#### CHAPTER 2

#### PREPARATION FOR WAR

#### INTRODUCTION

The Medical Department entered the twentieth century resolved not to become involved in a fiasco like the Spanish-American war experience. In the first seventeen years of the century, it prepared for war better than it had before in its history. It reformed itself in several different ways. It first worked through the Congress to provide a legislative basis for expansion of the Medical Department to meet wartime needs. The Department reformed the medical supply situation as well. The troubles in Mexico tested the system and led to further reforms. Second, the Department worked with the civilian medical community to increase medical preparedness. The American National Red Cross raised hospital units and organized nurses in peacetime that would enter the Army during war. These units provided an effective reserve system for the Medical Department. Finally, the civilian medical community gained invaluable experience as volunteers in Europe before the United States entered the war. This experience proved invaluable for establishing an effective medical organization once America declared war.

# LEGISLATIVE REFORMS

The first reform, the Army Reorganization Act of 2 February 1901, created some problems while it solved others. It established a Nurse Corps and allowed the hiring of contract dental surgeons. It increased the Medical

Corps from 192 to 321 officers and hospital stewards from 200 to 300. It authorized 50 surgeons and 150 assistant surgeons for the Volunteer Regiments in the Philippines. This medical organization supported an Army authorized 100,619 men. The Army Medical Department recognized the inadequacy of this organization and lobbied for revision.<sup>1</sup>

The new organization, although increasing the number of doctors, decreased the proportion of medical officers to troops to less than one per 300 soldiers. The act limited chances for advancement for medical officers because the increased positions were all at the company grades. President Theodore Roosevelt, himself, sent a special message to Congress recommending an increase in the Medical Department.<sup>2</sup>

Lobbying by the Medical Department led to the reorganization act of 23 April 1908. This law increased the number of regular Army medical officers by 123, which included six colonels, twelve lieutenant colonels and forty-five majors. The increase in the field grade ranks restored a reasonable chance for medical officers' advancement. Most importantly, the act authorized the Medical Reserve Corps, a peacetime pool of trained civilian physicians. This represented the first United States Army volunteer reserve and proved the forerunner for the entire Army Reserve system.<sup>3</sup>

<sup>2</sup>U.S. War Department. "Report of the Surgeon General" Annual Reports, 1905. Vol. I, Part 2. (Washington, D.C.: Government Printing Office, 1906), 149-150. P.M. Ashburn, A History of the Medical Department of the United States Army, (Boston and New York: Houghton Mifflin Company, 1929), 247.

<sup>&</sup>lt;sup>1</sup>An Act to Increase the Efficiency of the Permanent Military Establishment of the United States, Statutes at Large, 31, sec. 752-3 (1901). William O. Owen, A Chronological Arrangement of Congressional Legislation Relating to the Medical Corps of the United States Army from 1785 to 1917, (Chicago: American Medical Association, 1918), 34. U.S. War Department "Report of the Surgeon General," Annual Reports, 1901.

<sup>&</sup>lt;sup>3</sup>An Act to Increase the Efficiency of the Medical Department of the United States Army, Statutes at Large, 35.1, sec. 66-9 (1908). Owen, Congressional Legislation, 37-39. War Department, Annual Reports, 1908, 89-153. 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), 60

This program attracted many of the great names in American medicine, which helped the success of the program. These men used their influence to maintain high standards for selection to the Regular Medical Corps, as well as sending some of their best and brightest students to the Army.<sup>4</sup> The Medical Reserve Corps grew from 180 in 1909 to 1,757 in 1916, providing an important source of trained physicians to the Army.<sup>5</sup>

# NURSING AND DENTAL CORPS

A different reserve system developed for nurses. The Army Reorganization Act of 1901 directed the Surgeon General to maintain a list of qualified nurses to serve in an emergency. These women signed a written agreement to serve that they renewed every six months. The reserve list system failed to attract many nurses. Many thought this lack of a nursing reserve would seriously handicap the Army in providing hospital care during wartime. Miss Jane Delano, the superintendent of nurses in the War Department from 1909 to 1912, believed that the American Red Cross could provide this reserve. Because she felt the War Department was neglecting the nursing reserve, she resigned from the Army and became a volunteer for the Red Cross. She organized the American Red Cross Nursing Service and served as its chairman. By 30 June 1913, more than 4000 nurses had signed up and by 1917, about 8000. The Red Cross nursing reserve proved highly successful in providing the Army more than 20,000 nurses. 6

<sup>(</sup>Hereafter referred to as *The Surgeon General's Office*). Ashburn, *Medical Department History*, 248.

