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Mercy Street

The PBS Civil War Hospital Special Thoughts, Observations & Interpretations On the Second Season in 2017

by

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Some Background

The Public Broadcasting System (PBS) aired the six-part series *Mercy Street* during January and February 2016. See this web site as an example for information <http://www.pbs.org/mercy-street/about/>. Following that series, I wrote a paper of thoughts and observations on the medical aspects of *Mercy Street*. I was prompted to do that, in part, because of the similarities between the main fictional medical character, Dr. Jed Foster, of *Mercy Street*, and the real life 19th century physician and Civil War surgeon Dr. Edward Stonestreet of Rockville, Maryland.

Dr. Edward Stonestreet (1830-1903) practiced medicine successfully and engaged in a locally distinguished medical career as a community and family physician, public servant, Montgomery County Medical Society (Maryland) founder and leader, public health officer and promoter, and humanitarian. His focus on clinical medicine and his medical education in the European tradition, at the University of Maryland School of Medicine (class of 1852), prepared him for a career and medical practice that spanned nearly 52 years, from 1852 until his death in 1903. That education also provided him the skills that made him an attractive choice for providing medical and surgical services to the U.S. Army during the Civil War.

During September 1862 – June 1863, Dr. Stonestreet served as Acting Assistant Surgeon (Contract Surgeon) with the U.S. Army. He treated the “living wounded” from Antietam during latter 1862 in a temporary Army hospital in Rockville, MD. During early and mid-1863, he

treated the ill soldiers of Company M of the 6th Michigan Cavalry Regiment, one of four regiments of the Michigan Brigade which distinguished itself at Gettysburg. Company M was in the area of Rockville, Maryland, when Dr. Stonestreet served them.

Dr. Stonestreet shares some real life and professional experiences with the fictitious Dr. Jedediah Foster. Both doctors came from well-to-do families, which held slaves. Both Dr. Stonestreet and Dr. Foster were Union supporters, and U.S. Army surgeons, and did not condone slavery. Dr. Stonestreet's father was Clerk of the Montgomery County Court. Both families were educated and successful. The Stonestreet family came to America, from Sussex, England, in the 1660s. Both doctors were trained at the University of Maryland School of Medicine, a progressive medical school designed and operated in the European tradition. It was the fifth medical school in the U.S., opening in 1812. Both doctors served the U.S. Army during 1862 as contract surgeons in temporary hospitals in the Washington, DC, area. This synchrony suggests that *Mercy Street* has some real basis in fact about some of the doctors serving during the Civil War. This comparison has been written and published in the Montgomery County Historical Society's newsletter, *History Matters*, Spring 2016 issue

The success of the 2016 series resulted in a second season of six more episodes during January, February, and March 2017. I here continue my observations and interpretations of the 19th century and Civil War medical aspects of *Mercy Street*. During both annual series, the show depicts, almost in passing, many aspects of Civil War medicine and medical care, with very little explanation or follow up. Examples are the mentioning of malingering, use of a clinical thermometer, use of a microscope in diagnosis, electropathy, use of a field tourniquet, prosthetics or artificial limbs, and the Hammond museum. I call these out in my observations and offer some historical explanations and interpretations of their roles in the medical care of Civil War soldiers.

Thoughts, Observations & Notes

The observations below are extracted from my notes taken during the airing of the series in 2017. At the end of this document are the references I used in writing this paper. Many of them are easy to read and do not require a medical degree to do so. They can serve as further reading for those interested. Also of interest, in learning about Civil War medicine and 19th century medicine, is Dr. Stonestreet's one room medical office, which he used from 1852 – 1903. It now is preserved as a museum in Rockville, Maryland, the **Stonestreet Museum of 19th Century Medicine**, owned and curated by the Montgomery County Historical Society.

This 2017 series continues to offer information, some not generally known by the public, which debunks the notion that Civil War physicians and surgeons were incompetent “saw bones” and that their medical care was primitive. The practice of medicine and surgery were entering a new phase, partly based on the experiences during the Civil War, plus the advances in science that came with latter half of the 19th century. *Mercy Street's* Dr. Jed Foster appears to represent the medical community of his era as it was adjusting to new ideas, therapies, and medical procedures.

Mercy Street 2017 Episode 1, January 22

This first episode of the 2017 season offered some interesting and tense medical situations, including abdominal surgery and repair of the intestines, a blood transfusion, and the beginnings of what appears to be a smallpox contagion event.

