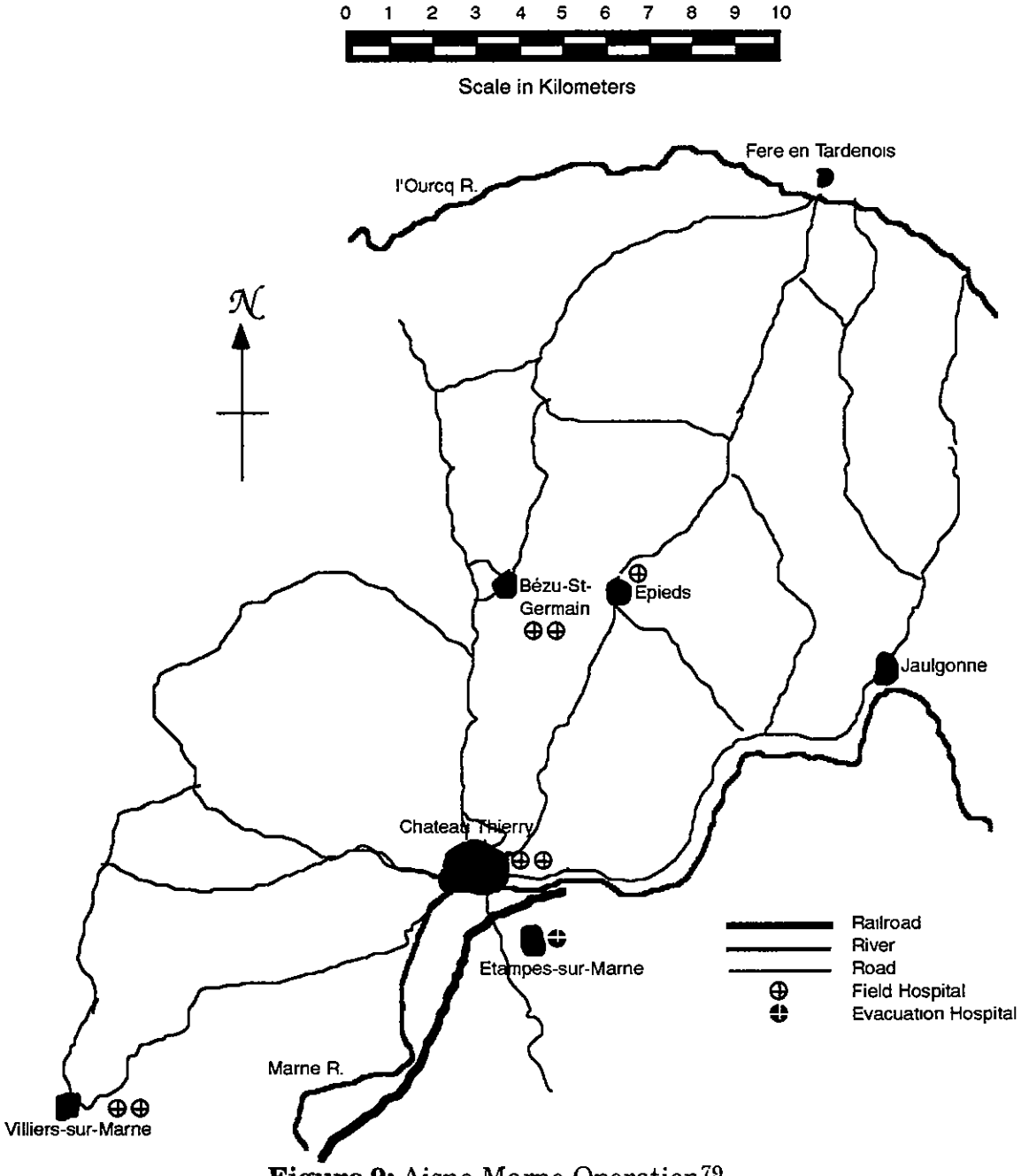


**Figure 9:** Aisne Marne Operation[79]

[79]Adapted from *Field Operations,* Plate X opposite page 396.

FOURTH DIVISION

The Fourth Division carried out the final stage of the attack, 28 July to 12 August. It advanced almost ten kilometers in the fighting. It suffered the same problems in providing medical care as the other divisions in the corps. One problem it experienced that had not troubled the other two divisions occurred because the Fourth Division used the ambulance companies to supplement the regimental litter bearers instead of taking men from the line. This left the ambulance companies understrength, decreasing their efficiency when conditions challenged it most. Further complicating ambulance evacuation of the aid stations was the German shell fire. For the first part of the advance, the litter bearers had to carry the patients about one kilometer back from the aid station as this was as close as the ambulances could go.[80]

EVACUATION HOSPITALS

The evacuation hospitals were equally busy during the offensive. Evacuation Hospital No. 7 supported the First Corps. On 22 July, Colonel Hutton reported that the Paris hospitals were full and he had no trains with which to evacuate them. At Crepy-en-Valois, 1,000 patients awaited evacuation. The medical group in the G-4 section sent Evacuation Hospitals No. 4 and 6, and Mobile Hospital No. 2 into the sector to help. These hospitals provided much needed capability.[81]

Evacuation Hospital No. 7 was exceptionally busy during the offensive. It evacuated 8,689 patients between 16 and 24 July and a total of 15,871 by 30 July. Evacuation Hospital No. 8, at Juilly, evacuated 1,199 and the Red

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[80]*Field Operations,* 400.

[81]*Field Operations,* 416. *Report of the Surgeon General, 1919,* 1692-95. *The History of Evacuation Hospital Number Six United States Army 1917-1919,* (Poughkeepsie, N. Y.: Privately published, 1931) 12-13.

Cross Hospital at Jouy-sur-Morin another 1,000 during the same period. One of the problems that made the work difficult was the lack of rail service closer to the front. The hospitals could not move to these advanced sites until railways restored service.[82]

Evacuation Hospital No. 6 started operations 20 July at Meaux and began receiving patients from the front immediately. It moved to Chierry near Chateau Thierry, 29 July, where it combined with Mobile Hospital No. 1. Here it treated over 3,500 patients, evacuating them to Paris by train and barge. It mainly cared for the seriously wounded, and received augmentation with surgical teams. Evacuation Hospital No. 4 moved to Ecury-sur-Coole where it operated steadily for seventy-two hours with no rest for its surgical teams. It then moved to Chateau Pereuse where it remained until 6 August, caring for 1,427 patients.[83]

By 29 July, Evacuation Hospital No. 3 had started work at La Ferte-Milon. Evacuation Hospital No. 5 arrived at Chateau Thierry on 2 August. These hospitals increased the capability in the region greatly. From this point on, the system handled the casualties without difficulty. Problems continued to arise in moving the hospitals closer to the front, because the destruction from the offensive ruined buildings that the evacuation hospitals could set up in and destroyed the railheads necessary to evacuate from.[84]

## CHANGES IN MEDICAL SUPPORT

These problems led to changes in the way that the Medical Department provided support to the divisions. One of the solutions was the

[82]*Field Operations*, 416-18. *Report of the Surgeon General, 1919*, 1700-01.
[83]*Report of the Surgeon General, 1919*, 1692-95. *History of Evacuation Hospital Number Six*, 13-14.
[84]*Field Operations*, 416-19. *Report of the Surgeon General, 1919*, 1681-83, 1692-97.

establishment of a corps sanitary train. In the earlier engagements, the corps surgeon had no assets to assist the divisions. The corps sanitary train evacuated from the field hospitals and relieved the divisions of all responsibilities behind the division rear. Its sanitary personnel assisted the division, as the number of casualties received in combat, especially during attacks, was more than the division hospitals could handle without augmentation.[85]

The long hauls from the front to the evacuation hospitals complicated evacuation as well. To counter this, the medical planners worked on devising ways to make the evacuation hospitals more mobile and to increase the number of these hospitals. They had trouble advancing because of the lack of facilities for shelter and rail evacuation.[86]

Road congestion was harder to solve. The vast numbers of vehicles going both directions in the advance slowed the ambulances. The lack of alternate routes forward added to the difficulties and the routes available were often narrow country lanes. This problem would worsen as the size of the offensives increased.[87]

## ANALYSIS OF THE OPERATION

The operations demonstrated the importance of prior planning for evacuation. At Soissons, the medical system broke down and the Medical Department had to send in units urgently. During the rest of the Aisne-Marne offensive, the Medical Department provided adequate hospitalization, which, although stressed, handled the patient load. The sheer number of

[85]*Field Operations,* 383. Field Orders, First Army Corps, 18, 35, 46.
[86]*Field Operations,* 388.
[87]*Field Operations,* 388.

casualties, combined with the shortage of evacuation hospitals in theater severely handicapped the medical planners.[88]

The Aisne-Marne Offensive ended the second phase of medical operations. The A. E. F. Medical Department had modified doctrine to provide comprehensive medical care in defensive operations from fixed facilities. The difficulties of the First and Second Divisions at Soissons stressed the importance of prior planning and coordination for medical operations. The Americans developed medical staff positions for organizations above the division to better plan medical support. At the same time they provided these corps and army surgeons with sanitary trains to assist the divisions and better anticipate support requirements. The biggest problem affecting medical support was the shortage of medical units, especially evacuation hospitals. This would hamper medical operations until the Armistice.