<sup>&</sup>lt;sup>4</sup>War Department, Annual Reports, 1908, 89-153. The Surgeon General's Office, 60. Ashburn, Medical Department History, 248.

<sup>&</sup>lt;sup>5</sup>Richard B. Crossland and James T. Currie, *Twice the Citizen, A History of the United States Army Reserve, 1908-1983*, (Washington, D.C.: Office of the Chief, Army Reserve, 1984), 19.

<sup>&</sup>lt;sup>6</sup>Robert V. Piemonte and Cindy Gurney, editors, *Highlights in the History of the Army Nurse Corps*, (Washington, D.C.: U.S. Army Center of Military History, 1987), 6-7. Ashburn,

The founding of the Dental Corps was another important step in the preparation for World War I. Congress authorized contract dental surgeons in 1901, and in 1911, authorized a dental corps. Initially, 60 officers received commissions as first lieutenants. Dentists played an important role in the World War, not just in providing dental care, but in supplementing the overworked physicians and nurses in medical care.

#### MEDICAL SUPPLY REFORM

The Medical Department realized that creating a useful medical service required more than personnel reforms, so it turned its attention as well to the supply situation. Failures of medical supply plagued the war effort in 1898. Investigation revealed that the supply problems developed from failures in purchasing and distribution. To correct this, the Army appointed a commission, which determined the amount of each medical supply item available within 30 days and the amount of that item required for armies of various sizes. Using the commission's recommendations and data, the Medical Department divided supply items into two categories: those obtainable in the civilian market and those peculiar to the military service. It could rely on easily purchasing those supplies in the first category in time of emergency. It needed to procure those in the second category ahead of time and maintain them in a war reserve. Congress appropriated \$200,000 for the purchase of field equipment in 1908. It continued this appropriation in subsequent years, which allowed the Medical Department to procure the equipment for the following units by 1916:

Medical Department History, 249. Foster Rhea Dulles, The American Red Cross: A History, (New York, Harper and Brothers, 1950), 96-97.

Owen, Congressional Legislation, 41-42. Ashburn, Medical Department History, 250.

<sup>&</sup>lt;sup>7</sup>Owen, Congressional Legislation, 41-42. Ashburn, Medical Department History, 250. James A. Tobey, The Medical Department of the Army: Its History, Activities, and Organization, (Baltimore, The Johns Hopkins Press, 1927), 32.

Evacuation Hospitals	20
Base Hospitals	3
Field Hospitals	44
Ambulance Companies	
Regimental Infirmaries	1318

The reorganization of the medical supply system became a Medical Department priority. The medical depot at New York closed for several months, to correct the confusion between routine and war supplies. A system of field medical supply depots was established throughout the country that issued supplies on telegraphic order. These depots contained enough supplies for a force of several divisions. The Army tested the system in 1906 when it sent an expeditionary force to Cuba. The medical supplies arrived at the port of embarkation long before any other supplies. This new system proved of inestimable value during the World War.<sup>9</sup>

#### MEDICAL MANEUVERS

The Medical Department started to test these developments in the field. In the 1903 maneuvers, the Army tested the new field hospital. The use of field units expanded; a year later, provisional ambulance companies, field hospitals, and base hospitals took part. After that, the medical units participated annually. By 1910, the maneuvers contained specific field problems for the participating medical units. The participation of these units improved as permanent medical units replaced the provisional ones. 10

<sup>&</sup>lt;sup>8</sup>The Surgeon General's Office, 61. Also War Department, Annual Reports for 1908 and subsequent.

<sup>&</sup>lt;sup>9</sup>War Department, Annual Reports, 1908, 147-153. The Surgeon General's Office, 61-62.

<sup>&</sup>lt;sup>10</sup>War Department, Annual Reports, 1911. The Surgeon General's Office, 70.

# FIRST TEST IN MEXICO

In 1911, a revolution in Mexico and the unrest it caused, led to the mobilization of a division on the border. The actions against Mexico provided field experience for the new medical system. The Army sent a sanitary train of four field hospitals with ambulance companies to accompany the division. This sanitary train, trained and organized under the recent reforms, showed how far the Medical Department had progressed. Due to the improved sanitation, the identification of carriers, and the vaccination of the troops against typhoid, there were only two cases of typhoid fever in the camps. Other diseases were comparably low.<sup>11</sup>

The Medical Department still had problems supplying equipment and men to support the Army. The small stock of available medical equipment and Hospital Corps soldiers hampered the medical support of the 1913 occupation of Vera Cruz. Although a field hospital accompanied the brigade to Vera Cruz, the doctors improvised an ambulance company from the regimental ambulances. The Surgeon General, in his annual report, said that the Hospital Corps could supply only about one-fourth the sanitary units called for in the *Field Service Regulations*. 12

The deterioration of the Mexican situation in 1916 led to the Punitive Expedition of 12,000 men supported by the rest of the Regular Army and the National Guard to the Mexican border. The expedition required two field hospitals and two ambulance companies. One of the units mobilized was the field hospital of the District of Columbia National Guard. Herbert

<sup>&</sup>lt;sup>11</sup> The Surgeon General's Office, 70-71.