The episode opened with Nurse Mary Phinney offering to write a letter home to the wife of a soldier, a private, who died in the hospital. Civil War nurses often took on the letter writing duty to families of wounded soldiers or those who died. Some of the wounded soldiers could not hold pen and paper, and some were illiterate, so the nurses wrote down what the soldiers dictated. When letters came from home to the soldiers in the hospitals, the nurses often read the letters to them. Nurse Phinney also insisted on maintaining sanitary conditions in the hospital.

Abdominal Surgery & Repair of Intestine. In this episode, the hospital steward was attacked and stabbed in the lower abdomen, resulting in a nasty wound and the piercing of his intestine. Dr. Foster questioned the Army surgeon who led the surgery on which procedure he would use for suturing the wound. It was not clear that the surgeon understood Foster. Before the surgery began, Dr. Foster ordered a bromide for the patient. Various bromide compounds were used as sedatives during the War.

The surgeons operated and found the nicked intestine. They pulled it out, sutured it, and placed it back into the abdominal cavity. Fecal matter was seen in the cavity and it was rinsed or irrigated with water. It appeared that the surgical wound opening of the abdomen may have been larger than the actual knife wound. It was common during the War for the original incision to be enlarged so that the intestine could be repaired. This was called a “laparotomy”, making a new abdominal incision. During this procedure, general anesthesia was used. Dr. Foster initially requested chloroform, but it appears that ether was used. The patient, under anesthesia, moaned during the surgery and appeared to awaken slightly during the surgery. More ether was administered. It was common for patients to awaken slightly, or not to be fully under the influence of anesthesia, especially ether, during surgery. Anesthesia was administered so that the patient was just “insensible”, and not totally under the effects of the anesthesia, which could be dangerous or even fatal. So, insensibility was a light stage or mild unconsciousness that would wear off after 15 minutes or so. If the patient awakened, more anesthesia was administered. It was the moaning, and moving, of patients on the operating table that led people, predominantly other soldiers, to believe that the patient was awake during surgery, while those “old sawbone” doctors operated. Generally, the patients calmed and became insensible and lethargic after the anesthesia was administered and they were more under its affect. The instrument that the surgeons used to administer the anesthesia was a copper ether cone. It had an opening at the top into which a piece of cloth or a bandage was placed, onto which the liquid ether or chloroform was dripped. It then was placed over the patient’s face for him to inhale the volatilized liquid.

Blood Transfusion. The same patient, the hospital steward, was attacked for a second time and his throat was slashed. He lost enough blood that Dr. Foster decided to try a blood transfusion. His throat wound was sutured. The transfusion appeared to be a direct person-to-person procedure, which would infuse blood from a healthy donor’s artery into the patient’s vein. The

patient lived. According to Civil War medical history, just two transfusions were attempted using the techniques of a famous French physician. A syringe was used to infuse between 2 and 16 ounces of blood into the two patients. Both survived the transfusion, even in the absence of knowledge about sterility and blood types. Some luck may have been involved. Dr. Foster may have suggested the transfusion from his experience in France. He received medical training in Paris and may have been familiar with the transfusion procedure. During the War, Army surgeons were willing to apply the latest in medical knowledge, and even to try unproved techniques in order to save lives.

Smallpox Outbreak. An outbreak of smallpox appears to have occurred at the hospital, especially among the black hospital workers. Black Army troops and black workers suffered disproportionately from small pox, with case incidence being about 7-9 times that of white troops. When Nurse Phinney was asked about the vaccination for smallpox of the hospital staff, she hesitated and fumbled in her response, either not knowing the answer or hedging the answer that vaccinations had not occurred. The case fatality rate of smallpox was 20% to 40% among the Army troops who contracted it. The Army did try to vaccinate against it, but it was not always done or not always successful. When done properly and early in a soldier's Army career, vaccination was reasonably successful in preventing smallpox. Vaccination was done using cowpox materials.