The offensive operations at the end of the period provided new challenges that the Medical Department would attempt to handle throughout the rest of the war. Problems arose in moving hospitals forward where most needed, and carrying out evacuation over the long, crowded supply routes. These problems recurred in the major American offensives at Saint Mihiel and the Meuse-Argonne.

PHASE THREE – AUGUST 1918 TO THE ARMISTICE

After the Aisne-Marne operation, the Americans received their own sector, which was the responsibility of the First Army. The two main American operations in this period were part of the general Allied offensive.

[88]*Field Operations,* 383.

The first was was the offensive to reduce the Saint Mihiel salient. The last was the largest battle of the war for the Americans, the Meuse-Argonne. Medical operations during this time showed the increasing sophistication and complexity of the American Army. The careful planning before the reduction of the Saint Mihiel salient made it one of the most successful operations of the war. In contrast, the huge battle in the Meuse-Argonne stressed the medical system at every level.

SAINT MIHIEL

The first operation planned for the First Army was at Saint Mihiel. The First Army, consisting of the First, Fourth, and Fifth Corps and the French Second Colonial Corps was to clear the Germans from the salient. This allowed opening the Paris–Nancy railway and protected the region from Nancy to Bar-le-Duc and Verdun. It also threatened Metz and the Briey iron region. The reduction of the salient was a necessary step before commencing an offensive between the Meuse and the Argonne.[89]

The attack consisted of two subsidiary attacks, one from the south and one from the west. The First Army planned to follow these attacks with a holding attack at the point of the salient, followed by an exploitation. The American Fourth Corps on the left, and the First Corps on the right, made the southern attack. The American Fifth Corps made the one in the west, while the French Corps attacked in the center.[90]

The First Army Surgeon, Colonel Alexander N. Stark controlled the medical assets of the army. He had responsibility for medical care given in

[89]*Field Operations,* 449-50.

[90]Hunter Liggett, *A. E. F., Ten Years Ago in France,* (New York: Dodd, Mead and Company, 1928), 146-149. Coffman, *The War to End All Wars*, 282-283.

all regiments, divisions, evacuation and mobile hospitals in the sector. The only medical assets in his sector not under his control were base hospitals, laboratories, and medical supply depots belonging to the S. O. S.[91]

This operation was the first by an American field army since 1865. It was an army vastly larger than any previous army that the United States had ever fielded before then. The First Corps, alone, was larger than the combined forces of Lee and Meade in the Wilderness. It succeeded dramatically. The First Army reduced the salient in two days. The overwhelming success of the operation proved that the Americans could plan and execute a complex operation.[92]

MEDICAL PLAN FOR THE OPERATION

The Medical Department prepared well for the offensive. Shipments of supplies, personnel, and hospitals from the United States had increased, giving a reserve not available previously. These still did not reach the levels desired or even promised in the priority schedule, but they did ease the critical shortages in evacuation hospitals and medical supplies. The Department worked through its representatives in the G-4 section to coordinate with Colonel Stark, the First Army surgeon. The first step in the planning process was to formulate a casualty estimate. These ranged from 30,000 to 75,000. Colonel Stark's estimate was 33,000. Accordingly, the medical planners at G-4 arranged for hospitalization for this number of casualties. Interestingly, the French predicted 125,000 casualties for the campaign.[93]

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[91]*Field Operations*, 452-59.

[92]Liggett, *A. E. F.*, 146-49. Coffman, *The War to End All Wars*, 282-83.

[93]Alexander N. Stark, "Explanation and Execution of Plans for Hospitalization for St. Mihiel Operation and ARGONNE-MEUSE Offensive," *Lectures, 1st Army Staff*, TMs, United

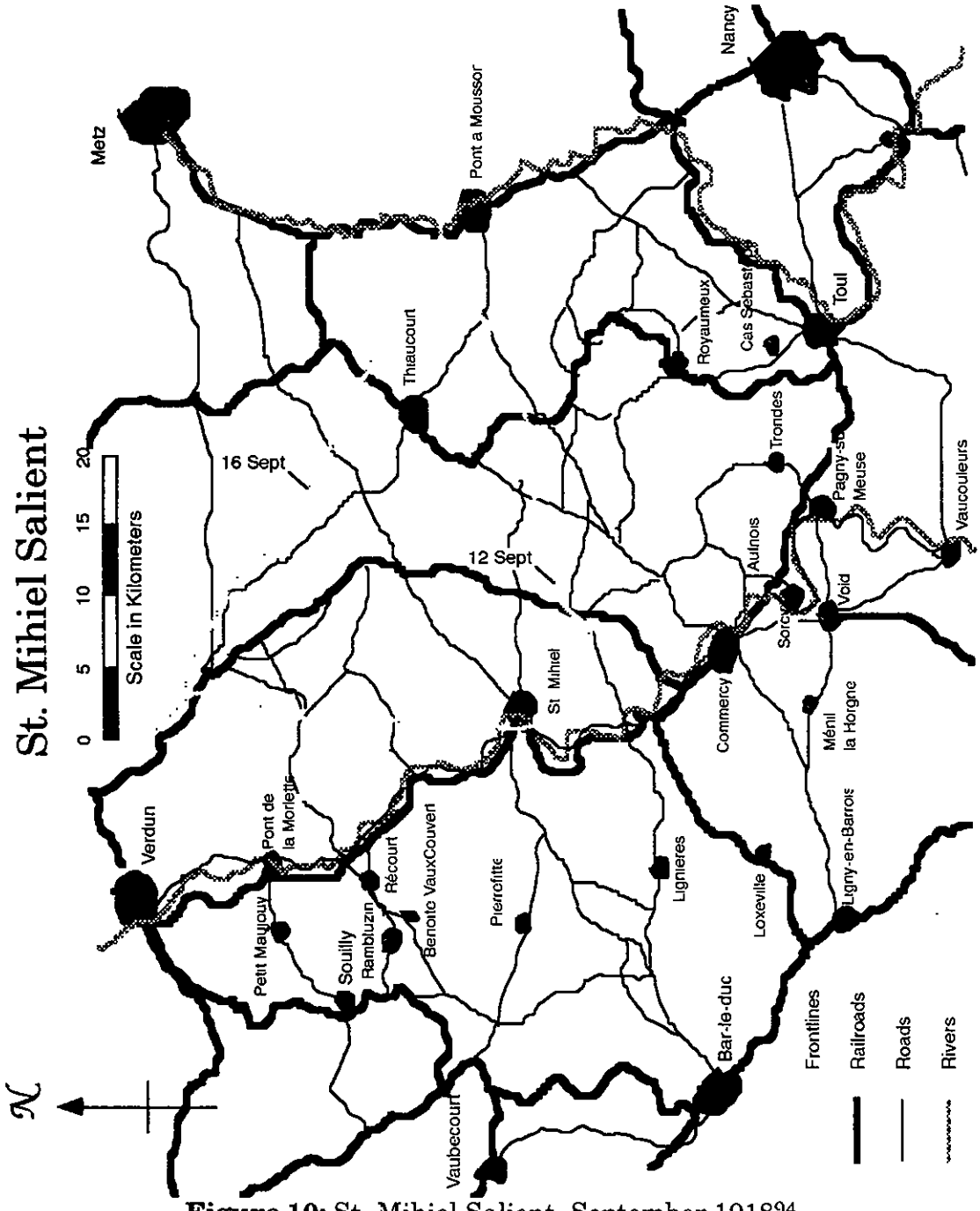


**Figure 10:** St. Mihiel Salient, September 1918[94]

States Army Command and General Staff College Library, Fort Leavenworth, KS. *Field Operations,* 452-54. *Report of the Surgeon General, 1919,* 1514.