<sup>&</sup>lt;sup>12</sup>U.S. War Department. "Report of the Surgeon General" Annual Reports, 1913. Vol. I, (Washington, D.C.: Government Printing Office, 1914), 401. The Surgeon General's Office, 70-74

<sup>&</sup>lt;sup>13</sup>The Surgeon General's Office, 70-74.

George, who served as a farrier for the hospital on this expedition, remembered how the unit gained confidence in its ability to treat the soldiers during its four months of active service. He noted that the unit rated an "excellent" for its performance. He later served with this field hospital in the Forty-second (Rainbow) Division.<sup>14</sup>

This expedition was the first where the United States Army used motorized ambulances, which easily proved their worth. It also demonstrated the need for more medical and sanitary units to support the Army in the field. After the expedition, the Army increased the number of men assigned to the table of organization for field hospitals and became more conscious of the importance of field sanitation in minimizing disease. This interest in effective field sanitation proved invaluable in the American Expeditionary Forces (A. E. F.). 16

Major General John J. Pershing commanded the Army in Mexico.

Many of the men who would lead the Medical Department of the A. E. F.

served with him. Colonel Merritte W. Ireland, the Post Surgeon at Fort Sam

Houston, later became the Chief Surgeon of the A. E. F. Colonel Walter D.

McCaw, the Chief Surgeon of the Department, was Ireland's assistant in the

A. E. F. and became its Chief Surgeon when Ireland became Surgeon

General. Colonel James Glennan, the Chief Surgeon for Pershing's force,

served as the Chief of the Hospitalization Division for the A. E. F. These men

established a close working relationship with Pershing and one another that

enabled them to work efficiently together in Europe. 17

<sup>&</sup>lt;sup>14</sup>Herbert George, *The Challenge of War*, (New York, Washington, and Hollywood: Vantage Press, 1966), 6, 215.

<sup>&</sup>lt;sup>15</sup>The Surgeon General's Office, 70-74.

<sup>&</sup>lt;sup>16</sup>George, The Challenge of War, 215.

<sup>&</sup>lt;sup>17</sup>Ashburn, Medical Department History, 236-37.

#### DEFENSE ACT OF 1916

When difficulties in Mexico heightened, Congress passed the National Defense Act of 1916, which provided a comprehensive reorganization of the Army. It established the Officers' Reserve Corps and the Enlisted Reserve Corps, and incorporated the Medical Reserve Corps into the Officers' Reserve Corps. 18 It allowed the expansion of the Army to 175,000 and set up the organization of that force into brigades, divisions, and, at the discretion of the President, corps and armies. It reorganized the Medical Department, and brought the Medical Corps, Medical Reserve Corps, Dental Corps, Nurse Corps, Veterinary Corps and the enlisted force into a single department, with The Surgeon-General, a major general, as head. The act authorized seven medical officers and one dental surgeon per thousand enlisted strength of the Army. Similarly, it authorized a medical enlisted force of 5 per cent of the total enlisted force of the Army. 19

Recognizing the importance of the sanitary trains<sup>20</sup> to the improved health of the Army, the act prescribed one sanitary train per Infantry and Cavalry division. Army corps contained "as many sanitary trains as the President may deem necessary."<sup>21</sup> It also acknowledged the close coöperation between the American National Red Cross and the Medical Department, when it specified that the President could detail five officers to the military relief division of the Red Cross, which worked exclusively on providing

<sup>&</sup>lt;sup>18</sup>Crossland and Currie, Twice the Citizen, 30.

<sup>&</sup>lt;sup>19</sup>An Act for Making Further and More Effectual Provision for the National Defense, and for Other Purposes, Statutes at Large, 39, sec. 166 (1916). Owen, Congressional Legislation, 49-59. The Surgeon General's Office, 75-80.

