Prior to the Civil War, most medical care took place in the home. There were few public hospitals and only a handful of trained doctors. At the onset of the Civil War surgeons, doctors, and nurses were forced to adapt the system to the best of their ability. Despite their efforts, more soldiers succumbed to disease and infection than actual combat. However, out of this turmoil also came success. The field of nursing became a way for women to contribute to the war effort and in some cases obtain a salary. New hospital designs ensured a better survival rate for soldiers. The establishment of the ambulance corps made the transportation of wounded soldiers more efficient not only during the Civil War, but subsequent wars as well. Finally, the founding of aid societies by women and designed to provide supplies and comfort to wounded soldiers, led to the creation of the American Red Cross, which continues to provide humanitarian aid worldwide. Through the efforts of these courageous men and women, the field of medicine was able to make these significant advancements to cope with times of warfare.

**Group members:** Katie Kitner, Nate Reese, Jamie Heatherly, Vanessa Schneider, Allison Fignar, and Brittany Van Sciver
BITING THE BULLET: THE LEGACY OF CIVIL WAR MEDICINE

Prior to the Civil War, most medical care took place in the home. There were few public hospitals and only a handful of trained doctors. At the onset of the Civil War surgeons, doctors, and nurses were forced to adapt the system to the best of their ability. Despite their efforts, more soldiers succumbed to disease and infection than actual combat. However, out of this turmoil also came success. The field of nursing became a way for women to contribute to the war effort and in some cases obtain a salary. New hospital designs ensured a better survival rate for soldiers. The establishment of the ambulance corps made the transportation of wounded soldiers more efficient not only during the Civil War, but subsequent wars as well. Finally, the founding of aid societies by women and designed to provide supplies and comfort to wounded soldiers, led to the creation of the American Red Cross, which continues to provide humanitarian aid worldwide. Through the efforts of these courageous men and women, the field of medicine was able to make these significant advancements to cope with times of warfare.

Tools of the Trade
1. **Amputation Saw**: A saw used to cut through and separate sections of bone during an amputation.

2. **Trepanning Saw**: Tool used to scrape through the skull to treat health problems.

3. **Rongeur/Bone Forceps**: An instrument with a sharp, scooped edge used for gouging out bone to expose areas for operation.

4. **Tissue/Bandage Scissors**: Multi-purpose scissors used during medical procedures for everything from cutting away pieces of tissue to bandages.

5. **Gouging Bone Chisel**: Used for shaping and dividing sections of bone.

6. **Trephine Set**: A surgical instrument with a circular blade used to cut holes in bones, especially the skull.

7. **Tourniquet**: A compressing device used to apply pressure and restrict blood flow to a body part. This was used during amputation to control the amount of bleeding.

8. **Aneurysm Needles**: Used to close blood vessels and restrict blood flow to avoid excess bleeding.

9. **Scalpels**: A small and extremely sharp knife used in surgery.

10. **Amputation Knives**: Knives used to cut through skin and body tissue in amputation, having different sized and shaped blades depending on the technique of cutting being used and body part being removed.

**Diseases and Medicine**

The leading cause of death during the Civil War was disease. A soldier’s chances of survival were only 1 in 4. Surgeons, doctors, nurses were not aware of sanitation and in fact, the Civil War was known as a “field day for bacteria”. Most doctors used the same bloody knives and did not wash their hands or tools between surgeries. Commonly cured diseases of today like pneumonia and diarrhea took many lives, and other diseases like typhoid, dysentery, and yellow fever claimed even more. Diarrhea and dysentery were called “quickstep” and “alvine flux”, resulting in the deaths of 57,265 soldiers. Doctors used opium and a mercury substance, called “blue mass” to treat dysentery. Other treatments used were castor oil, camphor, turpentine, lead acetate, silver nitrate, quinine, and whiskey.

For some sicknesses mercury and arsenic were prescribed. Soldiers with pneumonia were usually treated by being bled, which many later died from. Malaria was also common, known as “ague”, “shakes”, or “intermittent fever”. Whiskey and quinine were the main treatments for this. In some cases patients were given too much quinine that their teeth became loose and they could not even eat.