[94]Adapted from *Field Operations,* Plate XV opposite page 450.

To provide care, Stark devised a "triple system" of hospitalization. He divided the zone into three and placed an officer in charge of each zone. He had one officer at Toul, responsible for the southern front, one at Souilly, for the western front, and one from the French Second Corps, for the French troops. Each of the areas had hospitals in its rear. The Toul area had 15,000 beds; Verdun had 4,500; and behind the French were 6,000. The French did not provide any hospitalization for their forces; the Americans supplied these beds.[95]

Stark located his hospitals throughout the sector. In the Toul sector, for example, were six evacuation hospitals (plus two base hospitals that acted as evacuation hospitals), three mobile hospitals, twelve ambulance companies and sections, one Red Cross hospital, two neurologic units, and five field hospitals. Similarly, in the western sector, he placed four evacuation hospitals, two mobile hospitals, one neurological unit, and one gas hospital. There were seven ambulance companies and sections. To supply these units, he set up medical supply depots at Toul in the south and Souilly in the west.[96]

In his order of 6 September (Annex No. 6, Field Order No. 9), Stark detailed the plan for evacuation of the sick and wounded. He anticipated that the First Division would suffer greatly in trying to take Mount Sec, so he assigned Mobile Hospital No. 39, expanded to 700 beds, to take patients from the First Division. This hospital was about twelve kilometers behind the lines at Aulnois-sous-Vertuzey. At Sorcy, he established Evacuation Hospital No. 11 and Field Hospital No. 41, expanded to 500 beds, for the slightly

[95]Stark, "Hospitalization for St. Mihiel Operation and ARGONNE-MEUSE Offensive." *Field Operations,* 454. *Report of the Surgeon General, 1919,* 1514.

[96]Stark, "Hospitalization for St. Mihiel Operation and ARGONNE-MEUSE Offensive." *Field Operations,* 455-56. *Report of the Surgeon General, 1919,* 1514.

wounded of the division. Evacuation Hospital No. 1 and Mobile Hospital No. 3 would receive all the wounded from the rest of the troops west of the Moselle. These hospitals had expanded to 3,000 beds. The overflow from these hospitals would go three miles further back to the Justice Hospital Center, where Evacuation Hospital No. 14 and Evacuation Hospital No. 3 were. Also in this hospital center were Base Hospitals No. 45 and 51, which were to care for the sick, nervous, and shell concussions. For the troops east of the Moselle River, Evacuation Hospital would take the severely wounded, while Field Hospital No. 163, acting as an evacuation hospital would take the slightly wounded.[97]

The French would be evacuated to hospitals at Void, Commercy, Vaucouleurs, Loxeville, and Menil-la-Horgne. They had one half of the hospital at Bar-le-Duc for overflow. For the western sector, Evacuation Hospitals No. 6 and 7, with 1,200 and 1,000 beds respectively, set up at Souilly. They had responsibility for the slightly wounded. To assist, Evacuation Hospital No. 9, at Vaubecourt, had 1,500 beds. The seriously wounded went to Evacuation Hospital No. 8 at Petit Maujouy and Mobile Hospitals No. 1 and 2 at La Morlette and Recourt.[98]

To care for this many casualties would require evacuating approximately 10,000 a day to the intermediate and base sections. The Americans had seventeen hospital trains and three trains borrowed from the British. To augment these, the French lent them forty-five of their trains. The French trains were smaller, so they performed the evacuations to the

[97]Stark, "Hospitalization for St. Mihiel Operation and ARGONNE-MEUSE Offensive." Annex No. 6 (Field Order No. 9), Headquarters First Army, A. E. F. reprinted in *Field Operations,* 456-58.

[98]Stark, "Hospitalization for St. Mihiel Operation and ARGONNE-MEUSE Offensive." Annex No. 6 (Field Order No. 9), Headquarters First Army, A. E. F. reprinted in *Field Operations,* 456-58.

base hospitals in the advanced section, while the longer and roomier American trains took patients on the longer trips, of eight to twenty-four hours, to the intermediate and base sections.[99]

A SUCCESSFUL OPERATION

The fighting opened on 12 September and succeeded beyond all expectations. The hospitalization proved much more than required, which helped medical care and evacuation proceed more smoothly than in any previous operation. The total number of casualties was 5,231, including 401 German prisoners. This was much less than the estimates for the Germans were preparing to pull back when the attack came. The Americans also had the benefit of surprise, which lessened their casualties. With these few casualties, the evacuation system worked as planned. In the Ninetieth Division, patients were at triage an hour and a half after arriving at the battalion aid stations. In at least one instance, wounded reached Evacuation Hospital No. 1 within three hours of injury.[100]

Richard Derby's experiences as the assistant division surgeon in the Second Division provide an insight into divisional medical support. He collected ambulances, loaded them with food and supplies and led them to the front. The three ambulances crawled along the only undamaged road left behind the advancing troops. Work crews made up of German prisoners took stones from the ruined towns to fill the craters in the road and keep it open. It took five hours to travel a few kilometers. Because the roads were so bad, he and the division surgeon, Colonel Morrow, brought the whole sanitary

[99]Stark, "Hospitalization for St. Mihiel Operation and ARGONNE-MEUSE Offensive." *Field Operations,* 455-56. *Report of the Surgeon General, 1919,* 1514.

[100]Stark, "Hospitalization for St. Mihiel Operation and ARGONNE-MEUSE Offensive." *Field Operations,* 459, 468. *Report of the Surgeon General, 1919,* 1514-16. Coffman, *The War to End All Wars,* 278-79, 283.

train to Thiaucourt, which was only six kilometers from the front. By having the medical facilities so close spared the wounded an evacuation of many hours. The field hospital for the severely wounded operated on seventeen patients with six deaths. More would have died, if they had needed to go all the way back to Toul for care.[101]

The hospitals varied in the number of patients they received. Harvey Cushing, at Field Hospital No. 101, found instead of the hospital overcrowded and full of wounded, "A mere handful were dribbling through." While at Evacuation Hospital No. 8 things "were busy for a few days," at Evacuation Hospital No. 14, the teams worked through the night, taking off only fifteen minutes at midnight for food. Evacuation Hospital No. 3 had its twelve operating tables full for about a day, but found that the number of wounded rapidly dropped off. Base Hospital No. 45 received many patients from the evacuation hospitals as well as the ones it received directly from the front. These casualties kept the operating rooms busy for days. When Evacuation Hospital No. 3 transferred all its patients to Base Hospital No. 45 on 18 September, "the limit had been reached, there was not an unoccupied bed or cot in the hospital." Clearly, each hospital experienced the battle differently.[102]

SHELL SHOCK CASES

Stark experimented during the offensive. Too many mild cases of shell-shock, exhaustion, and other minor problems ended up at the

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[101]Derby, *"Wade in Sanitary!,"* 114-21.