<sup>&</sup>lt;sup>20</sup>The sanitary train consisted of those units assigned to the division that provided medical care, but were not assigned to the regiments. It normally consisted of a train headquarters, field hospitals, medical supply unit, camp infirmaries, and ambulance companies. The next chapter discusses the organization of the sanitary trains in more detail.
<sup>21</sup>The Surgeon General's Office, 75.

medical support to the armed forces of the United States. It gave the Red Cross permission to

...erect and maintain on any military reservations within the jurisdiction of the United States buildings suitable for the storage of supplies, or to occupy for that purpose buildings erected by the United States, under such regulations as the Secretary of War may prescribe. <sup>22</sup>

#### THE AMERICAN NATIONAL RED CROSS

The references to the American National Red Cross in the Defense Act reflected its importance in providing medical support in time of war. It is important to understand how the relationship with the Red Cross developed. Although the Red Cross worked with the military since its founding, in 1905 Congress incorporated the American National Red Cross. The relationship between the Red Cross and the military expanded with the Act of Congress of 24 April 1912, which allowed the President to accept assistance from the Red Cross in time of war. The Red Cross would provide sanitary supplies and personnel to the armed forces. Those personnel federalized would serve as civilian employees of the United States government.<sup>23</sup>

As part of its charter to provide war relief, the American National Red Cross participated in the European war. In September 1914, eleven hospital units sailed for Europe, followed by two more in November. These provided medical care to both sides for approximately one year. These hospital units employed seventy-five surgeons and 255 nurses and treated approximately 30,000 patients. In the spring of 1915, donations to the Red Cross declined,

<sup>&</sup>lt;sup>22</sup>Ibid., 77.

<sup>&</sup>lt;sup>23</sup>Act of April 24, 1912, 62d Congress, 2d Session, "An Act to provide for the use of the American National Red Cross in aid of the land and naval forces in time of actual or threatened war." U.S. Congress, House, *Twelfth Annual Report of the American National Red Cross*, 64th Congress, 2d Session, 1918, House Document No. 2131, 28.

making it difficult to pay the salaries, travel, and costs of running these hospitals. At the same time, the Red Cross believed that the sanitary services of the belligerents were able to provide medical care without American assistance. The Bureau of Medical Service of the Red Cross made the decision to withdraw its hospital units and to use the money saved to purchase medical supplies for the combatants.<sup>24</sup>

#### CIVILIAN MEDICAL ASSISTANCE

The civilian medical community also supplied medical assistance to the combatants. Dr. George W. Crile of Cleveland was one of the key individuals. Crile had served as a brigade surgeon in Cuba during the Spanish-American War, where he saw first hand the failings of the Army Medical Department. A patriotic man, Crile joined the Medical Reserve Corps when it started. He was one of the most prominent men in American surgery, being a founding member of the American College of Surgeons and a professor of surgery at Wooster Medical School and Western Reserve University.<sup>25</sup>

In the fall of 1914, Myron Herrick, the ambassador to France, wrote Crile that he wanted to start an *Ambulance Americaine* (American Hospital). Herrick wanted to pattern it after one that had helped the French in the Franco-Prussian War. He sent Francis Drake, the president of the American Charitable Commission in Paris, to Cleveland to visit Crile and discuss the hospital's organization. Crile got the idea of raising the hospital's personnel from the university's surgical service. This had the advantage of composing a

<sup>24</sup>U.S. Congress, House, *Eleventh Annual Report of the American National Red Cross*, 64th Congress, 1st Session, 1916, House Document No. 1307, 9-25.

<sup>&</sup>lt;sup>25</sup>George W. Crile, An Autobiography, edited with sidelights by Grace Crile, 2 Vol., (Philadelphia and New York: Lippincott, 1947), 86-108. Alexander T. Bunts and George W. Crile, Jr., compilers, To Act as a Unit: The Story of the Cleveland Clinic, (Cleveland: Cleveland Clinic Foundation, [1971?]), 6,7.

unit of people who had worked together and reduced training time. He made a deal with the trustees of the Lakeside Hospital. If the hospital would raise \$10,000 for the rest of the staff, Crile and his partner, Dr. William E. Lower, would pay their own way to France. He approached Harvard, the University of Pennsylvania, University of Chicago, and the Johns Hopkins Hospital to see if they wanted to participate in the hospital. All of these, but Johns Hopkins, signed up for a three month rotation in Paris.<sup>26</sup>

### CRILE'S SUGGESTION

The Ambulance Americaine worked well. Their experiences in France impressed Crile and Dr. Harvey Cushing that the United States would soon become involved in the war in Europe. They started giving speeches about their experiences in France and their views on the necessity for medical preparedness. The Surgeon General, William C. Gorgas, heard the address to the American First Aid Conference, where Crile "advocated well-organized hospital units of men who have trained together." Gorgas, white-haired and distinguished, had earned the respect of the civilian medical community.<sup>27</sup>

Crile's remarks impressed Gorgas who solicited his and Cushing's views on problems of raising base hospitals. Gorgas worked under the restrictions of American neutrality that limited Army medical officers from going to Europe to observe the medical methods in use and desired to use Crile's experience to fill that gap. In a letter to Crile dated 25 August 1915, Gorgas asked him the hypothetical question of how the Medical Department should establish a base hospital if war has been declared.<sup>28</sup> Crile's answer

<sup>28</sup>Crile, Autobiography, 265-66. Cushing, A Surgeon's Journal, 79.