Smallpox outbreaks were treated by isolation or quarantine of those infected. Sometimes separate hospital units were established to handle the patients. Those quarantine units sometimes were referred to as "pest houses." In *Mercy Street*, a separate outside tent arrangement was set up to house those who had the disease. Nurse Phinney was attending those patients and may have contracted the disease. While the medical treatment and handling of the smallpox has not been displayed yet, except for the isolation, it was typically handled by the use of cleanliness, disinfection, and vaccination as preventive measures. No treatment existed for smallpox, but once contracted, my text book, *Civil War Medicine: Challenges and Triumphs* (Bollet, 2002) reiterated "...the standard therapy used for all diseases: open the bowels and give an emetic, if there is much nausea, 'to assist in freely unloading the stomach,' Dover's powders (which contained opium) [and ipecac] for restlessness and insomnia, and 'quinine, iron, wine egg-nogg and nourishing diet.'" The skin lesions often became infected and sometimes were treated locally with the use of iodine and bromine, which would have been reasonable antiseptics at that time. During the latter days of the War, the general hospitals were treating infections, such as hospital gangrene, with tincture of iodine (iodine in alcohol), solutions of chlorine and bromine, nitric acid, and carbolic acid. These were effective antiseptics used by the surgeons, even though they did not understand the concept of microorganisms and bacteria as the cause of the infection and contagion they observed and were treating.

Mercy Street 2017 Episode 2, January 29

Episode 2 continued with the hospital and staff engaged in medical cases and treatments common in that time (small pox, typhoid, and the possibility of malingering), as well as some new (electropathy) and controversial medical matters (phrenology). Army surgeons were willing

to try anything, new, untried, or controversial, in order to save lives. That could not necessarily have been done in civilian medical practice.

Mercy Street continues to display medical conditions and practices during the Civil War that are not generally known to the public today. It shows the tension among the medical staff and their disagreements as to treatments to be used. Healing is offered to patients, while others die of their conditions. The cause of using current medical practices and procedures is challenged by some, and defended by others. One of the Army surgeons, Dr. Hale, was asked by the new Chief Surgeon if he had taken the Army medical exam for surgeons. He had not, so the Chief stated that he will be required to. During the early days of the War, the Army had some difficulty in finding physicians who were qualified to conduct the medical practices needed during war time. So, a medical examination was instituted for new or prospective Army surgeons, who must pass the exam in order to demonstrate their knowledge and be taken into service by the Medical Department.

Small Pox & Typhoid. In Episode 1, Nurse Phinney appeared to contract the smallpox that was present among the Negro workers whom she was attending. She was put into isolation, a standard practice for attempting to stop the spread of contagion. Phinney developed a body rash, cough, sweat, broke out in fever, and was lethargic, fainting in Episode 2. Dr. Foster recognized her condition as typhoid fever and not smallpox, and stated that she had “heat rash”. Other Army surgeons disagreed with Foster’s diagnosis. Dr. Bollet’s *Civil War Medicine* states, “Patients with severe typhoid experience fever and generalized malaise...usually develop transient red skin lesions called ‘rose spots’ and have diminished mental function. Typhoid can also cause bronchitis, leading to pneumonia.” So, Nurse Phinney’s symptoms appear to be consistent with this.

Nurse Phinney became so ill that she fainted and had a fever so high that Dr. Foster ordered that she be placed into an ice bath to bring down the body temperature. He also ordered that a thermometer be used to monitor Phinney’s condition. Thermometry was known during the Civil War era, but not extensively used by Army surgeons, perhaps because not many thermometers were available. *Antique Medical Instruments* (Wilbur, 2008) states that thermometers were large and cumbersome to use, some being 10 to 12 inches long. They were curved and placed under the arm. Use of thermometers to understand body heat, especially in disease conditions, became more clinical and more widely used in the 1870s and 1880s, based on research performed in Europe.

There were no effective treatments for typhoid then. It often was treated using analgesics (for pain) and quinine for fever. Dr. Shaadt’s *Civil War Medicine-An Illustrated History* states that typhoid also was treated using medicinals to purge the body of irritating substances, as well as with cold applications, sponge baths with water or water and alcohol, isolation, bedrest and liquid or bland diets. The medical community understood that survivors of typhoid fever had acquired an immunity from further attacks. Acquired immunity among Civil War soldiers caused the incidence of the disease to decrease substantially as the War progressed.

Typhoid fever is an intestinal diarrheal illness caused by food and water fecally contaminated with the *Salmonella* bacteria, which the medical community of the Civil War era did not fully understand. Such tainted food and water often was widespread in Army camps, causing epidemics. Typhoid was especially prevalent during the early days of the War. During the War, overall, more than 75,000 cases of typhoid were diagnosed, with an overall death rate of about 36%. So, will the Mercy Street Hospital deal with potentially contaminated food and water? Is the smallpox outbreak really typhoid?