75% of operations involved amputation of at least one limb. A typical amputation would consist of the doctor making an incision in through the muscle and skin down to the bone with his scalpel. He would then leave a flap of skin on one side. Then, he would take his bone saw and saw through the bone. Then the flap of skin would be pulled across and sewed with horsehair, silk, or cotton threads and the surgeon would leave a drainage hole. The stump would be covered with isinglass plaster, and bandaged. Doctors during the time used different flat objects like kitchen tables and doors for operating tables. Anesthesia was used about 95% of the time when available.
THE LEGACY OF CIVIL WAR MEDICINE

Rise of Hospitals

The hospital, as we know it today, did not exist at the outbreak of the Civil War. There were only a handful of formal institutions that provided medical care to those who needed it, but these places were found mostly in large cities. In addition, the majority of people had no desire to ever set foot inside a hospital. Medical care, up until this time, was often taken care of in the home. According to Glenna Schroeder-Lien, author of The Encyclopedia of Civil War Medicine, “Hospitals were designed to give the illusion of home care for those who had no home or were far away from it.” When the war started, and mass casualties created the need for more institutions to care for the wounded and convalescent, hospitals begin to make a rapid appearance. By the war’s end in 1865, there were over 155 hospitals in the United States, but this figure does not include the countless houses, barns, and churches that were utilized when hospitals could not be found. These hospitals were built in the pavilion style, which allowed proper ventilation in the hospital wards.

Creation of the Ambulance Corps

Moving the wounded soldiers off the battlefield proved to be a daunting task for the medical team. There was no system yet invented that could efficiently carry the wounded soldiers and ensure their survival upon arriving at the field hospital. Thus, in 1859, the Ambulance Corps was born. At first, the ambulance was a rickety two-wheeled device that jostled soldiers around mercilessly, but newer four-wheeled designs were soon employed. Dr. Jonathan Letterman was appointed the head of the Ambulance Corps in 1862, and he transformed the system into a more organized and efficient body, that was later employed in other major bouts of warfare, namely World War I.

Nursing as a Career

Florence Nightingale once said that hospital nurses “were generally those who were too old, too weak, too drunken, too dirty, too stolid, or too bad to do anything else.” One of the only means by which women could help in the war effort was through aid charities and nursing. Elizabeth Blackwell became the first women to get a doctorate in medical school in 1848. “By strained construction of certain paragraphs in the army regulations...positions, paid positions, were devised for them.”

Founding of the American Red Cross

In addition to the establishment of nursing as a career field for women, the societies that they established to carry out their duties also had major significance during and after the last shots had been fired in the Civil War. The United States Sanitary Commission had been established in 1861, in order to “improve the health and moral of the Union Army.” Female nurse, Clara Barton used her experiences working with the Sanitary Commission to establish the American Red Cross in 1888, an organization that has been providing medical services and humanitarian aid ever since its establishment.
MYTH OR FACT?

1. Doctors did not have access to anesthesia, so soldiers were forced to bite on a bullet during surgery.

→ FALSE: In 1842, Crawford Long was the first doctor to use anesthesia in surgery. He failed to get a patent for his discovery, however, which he calls “ether”. This design would later be modified and called “chloroform”.

2. Despite popular belief, amputations only amounted to 50% of all surgeries.

→ FALSE: Doctors only had minutes to determine the extent of a soldier’s injuries, so doctors typically amputated first, and asked questions later. 75% of all battlefield surgeries were amputations, with amounted to a 50% mortality rate.

3. More soldiers died from disease than actual battle.

→ TRUE: Over two-thirds of the 620,000 people, who died during the Civil War, died of disease resulting from their injuries. Of these, gangrene and infection were the most common killers.

4. Some of the medicines one could find in a hospital ambulance were mercury, arsenic, opium, and turpentine.

→ TRUE: Mercury was used for constipation, opium was used for diarrhea, and both turpentine and arsenic was used to purge the system if a soldier had diarrhea, which was the most common killer of all Civil War soldiers due to sanitary conditions.

5. Hospitals were easy to find during the Civil War, since there had always been a need for hospital care up to this time.

→ FALSE: Prior to the Civil War, there were hardly any formalized hospitals. One estimate from the early 1800’s states that there were only three major hospitals in the United States. This is because most doctoral care before this point had been taken care of at home. By the end of the Civil War, the number of hospitals had shot up to 155.

6. Doctors and surgeons during the Civil War lacked the technological inventions of the stethoscope, microscope, ophthalmoscope, and thermometer.

→ FALSE: All items were in existence; however, because of their efficiency and the number of casualties, the items were rarely used.

7. Civil War doctors lacked technical skills; lack of knowledge and training often resulted in death among patients.

→ FALSE: According to medscape.com which gives a review on Civil War Medicine: Challenges and Triumphs, Civil War doctors could “ligate a subclavian artery…with a 70% survival rate.” The subclavian artery is the artery that is located under the clavicle and transfers blood to the arms and head.
8. During the Civil War, 8,000 women became nurses and/or worked in hospitals, in camps, or on the battlefield.

→ FALSE: The number is much higher; over 30,000 women from all different classes, including slave women, found work as nurses, cooks, matrons, laundresses, and seamstresses.