<sup>&</sup>lt;sup>26</sup>Crile, Autobiography, 247-50.

<sup>&</sup>lt;sup>27</sup>Ibid., 265. Harvey Cushing, From a Surgeon's Journal: 1915-1918, (Boston: Little, Brown, and Company, 1936), 79-82.

would set the stage for the raising of the Red Cross base hospitals two years later.

It has occurred to me that the heads of surgery in the American medical colleges in good standing would form an excellent nucleus from which such reserve organizations may be built. This would on the average give the best men to the service both in personal fitness and with experience in organization—and of no less importance, they would have connections with our best hospitals; they would also have a large corps of qualified assistants and would be well distributed over the land.<sup>29</sup>

### THE COUNCIL OF MEDICAL PREPAREDNESS

In October 1915, Crile presented his ideas at the Clinical Congress of Surgeons in North America at a Symposium on "Military Surgery." Other prominent surgeons, such as Dr. Frederic A. Washburn of the Massachusetts General Hospital and Drs. Hugh H. Young and Winford Smith of Johns Hopkins, shared this concern for medical preparedness. The leadership of the American Medical Association, American Surgical Association, the Congress of American Physicians and Surgeons, the American College of Surgeons, and the Clinical Congress of Surgeons in North America met in Chicago in April 1916 to form a Committee on Medical Preparedness. These men clearly saw that the United States needed to prepare ahead of time if it were to expect adequate medical support in war. They volunteered their own services and those of the 70,000 physicians whom they represented. 31

<sup>&</sup>lt;sup>29</sup>Crile, Autobiography, 267.

 <sup>&</sup>lt;sup>30</sup>George W. Crile, "The Unit Plan of Organization of the Medical Reserve Corps, U.S.
 Army for Service in Base Hospitals," Surgery, Gynecology, and Obstetrics 22 (1916), 68-69.
 <sup>31</sup>The Surgeon General's Office, 81. Hugh H. Young, Hugh Young: A Surgeon's Autobiography, (New York: Harcourt, Brace and Co., 1940), 264-265. [Clymer, George], ed., The History of U.S. Army Base Hospital No. 6 and Its Part in the American Expeditionary Forces, (Boston: Privately published, 1924), 22-23.

This committee petitioned President Woodrow Wilson to increase medical readiness in the Army. On 26 April 1916, they offered to make a survey of the medical resources available to go to war to include a list of men trained in the various specialties, of nurses, and of equipment.<sup>32</sup> The President, on the advice of the Secretary of War and the Surgeon General, accepted the offer.33 The Committee wanted to insure that the Council of National Defense had medical representation. On 11 October, President Wilson appointed Dr. Franklin H. Martin to the advisory body. Dr. Martin constructed a medical advisory committee to include himself as chairman; William C. Gorgas, Surgeon General of the Army; Rupert Blue, Surgeon General of the Public Health Service; Colonel Jefferson R. Kean, Director General, Department of Military Relief, American Red Cross; Dr. William Welch, member, National Research Council; Dr. William J. Mayo, chairman, Committee of American Physicians for Medical Preparedness; Dr. Frank Simpson, chief, Medical Section, Council of National Defense, and secretary, Committee of American Physicians for Medical Preparedness.<sup>34</sup>

# RAISING BASE HOSPITALS

The Council of Medical Preparedness proved instrumental in integrating the medical community with the armed services. It adopted Crile's base hospital plan and recommended it to the Surgeon General. The correspondence with Crile convinced Surgeon General Gorgas, so he asked Crile, Cushing, and Dr. J. M. Swan to proceed with organizing base hospitals. The Red Cross protested, as its charter gave it the duty of providing

<sup>&</sup>lt;sup>32</sup>Report of the Chairman of the Committee on Medicine and Sanitation of the Advisory Commission of the Council of National Defense, (Washington, D.C.: Government Printing Office, 1 April 1918)

<sup>&</sup>lt;sup>33</sup>The Surgeon General's Office, 81.