Electropathy. A soldier, from Concord, Massachusetts, was being treated by the hospital staff who could not extend his leg or flex his foot. They tried applying electromagnetism to the leg, to revitalize the muscles, using electrodes from a device, an exilerator, which appeared to have been cranked manually to produce the electricity. This was a novel and radical approach which some of the surgeons questioned. One surgeon thought that the soldier might be a malingerer, feigning illness in order to avoid duty, and Army service. Dr. Foster noted that electropathy was used in Paris, where he may have witnessed it during his medical training there. He noted that French medical methods often were considered more advanced than those in the U.S. Foster approved of its use, but stated while recognizing that the soldier patient may actually have had some mental issues. Electricity was used by the medical community in the 19th century for treating nervous conditions, i.e. mental illness. In this case, the soldier regained feeling and movement in his leg and foot. Dr. Foster suggested that he just needed attention and treating, what we might call “TLC” today. The soldier did like being attended by Nurse Phinney.

Malingering. Malingering was the term used by the Army Medical Departments of both the Union and the Confederacy for soldiers feigning disease, illness or injury, in order to avoid duty and combat, and to secure a Medical Certificate of Discharge from service, along with a pension. The *Mercy Street* doctors mentioned malingering, in passing, about the condition of one of the soldier patients in the hospital. Sometimes it was difficult for the surgeons to detect malingering vs. real medical conditions. Cunningham’s book, *Doctors in Gray*, states, “Some men suffered so much from ‘battlesickness’ and ‘shell fever’ that they shot themselves in the hand or prevented their wounds from healing so as to escape service.” Recall that in the very first episode of 2016, a soldier was stated to be suffering from what was termed “soldier’s heart”, with its palpitations from stress and anxiety. Some of those cases, as well as cases of nerves or nervousness were considered, or thought to be, malingering, but may have been the early stages of what we know today as PTSD. The U.S. Army’s Civil War medical guidebook, *A Manual of Instructions for Enlisting and Discharging Soldiers* (Bartholow, 1863), has an entire chapter devoted to the medical conditions of malingering, and its detection. It stated, “No malingering should be discharged unless all known means of inducing him ‘to give in’ have failed...” That included a wide array of medical examinations and tests. As the War progressed, veteran Army surgeons were wary of malingering and adept at detecting it.

Phrenology. Nurse Phinney was summoned by the Chief Surgeon, Major McBirney, who examined her using phrenology techniques. Phrenology was not a cure for anything, but a means to examine and interpret the mind and body. It was thought that the brain had 37 “faculties” which could be “read” on the cranium at the site (of the brain) where each faculty was located.

So, Maj. McBirney examined and felt Nurse Phinney's head and then offered some diagnoses of her constitution and capabilities. Phrenology was thought by many to be quackery, not medicine. It is interesting that the Chief Surgeon subscribes to phrenology.

Mercy Street 2017 Episode 3

Episode 3 continues to demonstrate the use of a clinical thermometer while treating Nurse Phinney. A case of gonorrhea is treated in the field, and the cauterization of a nasty wound is undertaken. *Mercy Street* continues to introduce aspects of Civil War medicine and medical care in short and quick snippets, as were the brief mentions of malingering. One must pay attention to what is said quickly and not just to what is seen in the major visual scenes.

Nurse Phinney continued to display symptoms of illness which Dr. Foster diagnosed as typhoid. Foster continued to monitor her fever using a large angled thermometer placed under her arm. Phinney developed hallucinations and thought she saw her father.

Gonorrhea. Dr. Foster was ordered to go into the field and treat the troops encamped south of Alexandria. It appeared to be in the spring or early summer of 1862 during the Peninsula Campaign that occurred during March – July on the peninsula between the York and James Rivers. In the encampment, one of the general officers asks Dr. Foster to examine his urethral discharge. He had been suffering with pain upon “passing water” (urination). Foster determines that the general had gonorrhea, or “clap”, a diagnosis that was used for all forms of urethral discharge due to sexually transmitted diseases, including syphilis. In the general's tent, Dr. Foster treats the case by using a catheter, one that appeared to be the older style of curved rigid catheter and not the later 19th century version that was an articulated flexible silver catheter. The rigid version was very painful to insert and use, as evidenced by the general's reaction in this episode. Foster treated the patient by injecting a solution of silver nitrate (or nitrate of silver as it was called) through the catheter. That medicinal was an astringent, used as a coagulant to stop secretions and bleeding. There was no real effective treatment or cure for gonorrhea or syphilis during the time of the Civil War. Often these diseases were treated with oral remedies and pills that did little to affect any cure.