[102]Cushing, *Surgeon's Journal,* 439. J. R. Darnall, "War Service with an Evacuation Hospital," *Military Surgeon* 80 (April 1937): 265. Shipley and Considine, *Evacuation Eight,* 22. *Report of the Surgeon General, 1919,* 1683-84. [Geisinger, Joseph F.], ed., *History of U.S. Army Base Hospital No. 45 in the Great War (Medical College of Virginia Unit),* (Richmond, VA: William Byrd Press, 1924) 62.

evacuation hospitals. This overloaded those already busy hospitals and the evacuation system. To screen the neurologic and shell-shock cases close to the front, he placed the division psychiatrist at each divisional triage. Before, the "neurologic" casualties would get sent back to the evacuation and neurologic hospitals. At St. Mihiel, most of them remained in the division. There were 282 cases of shell-shock in the operation; 225 of these returned to their units within three days. This contrasted markedly with the British practice of evacuation and hospitalization of these soldiers. Many of whom remained hospitalized months later. The practice of treating these casualties close to the front and returning them within three days to their units became standard practice.[103]

PROBLEMS IN THE OPERATION

Problems were slight. The roads became congested during the advance, but not as badly as during the Aisne-Marne operation. There were shortages of litter bearers in the regiments, as some of the divisions did not augment the ambulance companies with litter bearers. The shortages in evacuation hospitals required the use of field hospitals and base hospitals in this role. Although not optimal, it worked in providing care for the wounded. The Medical Department remedied other shortages by using non-medical personnel in non-professional jobs, borrowing ambulances from the French and American base hospitals, and raiding other hospitals and divisions in the A. E. F. for medical officers, nurses, and enlisted men to provide care at the

[103]*Report of the Surgeon General, 1919*, 1515. Stark, "Hospitalization for St. Mihiel Operation and ARGONNE-MEUSE Offensive."

front. This augmentation greatly increased the capacity of these units, Evacuation Hospital No. 6, for example, received nine surgical teams.[104]

THE MEUSE–ARGONNE

The A. E. F. moved rapidly from the success at St. Mihiel to planning the largest battle for the American Army in the war, the Meuse-Argonne offensive. The operation took place in three phases. The first lasted from 26 September to 3 October, the second from 4 to 31 October, and the third from 1 to 11 November. The overall plan was an ambitious one. The First Army attacked over a front stretching from the Argonne Forest to the Meuse River. Hugh A. Drum, the chief of staff of First Army, described the sector as "the most ideal defensive terrain I have ever seen."[105]

MEDICAL PLANNING

The plan called for an attack by three corps abreast, from left to right, the First, Fifth and Third Corps. Each corps attacked with three divisions on line with one in reserve. There were three divisions in the First Army reserve. Medically to support this massive army , taxed the planners, for the operation followed so soon after St. Mihiel. The medical section of G-4 and the Army and corps surgeons coordinated the locations and movements of the hospitals between themselves and with the French. They met on 24 September to finish the coordination of hospitalization for the campaign.[106]

Colonel Alexander N. Stark, First Army Surgeon, ordered the divisions to establish their field hospitals for triage and non-transportable wounded

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[104]*Field Operations,* 499-523. *Report of the Surgeon General, 1919,* 1514-16. *History of Evacuation Hospital Number Six,* 15.

[105]Coffman, The War to End All Wars, 299-305.

[106]*Field Operations,* 530-543, 553-54.

close to the front. The front from west to east had the divisions with their triages as follows:

Third Corps:
- 33d Division---------- Glorieux, near Verdun
- 80th Division ---------- Fromereville
- 4th Division ---------- Sivry-la-Perche

Fifth Corps:
- 79th Division ---------- Les Clairs Chenes
- 37th Division ---------- Brabant
- 91st Division---------- Brabant

First Corps:
- 35th Division ---------- Neuvilly
- 28th Division ---------- La Croix de Pierre
- 77th Division ---------- Florent.[107]

The terrain worked against medical support. Two roads were available for use as supply and evacuation routes. These were the road to Grand Pre and the road through Avincourt to Malincourt, which went through the sectors of First and Third Corps.. Fifth Corps, especially, had a difficult sector, with woods, ravines, and no roads suitable for evacuation. This forced the divisions in Fifth Corps to locate their triages half the distance from the front as the other two corps.[108]

Colonel Stark and the other medical planners modified the deployment of the hospitals to make up for this lack of evacuation routes. Along the evacuation routes, the division sanitary trains, with the help of the Red Cross, set up evacuation points and rest stations. These were places where the ambulances and litter bearers brought the wounded while waiting transportation further to the rear. The corps surgeons placed their hospitals

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[107]*Field Operations,* 530.

[108]*Report of the Surgeon General, 1919,* 1515. Stark, "Hospitalization for St. Mihiel Operation and ARGONNE-MEUSE Offensive." *Field Operations,* 530-2.

midway between the division and army hospitals. These hospitals were for the slightly wounded patients that could return to duty within three days.[109]

Behind the corps hospitals were the evacuation hospitals. They stationed themselves from five to twelve kilometers from the triages. The evacuation hospitals were all within twenty kilometers of the front, except for Evacuation Hospital No. 9 at Vaubecourt and Evacuation Hospital No. 15 and Base Hospital No. 83 at Revigny.[110]

The medical section at G-4 had to bring all the necessary medical assets into position for the operation. The shortage of hospitals, especially of evacuation hospitals, meant that the same ones at St. Mihiel salient now had to move to support the Meuse-Argonne. These hospitals evacuated their accumulated patients and moved into the crowded area behind the lines. As seen earlier, this left a heavy patient load on the base hospitals.[111]

This movement could not jeopardize the element of surprise. All units moved into position at night and remained concealed during the day. One measure adopted specifically for the Medical Department prevented any nurses from arriving in the area until the last moment. The First Army commander and staff thought that nurses would go sight-seeing and souvenir collecting and that the Germans might notice them and deduce that increased hospitalization had arrived for an attack.[112]

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[109]*Field Operations*, 530-31.

[110]*Field Operations*, 530-31.

[111]*Field Operations*, 534. Stark, "Hospitalization for St. Mihiel Operation and ARGONNE-MEUSE Offensive." J. R. Darnall, "War Service with an Evacuation Hospital," *Military Surgeon* 80 (April 1937): 265. Shipley and Considine, *Evacuation Eight*, 22. *Report of the Surgeon General, 1919*, 1683-84. *History of Base Hospital No. 45*, 62.

[112]*Field Operations*, 534. Stark, "Hospitalization for St. Mihiel Operation and ARGONNE-MEUSE Offensive."