<sup>&</sup>lt;sup>34</sup>Ibid., 81-82.

volunteer care to war casualties. Fortunately, the two organizations struck a compromise. They agreed that the American Red Cross would raise and equip the hospital units along military lines. However, when these units came on active duty, they would become a part of the Army. The administrative officers would come from the Army with all other officers assigned to the Medical Reserve Corps. The Army and Red Cross planned initially to raise thirty-eight base hospitals of 500 beds apiece. Shortly after the United States declared war, the Medical Department expanded this to fifty hospitals. In addition to the base hospitals for the Army, the Red Cross raised eight 250-bed base hospitals for the Navy.<sup>35</sup>

The Red Cross organized a Department of Military Relief in 1916.

Colonel Jefferson R. Kean became its first director-general, and promptly visited medical schools throughout the country to encourage the organization of base hospitals.<sup>36</sup> In March 1916, the Red Cross and Lakeside Hospital from Cleveland signed an agreement for Crile to form a hospital unit for a five-hundred-bed base hospital. This unit was to remain ready for service as required by the Red Cross or the Surgeon General. The local Red Cross chapter raised the money and the first base hospital formed.<sup>37</sup>

The Red Cross felt that to demonstrate the feasibility of the base hospital system, a base hospital needed to be mobilized. It originally planned

<sup>35</sup>Cushing, A Surgeon's Journal, 79-82. [E. L. Munson], "Organization of Base Hospitals." Military Surgeon 39 (July, 1916): 107-08. [E. L. Munson], "The Red Cross" Military Surgeon 39 (August, 1916): 200-13. U.S. Congress, House, Twelfth Annual Report of the American National Red Cross. 64th Congress, 2d Session, 1918, House Document No. 2131, 26-37. The Surgeon General's Office, 92-93. Henry P. Davison, American Red Cross in the Great War, (New York: The MacMillan Company, 1920), 80-82. T. W. Richards, "The Organization and Equipment of Navy Hospital Units" United States Naval Bulletin 12 (April, 1918), 186-93. Dulles, American Red Cross, 179-80. Jefferson R. Kean, "The New Role of the American Red Cross," Military Surgeon 38 (May 1916): 539-44.

<sup>&</sup>lt;sup>36</sup>Eleventh Red Cross Report, 9-25. Kean, "New Role of the Red Cross," 539-44. <sup>37</sup>Crile, Autobiography, 267-68.

to use the Presbyterian Hospital Unit at the annual meeting of the American College of Surgeons in October 1916. However, the Presbyterian Hospital trustees stopped the mobilization three weeks before the meeting. Instead, the Red Cross mobilized and set up the Lakeside Hospital Unit in Philadelphia. Using tents supplied by the Philadelphia depot, the hospital covered about 12 acres. For a little over \$5000, the mobilization provided a powerful demonstration of the base hospital concept and of the role of the civilian medical community in medical preparedness.<sup>38</sup>

# MEDICAL EQUIPMENT FOR ARMY HOSPITALS

The mobilization familiarized the civilian physicians with Army medical and surgical equipment, much of which was old and outdated. The Surgeon General's Office formed a Committee on Standardization of Medical and Surgical Supplies and Equipment, consisting of Crile, Cushing, Dr. John M. T. Finney from Johns Hopkins, Dr. William Mayo from the Mayo Clinic, and Dr. George Brewer from Presbyterian Hospital. These men found that the reform of the medical supply situation was far from perfect. Cushing describes the medical chests as "antiquated, with instruments dating from the Civil War." Crile recalls finding instruments that no one in the group even knew how to use.<sup>39</sup>

The Army had neither the appropriations, nor the storage space to acquire the equipment for the base hospitals. Therefore, it relied upon charitable donations to raise the money. The War Department estimated that each base hospital would cost about \$25,000; however the units averaged

 <sup>38</sup>Crile, Autobiography, 270-71. The Surgeon General's Office, 98. Davison, Red Cross,
 82.
 39Cushing, A Surgeon's Journal, 89. Crile, Autobiography, 271.

\$75,000. Base Hospital No. 38 spent more than \$120,000, while the Red Cross spent over \$3,000,000 on the base hospital program. Most of the increased cost was from purchases beyond the standard equipment such as ambulances, extra beds, and laundry equipment.<sup>40</sup>

### TRAINING CIVILIANS IN MILITARY SUBJECTS

The increase in military awareness among the civilian medical community raised calls for the teaching of military subjects in medical schools throughout the country. Medical officers recognized the need for knowledge of military subjects, as well as medical ones. This prompted courses in military medical subjects at medical schools. Johns Hopkins used medical students as soldiers in its Base Hospital No. 18. These men went to France with the unit and graduated from medical school at Bazoilles.<sup>41</sup> The Harvard unit, Base Hospital No. 5, trained fifty medical students, but the University Committee prohibited the fifty students from going overseas with the unit.<sup>42</sup>

The proper use and training of the Medical Reserve Corps were other issues in the Medical Department. The 1916 Wellcome Prize, for the best essay submitted to the Association of Military Surgeons, went to Captain Marlon Ashford for his essay on the Medical Reserve Corps. Many of the articles in *Military Surgeon* in 1916 and early 1917, dealt with teaching civilian physicians military subjects and the most effective ways to train and employ the Reserve Corps. The issue at the heart of these essays was that

<sup>42</sup>Cushing, A Surgeon's Journal, 80.