Cauterizing a Wound. The free black man with medical experience, Samuel Diggs, helps a white man who was wounded in the lower body with the femoral vein bleeding. Diggs determined that it was a vein and not an artery since there was no pulsations in the bleeding. Diggs cauterizes the wound area with a heated instrument and then cauterizes the larger area with hot charcoal to seal the area and stop the bleeding entirely. Cauterizing of a large wound that is bleeding was a serious matter. Smaller wounds with minor bleeding could be cauterized with compounds such as persulfate of iron, alum, copper sulfate, and silver nitrate. Often the dressings or compresses were saturated with such styptics or astringents.

Mercy Street 2017 Episode 4

Internal Parasites & Use of Microscopy. Dr. Foster was attending a soldier with a minor laceration. He noticed something unusual that he wanted to study further. So, Foster took a sample of bloody sputum from the soldier's mouth and examined it under a microscope,

determining that the soldier had a parasitic infection. Oil of turpentine and magnesia were ordered to treat the patient. That was part of the standard treatment at the time. Civil War soldiers became infested with many types of internal and intestinal parasites, including tapeworms, round worms, hookworms, and the lesser known pinworms and whipworms.

Microscopy was a technique used frequently by Civil War surgeons to make diagnoses, and even to study the pathology of diseases. Microscopic examination of urine, for example, was done frequently and with considerable skill according to Bollet's *Civil War Medicine*. It was used in the general hospitals and field hospitals. Bollet writes "An 1864 article in *American Medical Times*, authored by a Civil War physician, documents the use of the microscope in a clinical study of 100 patients with measles done at a Chattanooga field hospital." Bollet states further "Civil War records clearly refute the erroneous assertion that Civil War physicians lagged behind their European contemporaries in microscopy." Without much fanfare or onscreen detail, *Mercy Street* is demonstrating that American Civil War physicians and surgeons were knowledgeable in the current medical practices of their era.

Field Tourniquet Use. The hospital Chaplain and nurse Miss Green ventured out into the countryside of Germantown in order to pick up several wounded soldiers and transport them back to the hospital. One of the soldiers they found on the battlefield was bleeding profusely, so Miss Green and the Chaplain devised and made a field tourniquet from the Chaplain's neck tie and a stick. They tied the neck tie around the wounded part, inserted the stick under and through the tie, then they twisted it until the tie was tight and the bleeding stopped. The medical community of the Civil War era understood that bleeding must be stopped. One of the reasons for amputating damaged limbs was to stop severe bleeding and save the soldier's life. Civil War surgeon's medical instrument kits, or amputation kits, contained tourniquets. Recall that the surgeons used a tourniquet during the amputation of a soldier's lower leg in the 2016 series.

Hammond Museum. Dr. Hale and Samuel Diggs performed an autopsy on a soldier who had died from a gunshot. They determined that the rifle ball had split into two parts in the soldier's body and thus killed him. Hale then, almost in passing, stated that the report on this autopsy should be sent to the Hammond Museum. In the succeeding Episode 5, Hale's report apparently is received well by the Museum.

U.S. Army Surgeon General William A. Hammond had a medical background as a researcher and medical author. He brought those skills and needs to the Army Medical Department. Hammond recognized the need and the value of collecting data, information, and specimens for research purposes. In 1862, Hammond appointed several capable physicians to establish and create a medical museum where research could be conducted on the medical and surgical problems of the war. That museum eventually evolved into the Armed Forces Institute of Pathology, and more recently the National Museum of Health and Medicine. See the Museum's web site at <http://www.medicalmuseum.mil> for more information. The Army Medical Museum established by Hammond helped to bring together the medical experience of the Civil War and contribute to the *Medical and Surgical History of the War of the Rebellion*, published in six

volumes between 1870 and 1888. That publication was regarded by the European medical community as America's first major contribution to academic medicine.

Female Soldiers. This episode focused on a young woman who posed as a male soldier. She stated that she did so in order to serve her cause and do her part and to do some good. During the Civil War about 400 women served in the Union Army disguised as men. This occurred mostly early in the war when the physical examinations sometimes were not too rigorous, and when the army needed recruits. During that time, men with many infirmities and disabilities sometimes were admitted to the army due to the lack of thorough examinations. Bartholow's 1863 *Manual* remedied that and provided specific instructions to examining surgeons so that "A man enlisted or drafted should have the health and stamina for immediate service." Further, it was stated that "...the surgeon should inform the man [or recruit or volunteer] that the practice of examining men stripped is invariable, that the ordeal will not last long, and that his secrets are kept inviolate..."