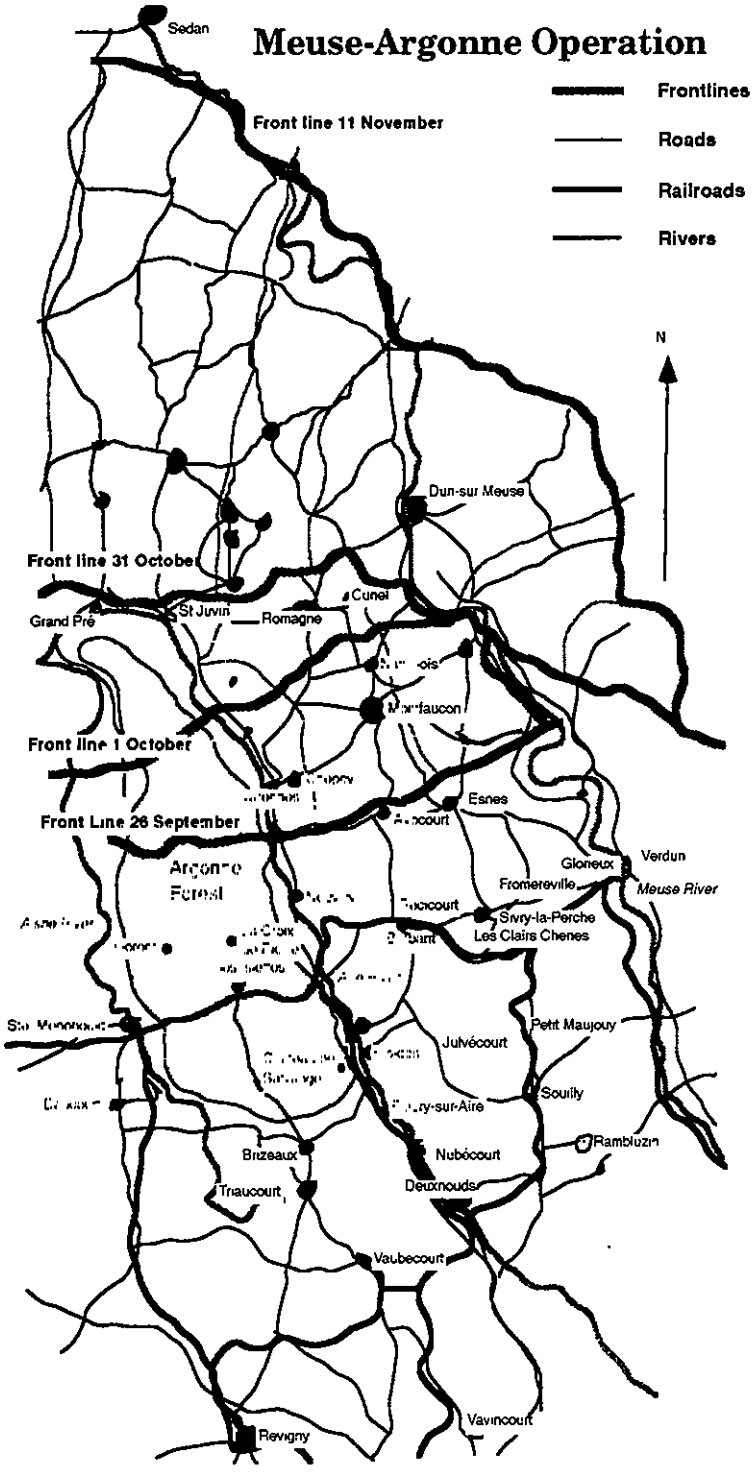


**Figure 11:** Meuse-Argonne Offensive, September to November 1918[113]

[113]Adapted from *Field Operations*, Plate XXV opposite page 526, Plate XXXV opposite page 630, Plate XLIV opposite page 730.

The Medical Department assigned hospitals with 16,130 beds to the region. This represented a hospitalization of 1.8 per cent of the soldiers involved. At Soissons, the First and Second Divisions had loss rates of about 7 per cent; two-thirds of these casualties required hospitalization behind the division. Hospitalization available for the Meuse-Argonne was much less than half that required. The Medical Department used all its available resources for the offensive, demonstrating the critical shortages in equipment, personnel, hospitalization, and ambulances.[114]

Colonel Stark, organized the hospitals to minimize the effects of a bed shortage. He had available on 26 September eleven evacuation hospitals, two Army Red Cross hospitals, five Mobile Hospitals, one base hospital, one field hospital, two neurologic hospitals, four gas hospitals, three infectious hospitals. To augment these hospitals, the Services of Supply had hospital centers at Toul and Bazoilles, and Base Hospital No. 81 at Revigny. He divided these among the three corps, assigning the evacuation hospitals for the seriously wounded and the mobile hospitals for the non-transportables. The other hospitals received the sick, slightly wounded, and gassed. First Corps received support from Evacuation Hospital No. 11 at Brizeaux Forestieres, Mobile Hospital No. 2 at Chateau de Salvange, Army Red Cross Hospital No. 110 at Villers-Daucourt, and Base Hospital No. 81. Fifth Corps had Evacuation Hospital No. 9 at Vaubecourt, No. 10 at Froidos, No. 3 at Fleury-sur-Aire, and Army Red Cross Hospital No. 114 at Fleury. First Corps had hospitals that had served at St. Mihiel. Evacuation Hospitals No.

[114]Report of Evacuation Branch G–4 Argonne-Meuse Operation. TMs. File 191-41.6 Army War College Historical Section, Carlisle, PA. M. A. W. Shockley. *An Outline of the Medical Services of the Theatre of Operations,* (Philadelphia: P. Blakiston's Son and Company, 1922), 28-29, *Field Operations,* 537-538. P.M. Ashburn, *A History of the Medical Department of the United States Army,* (Boston and New York: Houghton Mifflin Company, 1929), 342-43.

3 and No. 5 remained in reserve, ready to move forward when the offensive progressed.[115]

FIRST PHASE

The first phase of the battle started with an attack across the entire First Army front. By the end of the first day, the Third Corps and the two left divisions of First Corps reached their objectives. The attack bogged down in the center in the Fifth Corps area. Three more days of attacks captured Montfaucon, however, the first Army needed to pause to reorganize.[116]

THIRTY-SEVENTH DIVISION

The experiences of the Thirty-seventh Division in the first phase provide an example of the problems in medical care during the operation. This division was the center division in the Fifth Corps for the first phase. It advanced steadily in the first four days, fighting off German counterattacks until the Thirty-second Division relieved it on the night of 1 October.[117]

The division located its triage at Brabant with two field hospitals and a medical supply depot. It held the other two field hospitals here in reserve. Because of the lack of available roads in the Fifth Corps Sector, it shared the town with two field hospitals of the Ninety-first Division. The two reserve ambulance companies established a dressing station in Avocourt 26 September. Beyond Avocourt, the road was impassable to motor vehicles. This complicated evacuation of the battalion and regimental aid stations as all patients had to walk or be carried to the dressing station. For the first

[115]*Field Operations,* 537-38. Stark, "Hospitalization for St. Mihiel Operation and ARGONNE-MEUSE Offensive." *Report of the Surgeon General, 1919,* 1517-21.

[116]Coffman, The War to End All Wars, 299-305. *Field Operations,* 525-30.

[117]*Field Operations,* 592-94. Ralph D. Cole and W. C. Howells, *The Thirty-seventh Division in the World War, 1917-1918,* (Columbus, OH: The Thirty-seventh Division Veterans Association, 1929), 185-88.

twenty-four hours of the attack, ammunition and artillery had the right of way, so over 300 patients accumulated at Avocourt awaiting transport further back. On the field conditions were even worse, for the litter bearers missed many of the wounded who accumulated in dugouts and the aid stations. Because the battalion aid stations had so many wounded that remained with them, they could not move fast enough to keep up.[118]

By 28 September, the situation had worsened. Wounded lay scattered over the field; so many gathered at the divisional headquarters that the sanitary train had to set up a forward dressing station there. Every wagon in the division hauled patients to the rear. Ambulances attempted to get through the blocked roads, two got through from Avocourt, six from the Thirty-second Division arrived from Varennes. These ambulances helped only a little, because they took seventy-two hours to go the twenty kilometers to Brabant.[119]

Because the ambulances could not get back to the field hospitals, the two reserve field hospitals were ordered forward. Field Hospital No. 146 made it through and set up at Ravin de Chambronne. Although dangerously close to the front lines, this was the only suitable site available. It started trying to clear the battlefield of wounded. Transportation proved so bad, that on 30 September the division commander ordered every wagon assembled for evacuation of the wounded. The sanitary train remained on the field a full day after the division was relieved trying to finish treating the wounded.[120]

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[118]Report of Fifth Corps Both St. Mihiel and Argonne-Meuse Operations, Report of G-3 Chief Surgeon, TMs, File 6014.01 Army War College Historical Section, Carlisle, PA. *Field Operations*, 595-96. Cole and Howells, *The Thirty-seventh Division*, 187-88, 203-04.

[119]*Field Operations*, 596-97. Cole and Howells, *The Thirty-seventh Division*, 203-04.

[120]*Field Operations*, 597-98.