<sup>&</sup>lt;sup>40</sup>Davison, Red Cross, 82. W.M. L. Coplin, American Red Cross Base Hospital No. 38 in the World War. (Philadelphia: Privately published, 1923), 30. Richards, "Navy Hospital Units," 191.

<sup>&</sup>lt;sup>41</sup>History of Base Hospital No. 18, American Expeditionary Forces, (Baltimore: Base Hospital No. 18 Association, 1919), 16.

trained physicians needed to be available to prevent another Spanish-American War fiasco.<sup>43</sup>

One solution, a two week period of annual training for members of the Medical Reserve Corps, the Officers' Reserve Corps adopted. A second, the institution of a medical correspondence course for the reserve officers, proved a disappointment. Only about one-fourth of the members signed up for the course and many dropped out. The course required four years to complete, so none had gotten very far by the time war broke out.<sup>44</sup> The problem of training for the Medical Reserve Corps remained unsolved when the United States declared war.

Despite all these efforts, the Medical Reserve Corps and the National Guard lacked adequate numbers of trained physicians to supply the Army if war broke out. The Medical Reserve Corps had grown to 1,757 officers, plus 146 on active duty, compared to 443 Regular Army medical officers at the time. By 30 June 1917, less than three months after the declaration of war, this had grown to 9,223 officers in the Medical, Dental, and Veterinary Officers' Reserve Corps, most recently enrolled. The National Guard had experienced considerable difficulty with volunteers after activation for the Mexican campaign. This changed after the declaration of war when "medical officers and men poured into the service in a veritable flood." There were 1,267 medical, 250 dental, and 74 veterinary officers called into active

 <sup>43</sup> Ibid., 317-325. Marlon Ashford, "The Most Practicable Plan for the Organization,
 Training and Utilization of the Medical Officers of the Medical Reserve Corps of the United
 States Army and Navy and of the Medical Officers of the Officers' Reserve Corps of the
 United States Army, in Peace and War," Military Surgeon 40 (February 1917): 130. Henry
 C. Coe, "The Inactive Medical Reserve Corps in War," Military Surgeon 39 (August 1916):
 44 Henry C. Coe, "The Wellcome First Prize Essay, 1916," Military Surgeon 40 (February

<sup>&</sup>lt;sup>44</sup>Henry C. Coe, "The Wellcome First Prize Essay, 1916," *Military Surgeon* 40 (February 1917): 318-19. M. A. W. Shockley, "The Correspondence Course for Officers of the Medical Reserve Corps," *Military Surgeon* 38 (January 1916): 64-67.

<sup>&</sup>lt;sup>45</sup>Crossland and Currie, Twice the Citizen, 19.

<sup>&</sup>lt;sup>46</sup>The Surgeon General's Office, 82-83.

Federal service from the National Guard.<sup>47</sup> These numbers are small compared with the 61,844 officers (30,591 physicians) in the Medical Department at the Armistice, out of an estimated 115,500 American physicians in active practice at the time. The Reserve and National Guard provided a mechanism for commissioning applicants without resorting to contract surgeons as in the Spanish-American War.<sup>48</sup>

# MEDICAL LIAISON WITH THE COMBATANTS

Once World War I had started in Europe, the Surgeon General and other medical leaders tried to find out the lessons that the combatants had learned in field medical care. The War Department worked with the State Department to send observers to England, France, Germany, and Austria-Hungary. There was no medical corps officer sent to Germany, but medical officers went as part of the observation teams to the other combatants.<sup>49</sup>

Major J. H. Ford was the medical observer in Austria-Hungary. He remained with the Austrians along the Russian and Serbian fronts until 27 October 1915, when he returned to the United States. He was not replaced. He published his observations on the Austro-Hungarian Army in a well-illustrated article in the June 1917 *Military Surgeon*. Seven military observers went to France before the war, including two doctors, Lieutenant

<sup>50</sup>Joseph H. Ford, "The Sanitary Service of the Austro-Hungarian Army in Campaign," *Military Surgeon* 38 (June 1917): 645-65.