Mercy Street 2017 Episode 5

Competency Test for Army Surgeons. Dr. Hale took the Army medical examination for competency and "passed with flying colors." During the early days of the War, the Army had some difficulty in finding physicians with the knowledge and experience needed for the medical treatment and care of its soldiers. The large numbers of soldiers spreading and contracting illness, along with the vast numbers of severely wounded were medical conditions not experienced by most civilian physicians. So, the Union Army reorganized the medical boards of examination and required higher standards of achievement for those being examined. Testing and examination occurred for physicians drafted into the Army, as well as for volunteer physicians and contract surgeons. Sometimes the boards and the examination processes recommended the discharge of those who did not pass. This examination process helped the Army to find and retain qualified physicians.

Anesthesia and Death. The use of general anesthesia is discussed in earlier segments of these observations. Anesthesia was used nearly universally by Army surgeons from the beginnings of the war. With careful use, they were very effective in calming patients and assisting surgeons in being deliberate and fast in their work. In this episode of Mercy Street, a patient under Dr. Hale's care died before surgery could be performed. The patient had been anesthetized, apparently with chloroform, which may have been the reason for the death. Medical records show that During the Civil War, the recorded death rate from chloroform was 0.5%, and that from ether was 0.3%. The use of general anesthesia did have risks which were very low in comparison with the benefits of their use.

Prostheses. Toward the close of this episode, Samuel Diggs is seen fashioning an artificial leg for Dr. Foster's brother, who was amputated in the 2016 season series. Diggs mentions a soldier named Hanger, the first Civil War amputee. James Edward Hanger, whose left leg was amputated in June 1861, designed and built his own prosthetic leg with hinges at both the knee and ankle. Hanger eventually designed and manufactured many prostheses for War amputees, both during and after the War. The Hanger, Inc., company still is the business of helping

amputees with prostheses. The tens of thousands of Civil War amputees necessitated the creation of methods of treatment to help the patients with their quality of life after amputation. Due to the large numbers of prosthetic devices needed, the mechanics of their design and manufacture advanced significantly, along with the art and science of their design. The needs of the Civil War contributed significantly to the improvement and advancement of prostheses in America.

Fresh Dressings & Dry Lint. In a brief scene of attending a wounded soldier, a nurse and doctor talked about the nurse using fresh dressings and dry lint when changing the bandages. Bollet's *Civil War Medicine* notes that "If manpower permitted, dressings were changed daily in the initial period after the injury." Lint was used to pack and dress the wounds, to promote blood clotting, and to help stop bleeding. It was one of the most universally used dressing materials. Lint generally was made by scraping old linen with a knife. Lint made by machine was called "patent lint". Neither the bandage dressings nor the lint were sterile. They would be clean, however, and clean was an improvement.

Mercy Street 2017 Episode 6

Prosthesis. Dr. Foster arranged for the free African American Samuel Diggs to attend a medical school. During their travel toward the school, they stopped at Foster's home where Foster received a hearty welcome. Diggs brought along the artificial left leg that he fashioned for Foster's brother. The leg had metal hinges at the knee and the ankle, and it had the shape of an actual lower leg. It is interesting, and historically correct, for the brother to have been wounded in the left leg. During the Civil War, about 71% of gunshot wounds were to the upper and lower extremities, and a majority of gunshot wound injuries were to the left side of the body. When a soldier raised and aimed his rifle to fire it, his left side was exposed to incoming fire, thus many left side wounds.

Childbirth and Eclampsia.

Dr. Foster and Samuel Diggs assist a slave woman at the Foster home with labor and delivery. The woman began to have headaches and severe tremors. Foster stated that she had eclampsia and that the unborn child needed to be assisted in delivery right then or both mother and child could be in real danger. My 1979 *Blackiston's Pocket Medical Dictionary* (McGraw-Hill Book Publishing Company) describes eclampsia as "A disease occurring in the latter half of pregnancy...characterized by an acute elevation of blood pressure...convulsions, and sometimes coma." During Dr. Foster's time of the Civil War, Dunglison's 1860 *Medical Lexicon, A Dictionary of Medical Science* merely defined eclampsia as "Convulsions of pregnant and parturient [in labor] women." So, Foster asked Diggs to make a device to assist the child through the birth canal during labor. The resourceful Diggs fashioned a device from a leather strap and a piece of wood that resembled one half of a labor forceps. It appeared that the strap may have been placed around the child head to assist it through the birth canal, as might be done using forceps. The child was delivered successfully, but had fluid (presumably amniotic fluid) in its

esophagus, which Dr. Foster sucked out so that the baby could breath. Mother and child both appeared to have gotten through the ordeal thanks to Foster and Diggs.