# 37th Division - 26 to 30 September

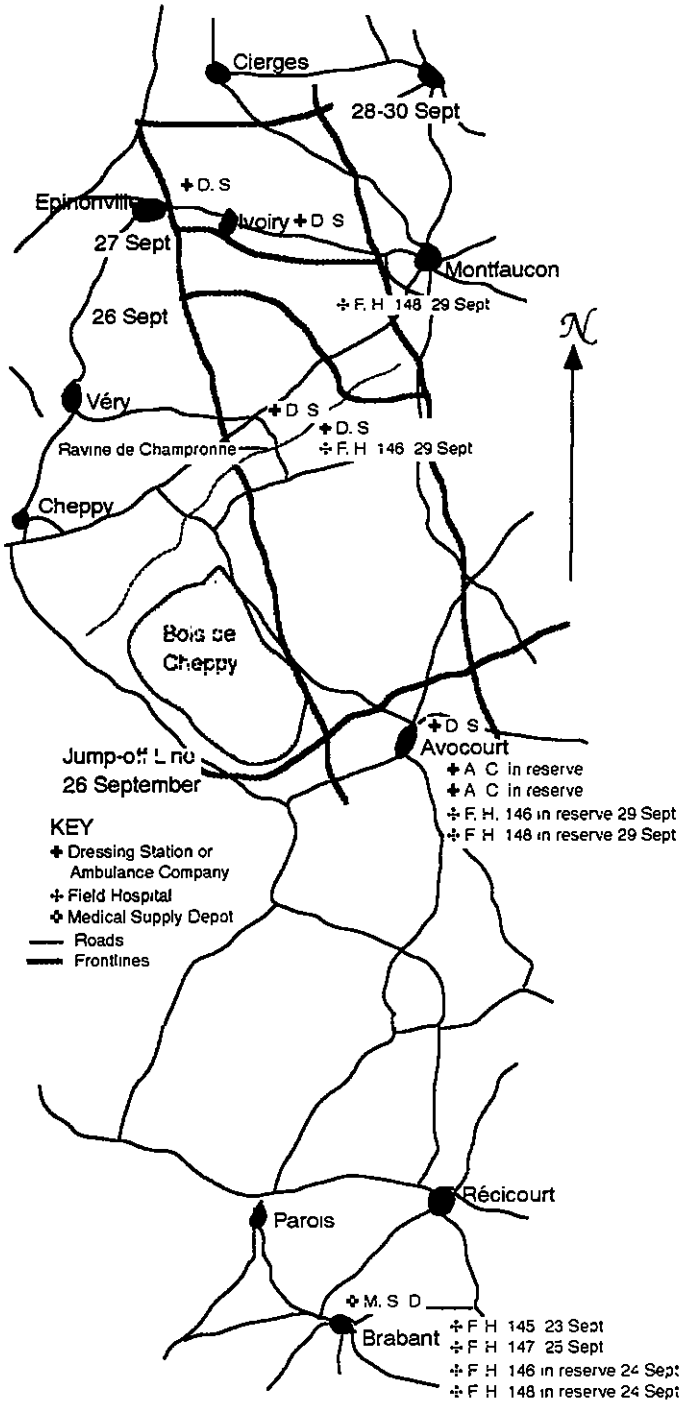


**Figure 12:** Thirty-seventh Division in the Meuse-Argonne[121]

[121]Adapted from *Field Operations*, Plate XXX opposite page 592.

SECOND PHASE

The second phase of the operation started after the reorganization period of the first phase. During this phase the First Army attacked to seize the Cunel and Romagne Heights. The First Corps then cleared out the Argonne Forest. It included attacks on the east bank of the Meuse. This phase of the operation included steady fighting as the American divisions battled it out with the retreating Germans. The Germans used the terrain effectively, making the Americans pay for each advance.

For the Medical Department the situation grew more difficult. The distances for evacuation increased with the advancing front line. The fighting destroyed the roads, so motor ambulances could not travel them. Horse-drawn wagons were the primary means of evacuation from the front. In Fifth Corps, there still were no suitable evacuation routes, which stressed the already crowded roads through the First and Third Corps.[122]

INFLUENZA

On top of the battlefield casualties pouring through the hospital system, came the influenza epidemic. In First Army alone, 68,760 soldiers required hospitalization for treatment. Evacuation Hospital No. 6 admitted 1,100 cases in a single day. The hospital had 1,600 patients in the hospital the next day, despite its nominal bed capacity of 900. The "flu" took a double toll, because it sickened the hospital staffs at the same time that it increased the patients requiring treatment. General Erich von Ludendorff noted on 17 October, "The enemy did not come on with his usual ardor....At these points

[122]Report of Fifth Corps Both St. Mihiel and Argonne-Meuse Operations, Report of G-3 Chief Surgeon, TMs, File 6014.01 Army War College Historical Section, Carlisle, PA. *Field Operations,* 634-36.

the fighting power of the Entente has not been up to its previous level. Further the Americans are suffering severely from influenza."[123]

EVACUATION HOSPITAL NO. 8

Frederick Pottle's book, *Stretchers,* helps give a better understanding of the conditions during this phase of the battle.

> The great battle of the Argonne was on, ...a steady desperately contested, inexorable advance.... The stream of wounded flowed without break through the efficient mill of Evacuation Eight.
>
> Trucks, coming down the road from Ancemont in an endless line, pull up on the hard curved roadway....
>
> The last week has been the busiest I have seen in the operating room. Our plant has worked wonderfully....We made a record for the A. E. F.—something over 200 cases operated in one shift of twelve hours....Now we are getting some horrible cases—men who have been wounded four or five days.[124]

Evacuation Hospital No. 8 kept its six operating teams busy the entire fifty days of the battle. It stayed at Petit Maujouy throughout, so it did not have to try to move forward as well. Evacuation Hospitals No. 14 and 15 both moved during this phase of the operation. to help care for the wounded arriving from the east side of the Meuse.[125]

THIRD PHASE

On 1 November, the third phase started with a two hour artillery barrage. Third Corps and Fifth Corps drove through the German lines with the right half of First Corps. The Americans pursued the retreating

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[123]*Report of the Surgeon General, 1919,* 1312, 1476, 1517-23, 1691-1705. *Field Operations,* 810-837. *History of Evacuation Hospital Number Six,* 18. Stark, "Hospitalization for St. Mihiel Operation and ARGONNE-MEUSE Offensive." Lyle, "Evacuation in the Meuse-Argonne," 589-90.

[124]Pottle, *Stretchers,* 221-222, 233,

[125]*Field Operations,* 632-33.

Germans, driving to the outskirts of Sedan and across the Meuse. The fighting continued until 11 November when the Germans signed the Armistice.[126]

This ended the operation and the war. During the operation, the Medical Department treated 72,467 wounded, 18,664 gassed, and 2,029 neurological cases. In addition, the hospitals admitted 68,760 medical patients. The large numbers of patients and rapidly advancing front tested the medical system most severely and by the end it was near collapse. The situation became so bad, that by the Armistice, Colonel Stark said, "On the last day of the offensive if I had been called upon to advance another evacuation hospital it would have been absolutely impossible, for the simple reason that transportation did not obtain for that purpose." Problems arose in evacuation and hospitalization. Examining these for the battle helps understand the medical support.[127]

EVACUATION

Overall, the evacuation service managed to get the wounded and sick out. In his report after the battle, Major General A. W. Brewster, the A. E. F. Inspector General, found that evacuation was satisfactory overall. He noted that delays occurring initially improved as the engineers rebuilt roads and the hospital and ambulance personnel became more efficient. During the offensive, the ambulances travelled 907,910 kilometers or over 20,000 kilometers per day. The ambulance service brought 132,065 sick and

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[126]*Field Operations,* 729-731.

[127]Letter, Alexander N. Stark, Chief Surgeon First Army, to Assistant Chief of Staff, G-4, First Army, 4 November 1918, Subject: Moving of Evacuation Hospitals. TMs, Army War College Historical Section, Carlisle, PA. Stark, "Hospitalization for St. Mihiel Operation and ARGONNE-MEUSE Offensive." *Report of the Surgeon General, 1919,* 1476, 1691. *Field Operations,* 809.

wounded patients to the railhead hospitals. From these, it evacuated 151,045 patients back to the base hospitals on 408 trains. For part of the offensive, evacuations progressed at the rate of a division/week. To compare this evacuation with others in the war, in the week from 17 to 23 October, the hospital trains evacuated 29,426 patients. This equalled the number evacuated by the French during the most intense month of fighting at Verdun in 1916. The evacuation service had problems handling this huge number of patients.[128]

Three problems confronted the evacuation service. First, the lack of adequate roads, and the severe congestion on those available made evacuation slow and travel difficult. Second, were the long distances, the ambulances travelled to bring the wounded back from the front. Third, was the shortage of ambulances and hospital trains. Three things contributed to the road congestion. First there was a lack of traffic control, so that the roads became solid lines of stopped vehicles. Second, the shortage of adequate roads meant that all traffic took the same road into and out of the corps areas. Finally, the damage from the battle itself closed roads while the engineers repaired them.[129]

The worst problem with the evacuation was the shortage of ambulances and hospital trains. The First Army used every available truck in bringing supplies up to the front line. As these returned, they often carried the slightly wounded and the gassed patients. When the Ambulance

[128]Report of Evacuation Branch G–4 Argonne-Meuse Operation. TMs. File 191-41.6 Army War College Historical Section, Carlisle, PA. Lyle, "Evacuation in the Meuse-Argonne," 585-91. *Field Operations,* 531-41, 634-35, 810. "Notes Made by the Inspector General, A. E. F., During Active Operations from September 12 to November 11, 1918," reprinted in *Field Operations,* 838-42. *Report of the Surgeon General, 1919,* 1517-23.