<sup>&</sup>lt;sup>47</sup>Ibid., 140.

<sup>&</sup>lt;sup>48</sup>Ibid., 83. "Our Resources in Medical Personnel," *Military Surgeon* 40 (February 1917): 437-40.

<sup>&</sup>lt;sup>49</sup>Sanford H. Wadhams and Arnold D. Tuttle, "Some of the Early Problems of the Medical Department, A.E.F.," *Military Surgeon* 45 (December 1919): 637-39. 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), 13-19 (Hereafter referred to as *Administration*, A.E.F.). U.S. War Department. "Report of the Surgeon General" *Annual Reports*, 1916. Vol. I, (Washington, D.C.: Government Printing Office, 1916), 472-73. U.S. War Department. "Report of the Surgeon General" *Annual Reports*, 1917. Vol. I, (Washington, D.C.: Government Printing Office, 1918), 640-41.

Colonels James R. Church and Sanford H. Wadhams. They found that the French were uncoöperative in showing them much of their medical system until after the United States severed diplomatic relations with Germany on 3 February 1917. Church wrote his observations on the French sanitary service in May 1917 for *Military Surgeon*.<sup>51</sup>

Three officers, Lieutenant Colonel Alfred E. Bradley, Major Clyde S. Ford, and Major W. J. L. Lyster, went to the British on 6 March 1916. They established a close relationship with the British and found them very open and helpful, observing conditions both in England and France.<sup>52</sup>

One unusual situation was that of Major Robert M. Culler who was granted a leave of absence to take charge of the hospital at Passy, France run by the French Benevolent Society. Major Culler went to France as a civilian; when the United States entered the war, he reverted to a duty status. The Surgeon General tried to get this status for other officers, but President Wilson refused, to avoid violating the United States' neutrality.<sup>53</sup>

# DEVELOPMENT OF MEDICAL DOCTRINE

The last area of reform for the Medical Department was the development of a doctrine for field operations. Before the Spanish-American War, the regulations had centered on the peacetime administration of medical units. The failings in that war, the increased emphasis on field exercises, and the experiences of the Europeans in World War I, drove the Army to develop and revise its medical doctrine. It published its doctrine in

<sup>53</sup> Administration A.E.F., 17-19.

<sup>&</sup>lt;sup>51</sup>James Robb Church, "Notes on the Organization of the French Sanitary Service," Military Surgeon 38 (May 1917): 531-48. Wadhams and Tuttle, "Early Problems," 637-39. Administration A.E.F., 14-19.

<sup>&</sup>lt;sup>52</sup>Wadhams and Tuttle, "Early Problems," 637-39. Administration A.E.F., 14-19. Lyster is better known for inventing the cloth water storage container that bears his name.

the Field Service Regulations and the Manual for the Medical Department. The editions of the Manual for the Medical Department before the Spanish-American War dealt only with post administration, not war at all. The 1898 edition contained only four paragraphs on duties in time of war. The Manual of 1900 added two paragraphs on the regimental hospital. By 1902, the Manual provided the sanitary organization of a division and the field hospitals and ambulances that supported it. This emphasis continued to the edition of 1916, which provided the medical organization for war that the A. E. F. used, based upon field hospitals, evacuation hospitals, and ambulance companies. These units filled the gaps from battalion aid station to the base hospital.<sup>54</sup>

The Medical Department developed a field service school at Fort

Leavenworth in 1910 to teach medical officers this doctrine. It taught other
aspects of medical practice, such as field sanitation, that were peculiar to the

Army. The field service school also started a correspondence school for line
officers in sanitary matters. The other service schools agreed with the

Medical Department that every tactical solution required plans for handling
the wounded.<sup>55</sup>

# SUMMARY

This organization gave the Medical Department a solid basis for providing medical services once the American Expeditionary Forces deployed. It was similar to the French and British systems, which allowed the United States forces to integrate medical care closely with its allies. The strain of war would force changes on the system, but the reforms generated in

<sup>&</sup>lt;sup>54</sup>The Surgeon General's Office, 63-65.

<sup>&</sup>lt;sup>55</sup>Ibid., 69.

response to the Spanish-American War provided the Medical Department a solid base on which to build. The experience gained in the mobilizations along the Mexican border allowed the Medical Department to solve some of the problems it would experience on a much larger scale in France. Finally, the foresight and dedication of members of the civilian medical community, working in close coöperation with the Medical Department and the American Red Cross, created a system for rapidly raising hospital units. When the A. E. F. arrived in France, the magnitude of the demands stressed the medical support. The organization and doctrine changed to meet these demands.