Nurse Mary Phinney's Condition & Mercurial Medications.

At the close of this episode, Dr. Foster finds Nurse Phinney, who still was suffering from typhoid fever. Her treatment had included the administration of calomel, a mercurous chloride compound. Calomel was one of the standard treatments diarrhea, dysentery and typhoid fever. The use of mercurial compounds as medications was challenged by Surgeon General William Hammond, who understood that mercury was too toxic and offered no medical benefit. So, Hammond banned almost all such compounds from use by Army surgeons. It was a controversial, but correct, undertaking by Hammond. Dr. Foster appeared to have understood the deleterious effects of calomel and mercury and he stopped its use in treating Phinney's typhoid case, and also called for better ventilation of her hospital room. Foster assured Phinney that she would be around to see and witness the world as changed by the Civil War era. So, alas, a season three seems doubtful.

Some Summary Thoughts & Observations

The two seasons of *Mercy Street* have covered many medical and surgical matters and issues. Some are readily recognizable by the public as Civil War medical issues such as amputation, nursing, small pox, and gangrene. Others are lesser recognized or known not at all, such as the use of general anesthesia, prostheses, use of microscopes, and the Hammond Museum (the Army Medical Museum). The series has shown the older, current (at the time of the Civil War), and newer medical techniques and understandings, such as:

- the older medical remedies and conditions that were controversial and less understood by the medical staff, like phrenology, malingering, and soldier's heart;
- the medical techniques, matters, and understandings current to the time, like the use of morphine for pain, general anesthesia for surgery, trephination, and the diseases gonorrhoea and gangrene, and small pox and typhoid fever; and
- the new and state-of-the art medical and surgical techniques of that time, like the use of microscopes, prostheses, nursing, blood transfusions, electropathy, competency testing for military doctors, and the gathering of medical and surgical data by use of the Army Medical Museum.

Often in the series, the lesser known matters are not dwelled on or explained. They are shown or stated while the plot moves on. These matters, then, become teaching and interpretative moments for historical interpreters and their historical organizations and museums. *Mercy Street* is bringing attention to the medical aspects of the Civil War and opening new avenues for history education and interpretation.

Thus far in the two-season series, the main Civil War medical and surgical focus has been within the temporary military hospital housed in a large hotel in the City of Alexandria. Many public and private buildings and structures were taken over by the Army Medical Department during the War and used as temporary hospitals. Those included hotels, government buildings, churches, homes, barns, and other public structures and park areas. Dr. Stonestreet served in a

temporary U.S. Army hospital housed in the buildings and on the grounds of the Montgomery County Courthouse in Rockville, from latter September 1862 to late January 1863. During and following the Battles of South Mountain and Antietam in September 1862, the City of Frederick, Maryland, became what the *Philadelphia Inquirer* newspaper called “one vast hospital”. Twenty-seven buildings and two camp sites were used as Army hospitals during the period of mid-September 1862 into January 1863. This is detailed and interpreted in Terry Reimer’s book by the same name, *One Vast Hospital*. It appears that the wounded and healing soldiers who were being transferred from Frederick to Army hospitals in Washington, DC, following the Battle of Antietam, in September, 1862, were the patients whom Dr. Stonestreet attended in Rockville.

A listing of medical and surgical matters covered (or uncovered) by the *Mercy Street* series provides a brief but broad sweep of what occurred during the Civil War. Glossaries of Civil War medical terms are contained in Reimer’s book as well as in Bartholow’s 1863 Army *Manual*.

Major Medical Issues Displayed

- Amputations
- Small Pox & typhoid fever
- Use of general anesthesia
- Temporary hospital in a public building (a hotel)
- Vaccination for small pox, or lack of it, with its drastic outcomes

Lesser Recognized Medical Matters

- Soldier’s heart & nervous disorders (forerunner of PTSD)
- Malingering
- Dorothea Dix & nursing
- Nurses, nutrition, & letter writing/reading
- Contract surgeons
- Prostheses

Diseases & Medical Conditions Encountered

- Small Pox & typhoid fever
- Erysipelas
- Gangrene
- Parasitic infection
- Prostitution and controlling STDs of that time
- Gonorrhea
- Soldier’s heart
- Malingering
- Eclampsia
- Amputated limbs