[129]Lyle, "Evacuation in the Meuse-Argonne," 585-91. *Field Operations,* 531-41, 554-55. Cushing, *Surgeon's Journal,* 463. *Report of the Surgeon General, 1919,* 1693.

Director, Colonel Henry H. M. Lyle, assumed command on 20 September, he had only ninety-three ambulances available. He prevailed on Colonel Stark and the Chief Surgeon, Brigadier General Ireland, to get him any support they could. By 26 September, he had four hundred ambulances and sixty trucks. He had even borrowed thirty sightseeing buses from the French to carry wounded. Although these vehicles had a capacity of 1,813 stretcher and 400 sitting patients, there was still a shortage of over three hundred vehicles.[130]

This shortage forced an important change on the management of the ambulances. Where before, each unit controlled its own small number of cars, now they were centralized. This prevented ambulances from sitting idle while wounded men lay awaiting evacuation. The idea to centralize the ambulance service originated with several officers about the same time. Colonel Grissinger, the First Corps Surgeon, had instituted this policy in his corps for the Meuse-Argonne offensive. Colonel Lyle had worked in the medical section of the G-4 to make this change.[131]

From the central army pool, the director divided the ambulances between the three corps. Each corps was responsible for evacuations within its area. The corps would temporarily assign ambulances to the divisions as they went into the lines. The corps sanitary trains held other ambulances for evacuations. For example, the Thirty-fifth Division had only eight Ford and four General Motors ambulances at the start of the offensive. They had to

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[130]Lyle, "Evacuation in the Meuse-Argonne," 585-91. *Field Operations,* 732-33. *Report of the Surgeon General, 1919,* 1517-21.

[131]Grissinger, "Field Service," *Military Surgeon* 62 (February 1928): 163-77. Lyle, "Evacuation in the Meuse-Argonne," 585-91.

augment these with twenty-two trucks from the division and Ambulance Service Sections No. 520 and 649.[132]

In parts of the sector was a 60-cm railway. The evacuation service used this line to evacuate patients from the field to the evacuation hospitals. It could not take the usual hospital trains, so the patients travelled in boxcars and flatcars modified to hold stretchers. The poor railbeds limited the use of these railways. The trains often derailed. There were a total of ten trips, with 655 patients carried.[133]

The only way to prevent the hospitals from overflowing with patients was rapidly to move the patients back to base hospitals. These evacuations depended on hospital trains. Unfortunately, the Americans had only seventeen of their own trains and three borrowed from the British. They borrowed forty-six more from the French to try to keep up with the patients flowing in.[134]

The Medical Department needed to innovate to provide care through this battle. One of the innovations was the establishment of evacuation centers. The poor transportation network in the region meant that many evacuation and special hospitals were located far from a railhead. The evacuation centers coordinated the evacuations from the hospitals in the sector. First Army established two of these centers, one on each major

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[132]Lyle, "Evacuation in the Meuse-Argonne," 585-91. *Field Operations,* 554-55, 569-72.

[133]Memorandum from C-in-C, to C. G., First Army, 12 October 1918, in Report of Evacuation Branch G–4 Argonne-Meuse Operation, TMs. File 191-41.6 Army War College Historical Section, Carlisle, PA. Memorandum from Chief Engineer, First Army, to A. C. S. G-4, First Army, 18 October 1918, in Report of Evacuation Branch G–4 Argonne-Meuse Operation, TMs. File 191-41.6 Army War College Historical Section, Carlisle. PA. *Field Operations,* 535-36.

[134]Memorandum from Evacuation Officer, First Army, to Medical Section, G-4, G. H. Q., through Chief Surgeon, First Army, 23 September 1918, in Report of Evacuation Branch G–4 Argonne-Meuse Operation, TMs. File 191-41.6 Army War College Historical Section, Carlisle, PA. Lyle, "Evacuation in the Meuse-Argonne," 585-91. *Field Operations,* 531-41. *Report of the Surgeon General, 1919,* 1517-21.

railroad out of the area. One at Souilly served Third Corps , overseeing hospitals at Souilly, Vaubecourt, Revigny and Vadelaincourt. One at Fleury served First and Fifth Corps and covered hospitals at Fleury, Froidos, Villers-Daucourt, and Varennes.[135]

Under these evacuation centers were railhead hospitals. These hospitals had loading platforms built that accommodated an entire hospital train. These hospitals at Souilly, Fleury, Froidos, Villers-Daucourt, and Varennes, received patients from hospitals within their area. Vadelainecourt, Vaubecourt, and Revigny had railheads, and served as railhead hospitals. There were 7,000 beds located from nine to thirty-five kilometers from these railheads. The railhead hospitals each had an evacuation ambulance company assigned to transport patients within the evacuation area. The only exception was the Souilly area, which needed two ambulance sections for its 4,130 beds. The need to move patients to a rail line for evacuation, further stressed an ambulance system that lacked sufficient transport for the demands of the offensive. Problems arose when evacuation hospitals at railheads failed to emphasize evacuation over hospitalization one. They rapidly filled as patients poured in.[136]

HOSPITALIZATION IN THE MEUSE–ARGONNE

Hospitalization faced many problems in the Meuse-Argonne. First was the inadequate number of hospitals available to serve as evacuation hospitals. This forced the Medical Department to use field, Red Cross, and mobile hospitals in their place. Evacuation hospitals received massive

[135]*Field Operations*, 539-40. H. H. M. Lyle, "The Principles of the Surgery, Hospitalization and the Evacuation of the Wounded in the Meuse-Argonne Offensive," *Military Surgeon* 84 (June 1939): 585-87.

[136] Lyle, "Evacuation in the Meuse-Argonne," 585-87. *Field Operations*, 531-41.

augmentation from base hospitals. Evacuation Hospital No. 14 had its surgical staff doubled; No. 15 received nine teams and twenty nurses. Over one hundred officers, nurses, and soldiers augmented Evacuation Hospital No. 6. Although this strained the staff of the base hospitals, it allowed the evacuation hospitals to provide initial surgical care.[137]

The hospitals struggled with massive numbers of wounded. At Evacuation Hospital No. 14, "streams of ambulances rolled back from the forward medical installations, loaded with casualties." The wounded "crowded" Evacuation Hospital No. 8 until the armistice. The situation got so bad, that each surgical team covered three operating tables, so that no time was wasted. Evacuation Hospital No. 6 set a record for operating on 350 cases in one day. Almost every other evacuation hospital involved saw their busiest times during the Meuse-Argonne fighting.[138]

The deaths in hospitals increased during this battle. From June to August, these averaged between four and five per cent of admissions for battle injuries. In October and November, the percentage of deaths in hospital increased to over 6.6 per cent. This increase was probably from a combination of the heavy workload and the delays in evacuation.[139]

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[137]Lyle, "Evacuation in the Meuse-Argonne," 585-91. *Field Operations*, 531-41, 634-35, 810-837. "Notes Made by the Inspector General, A. E. F., During Active Operations from September 12 to November 11, 1918," reprinted in *Field Operations*, 838-42. *Report of the Surgeon General, 1919*, 1476, 1517-23, 1691-1705. Darnall, "War Service with an Evacuation Hospital," 270. Walter J. Bachman, *Souvenir Roster and History of Evacuation Hospital No, 15 with The Story of Verdun and the Argonne Drive*, (Privately published, 1919) 29-30. Shipley and Considine, *Evacuation Eight*, 33-34. Pottle, *Stretchers*, 226-27. *History of Evacuation Hospital Number Six*, 18.