IMAGES

http://www.archives.gov/research/civil-war/photos/images/civil-war-038.jpg Ward in the Carver General Hospital, Washington D.C., Courtesy of the National Archives

http://www.archives.gov/research/civil-war/photos/images/civil-war-194.jpg Clara Barton, female nurse and founder of the American Red Cross, Courtesy of the National Archives


http://history.amedd.army.mil/booksdocs/civil/gillet2/amedd_1818-1865_pic81.gif Mower General Hospital, the Office of Medical History, US Army

http://sherpaguides.com/georgia/civil_war/atlanta/Gen_stonewall_jackson_52.jpg Stonewall Jackson, Lee’s “right hand man”

http://antiquescientifica.com/bottle_Us_Army_Medical_Supplies_Jacob_Dunton.jpg Civil War chloroform bottle

http://www.dtsk8.org/6_8/8/Civil%20War%20Webpage-RS/bellnurse.jpg Nurse tending to convalescents

http://www.sonofthesouth.net/leefoundation/embalming-650.jpg

Civil War surgeon embalming a soldier

http://www.archives.gov/research/civil-war/photos/images/civil-war-037.jpg Ambulance drill, courtesy of the National Archives

SOURCES

www.archives.gov Pictures of the Civil War
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http://www.rootsweb.ancestry.com/~kylawren/LCM_CW_Diseases.htm

www.loc.gov Civil War Research Center

http://www.gettysburg.edu/library/gettdigital/civil_war/civilwar.htm The Civil War Era Collection, Gettysburg College


The *National Museum of Civil War Medicine*, Frederick, Maryland
**Biting the Bullet: the Legacy of Civil War Medicine**

The Civil War marked a time in American history in which the lives of soldiers were in the balance every day of battle. Both sides were equally shorthanded on supplies, and proper medical care was a luxury.

**Tools of the Trade**

An essential piece of the doctor’s supplies was his medical kit. Inside were scalpels, saws, bandages, a turnicate, and sutures. The Minie ball, a new form of cannon ball, caused the most damage to soldiers. After making contact with the skin, it would flatten, causing irreversible tissue damage. It is this weapon that resulted in the most amputative surgeries.

**Battlefield Hospitals**

The majority of hospitals were located right on the field of battle, because time was of the essence. Countless houses, barns, and churches were taken over and used as hospitals, because never before had there been such a need for mass medical care.

**A Field Day for Bacteria**

In a doctor’s medical chest, one could find the following medications:
- morphine
- quinine
- opium
- “blue mass” (mercury and chalk)
- turpentine
- camphor
- arsenic

Doctors did not yet have the information that would later prove most of these medications to be poisonous. The most common killer was diarrhea. Next in line were malaria, pneumonia, and yellow fever. As a result of unsanitary conditions in the camps, as well as some hospitals, a soldier’s chance of surviving was only 1 in 4.

**Lasting Legacies**

The Civil War marked a new change in the way the field of medicine was approached in regards to warfare. One of the major developments of this time period was the “pavilion style hospital”, which allowed for proper ventilation. Another advancement was the ambulance system, headed by Dr.
Jonathan Letterman. This system allowed the transport of many soldiers in an efficient and timely manner, with rules even dictating who was to step off the ambulance first.

During the Civil War, women found a public role in helping to raise money and supplies for the army through fairs, as well as in the field of nursing. Eventually this would become a paid position. Finally, through the efforts of several women, the organizations that they had founded to raise supplies for the war effort, led to the creation of the American Red Cross, which has remained a humanitarian aid organization ever since.

This timeline shows just a few examples of medical developments throughout history, and where the Civil War fits into this context. Although no major breakthroughs in medical knowledge occurred during the Civil War, several developments such as hospitals, the ambulance system, and the field of nursing occurred during this time.

### Timeline of Medical Advancements

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1796</td>
<td>Edward Jenner develops vaccine for small pox</td>
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<tr>
<td>1816</td>
<td>Rene Laennec invents the stethoscope</td>
</tr>
<tr>
<td>1842</td>
<td>Crawford Long uses ether as an anesthetic</td>
</tr>
<tr>
<td>1861</td>
<td>Women’s Central Association of Relief is absorbed by the United States Sanitary Commission.</td>
</tr>
<tr>
<td>1862</td>
<td>Medicine wagon designed by Dr. Jonathan Letterman, thereby establishing the Ambulance Corps</td>
</tr>
<tr>
<td>1867</td>
<td>Dr. Joseph Lister publishes information on antiseptics</td>
</tr>
<tr>
<td>1888</td>
<td>Clara Barton founds the American Red Cross</td>
</tr>
<tr>
<td>1900</td>
<td>Felix Hoffman develops aspirin</td>
</tr>
<tr>
<td>1928</td>
<td>Penicillin is discovered by Sir Alexander Fleming</td>
</tr>
</tbody>
</table>

**Further Reading or Research:**


The National Museum of Civil War Medicine, Frederick, Maryland

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