[138]*Report of the Surgeon General, 1919*, 1476, 1517-23, 1691-1705. *Field Operations*, 810-837. Darnall, "War Service with an Evacuation Hospital," 270-274. Bachman, *History of Evacuation Hospital No, 15*, 29-35. Shipley and Considine, *Evacuation Eight*, 23-25. Pottle, *Stretchers*, 226. *History of Evacuation Hospital Number Six*, 13-14.

[139]Albert G. Love, The Medical Department of the United States Army in the World War, Volume XV, *Statistics, Part Two Medical and Casualty Statistics*, (Washington, D.C.: Government Printing Office, 1925), 1025, 1026 (Hereafter referred to as *Medical Statistics*).

To minimize the load on the evacuation system and on the hospitals, treatment for the slightly wounded changed. These soldiers received care back in the evacuation or base hospitals by doctrine. With the strains the offensive and the influenza epidemic placed on the evacuation system and hospitals, and the urgent need for soldiers at the front, the A. E. F. could no longer afford this luxury. These men needed to get back quickly to their units. Brigadier General Finney, the consultant in surgery, and Colonel Stark, the First Army Surgeon, placed more experienced surgeons forward with the triage stations. These surgeons screened out those patients who could return to their units in three days. Other medical officers screened out the lightly wounded gas, sick, and other casualties. This screening decreased the percentage of minor casualties evacuated, while increasing the number of men returned to their units.[140]

MOVING THE HOSPITALS

The advance by the American troops forced the hospitals to move in order to prevent evacuation distances from becoming too long. Doctrine recommended moving evacuation hospitals to keep about twenty-five kilometers behind the front. During the November offensive, Colonel Stark had the evacuation hospitals move forward in a "leap-frog" fashion, with one hospital receiving patients while the one behind it prepared to move. All but one of the mobile hospitals and all but two of the evacuation hospitals moved at least once during the operation.[141]

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[140]Report of Evacuation Branch G–4 Argonne-Meuse Operation, TMs. File 191-41.6 Army War College Historical Section, Carlisle, PA. Lyle, "Evacuation in the Meuse-Argonne," 587-88. Stark, "Hospitalization for St. Mihiel Operation and ARGONNE-MEUSE Offensive." *Report of the Surgeon General, 1919,* 1517-23. *Field Operations,* 531-41, 634-35.

[141]Letter, Alexander N. Stark, Chief Surgeon First Army, to Assistant Chief of Staff, G-4, First Army, 4 November 1918, Subject: Moving of Evacuation Hospitals. TMs, Army War College Historical Section, Carlisle, PA. Stark, "Hospitalization for St. Mihiel Operation and

The biggest problem in moving the hospitals was a lack of transportation. Each division and corps suffered from a shortage of trucks and horses. The sanitary trains could not help, because they needed all their trucks to evacuate patients. The other units in the Army needed trucks for hauling ammunition, supplies, troops, and artillery forward. Hospitals were a lower priority.[142]

The divisions required care forward and the Medical Department developed two solutions for the problem. First, field hospitals set up along evacuation routes to provide rest stations for the casualties as they went back to evacuation hospitals. These hospitals treated shock, redressed wounds, and provided necessary care for the wounded. As an ambulance returned from the front, if the patient developed signs of distress, the ambulance would drop him off at the field hospital for stabilization. It would then pick up another patient who could stand the journey back to the evacuation hospitals. This allowed the ambulance to keep moving in its convoy without jeopardizing the lives of the wounded by delaying their care. The second modification was to assign the surgical and X-ray trucks from mobile hospitals to divisional triage hospitals. These teams had their own trucks so that they could keep up with the triage as it moved forward.[143]

Problems arose in the coordination between the evacuation system and the hospitals. One problem occurred from trying to keep the ambulances

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ARGONNE-MEUSE Offensive." *Report of the Surgeon General, 1919,* 1476, 1517-23, 1691-1705. *Field Operations,* 531-41, 634-35, 810-837.

[142]Letter, Alexander N. Stark, Chief Surgeon First Army, to Assistant Chief of Staff, G-4, First Army, 4 November 1918, Subject: Moving of Evacuation Hospitals. TMs, Army War College Historical Section, Carlisle, PA. Stark, "Hospitalization for St. Mihiel Operation and ARGONNE-MEUSE Offensive." *Report of the Surgeon General, 1919,* 1476, 1517-23, 1691-1705. *Field Operations,* 531-41, 634-35, 810-837.

[143]Stark, "Hospitalization for St. Mihiel Operation and ARGONNE-MEUSE Offensive." *Report of the Surgeon General, 1919,* 1476, 1517-23, 1691-1705. *Field Operations,* 531-41, 634-35, 734-35, 810-837.

going to hospitals which had beds available or treated a particular class of patient, while the hospitals were moving, filling up, and evacuating patients. At one point, the First Corps had patients going to eleven different hospitals in eleven different places. To solve this, Stark had the corps surgeons assign an officer to regulate the flow of the ambulances. He changed the routing of the ambulances as hospitals filled and emptied. The system used traffic signs, couriers and military police. It allowed the balanced use of all the evacuation hospitals, so none were overloaded while others were empty.[144]

A second problem was that too many unoperated cases were arriving at base hospitals. This markedly increased the morbidity, predisposing the soldier to infection and gangrene. Finney and Stark helped by assigning these cases to more experienced surgeons at the front. These special teams rapidly treated these lightly wounded cases, while the slower operators worked on other cases requiring detailed care. This allowed the rapid treatment of many soldiers who would otherwise have had to wait until after their evacuation for operation. The number of unoperated cases evacuated to the base hospitals dropped from 11,370 during the first phase of the offensive to 293 in the second.[145]

Some of the consultants tried to have special hospitals at the front, similar to the specialized base hospitals. The Medical Department tested this system with a specialized neurosurgical hospital at Mobile Hospital No. 6. It rapidly became apparent that this hospital required its own ambulance service to insure the delivery of its patients from the other hospitals. It also needed special triage to separate the neurosurgical cases and send them to

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144 *Field Operations,* 542-43, 634-38.

145 Lyle, "Evacuation in the Meuse-Argonne." 587-88. *Report of the Surgeon General, 1919,* 1517-23. *Field Operations,* 531-41, 634-35.

Mobile Hospital No. 6. The consultants solved the problem of getting specialized care for the patients by assigning specialists to each evacuation hospital.[146]

THE ARMISTICE

The Meuse-Argonne offensive and the First World War ended 11 November 1918. The Medical Department was exhausted. Its job was not yet over. Almost ten per cent of the A. E. F. was in the hospital. The hospitals in France continued to care for the convalescing patients. As the hospitals emptied, they went back to the United States. Evacuation hospitals accompanied the Third Army to Germany as part of the occupation force.[147]

The Medical Department supported the largest Army that the United States had fielded overseas, 1,910,934 men in Europe in November 1918. The A. E. F. suffered 224,089 wounded, 36,694 killed in action, and 13,691 died of wounds during the war. In addition, it had 1,000,683 soldiers admitted to hospitals for disease and non-battle injuries, while 23,998 died. To treat this force, the A. E. F. Medical Department had 18,146 officers, 10,081 nurses, and 145,815 enlisted men. The casualty figures represented the lowest mortality rates both from wounds and from non-battle causes in any previous American war.[148] Major General Johnson Hagood summed up the performance of the Medical Department when he said:

> I am absolutely certain they [our soldiers] had better medical attention [than any other soldiers in Europe]. In fact, one of the worst things that could be said about a sick or wounded man in France was

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[146]Lyle, "Evacuation in the Meuse-Argonne," 587-88. *Report of the Surgeon General, 1919*, 1517-23. *Field Operations*, 531-41, 634-35. Cushing, *Surgeon's Journal*, 458-60.

[147]Albert G. Love, *War Casualties: Their Relation to Medical Service and Replacements*, Army Medical Bulletin No. 24, (Carlisle Barracks, PA: Medical Field Service School, 1931), 44.

[148]*Medical Statistics*, 82, 103, 147. *Administration A. E. F.*, 93.

that he had not yet been taken to the American hospital. To many this sounded almost as bad as to say that he was still lying on the battlefield.[149]

The Medical Department could not rest on its success. The war demonstrated strengths and weaknesses of its organization. It now had to analyze its performance to improve it.

[149]Hagood, *Services of Supply*, 346.