Medical & Surgical Techniques Used

- Amputation
- Trephination
- Cauterization
- Blood transfusion

- Abdominal surgery
- Caesarian
- Fresh dressings & lint
- Ventilation of hospital rooms
- Electropathy
- Ice bath to lower body fever
- Isolation & quarantine of small pox patients
- Urinary tract catheter

Instruments Used

- Amputation instruments
- Ether cone, copper
- Woods's syringe
- Tenaculum
- Tourniquet, as a surgical instrument, and one devised in the field
- Microscope
- Silk sutures
- Exilerator
- Trepine
- Urinary catheter

Medicinals Used

- Chloroform & ether
- Morphine
- Permanganate potass
- Silver nitrate
- Oil of turpentine
- Pennyroyal
- Bromide as a sedative
- Dover's Powders (opium & ipecac)
- Calomel

Other Medically Related Matters

- Female soldiers & Army physical exams (or not)
- Hammond Museum
- Competency tests for doctors
- Phrenology
- Medical education in U.S. (UMD) & Europe (Paris)
- Medical cadets
- Hospital stewards
- Medical Inspectors

References Used & Recommended Further Reading on Civil War Medicine Related to *Mercy Street*

Consult the Montgomery History 2016 paper on *Mercy Street* for a full list of relevant reference sources and materials for further reading. The following were used for this interpretation of the 2017 season series.

Adams, George Worthington. *Doctors in Blue: the Medical History of the Union Army in the Civil War*. Press of Morningside, Dayton, Ohio. 1985.

Bartholow, Roberts, M.D. *A Manual of Instructions for Enlisting and Discharging Soldiers, With Special Reference to the Medical Examination of Recruits, and the Detection of disqualifying and Feigned Diseases*. U.S. Army. 1863. This manual was adopted by the Army Surgeon General and issued to all medical officers. It was published for the Army by J.B. Lippincott & Company, Philadelphia. My copy of this manual was reprinted in 1991 by Norman Publishing, San Francisco. I purchased it in the Museum Shop at the National Museum of Civil War Medicine, Frederick, Maryland. As a matter of note, Dr. Roberts Bartholow was a classmate of Edward Stonestreet from the Class of 1852, University of Maryland School of Medicine.

Bollet, Alfred Jay, M.D. *Civil War Medicine: Challenges and Triumphs*. Galen Press, Ltd., Tucson, Arizona. 2002. This book takes a very broad and detailed look at Civil War medical care. The author, a medical doctor, uses modern scientific and statistical approaches to analyzing the original data for the War. It is written in language that does not require a medical degree to understand. This is the best and most thorough reference source I have found.

Cunningham, H.H. *Doctors in Gray: The Confederate Medical Service*. Louisiana State University Press, Baton Rouge. 1986.

Dunglison, Robley, M.D., LL.D. *Medical Lexicon, A Dictionary of Medical Science*. Blanchard and Lea, Philadelphia. 1860. *Dunglison's Medical Dictionary*, as this volume was generally referred to, was first published in 1857. The 1860 volume was stated to have been "revised and very greatly enlarged." It was issued again in 1865 and 1868 (again "thoroughly revised and very greatly modified and augmented"). I have the 1860 and 1868 volumes to which I refer in order to help me understand what the medical community understood during the Civil War and 19th century eras. I then consult more modern medical sources to better understand altogether.

Hickey, Clarence. *Mercy Street, The PBS Civil War Hospital Special: Some thoughts and Observations*. Montgomery History, Rockville, Maryland. 2016. This is my detailed notes and observations that was the companion paper referenced in the Spring 2016 *History Matters* newsletter of Montgomery History.

McGaugh, Scott. *Surgeon in Blue: Jonathan Letterman, the Civil War Doctor Who Pioneered Battlefield Care*. Arcade Publishing, New York. 2013. This is a biography of Jonathan Letterman written in easy to understand prose, with much detail on Letterman's Civil War experiences and achievements.

Montgomery History. *"Mercy Street", Dr. Stonestreet, and Civil War Medicine. History Matters*. Rockville, Maryland. Spring 2016. This is the newsletter that explained my undertaking of this endeavor to review Mercy Street. It summarized the connection between Dr. Foster in the series and Dr. Stonestreet, the real 19th century physician and Civil War surgeon in Montgomery County. The newsletter provided an internet link to my detailed companion paper.

Reimer, Terry. *One Vast Hospital: The Civil War Hospital Sites in Frederick, Maryland, after Antietam*. The National Museum of Civil War Medicine, Frederick, Maryland. 2001. This book lists 9264 individual soldiers who were patients in Frederick's Army hospitals as a result of the Battle of Antietam. By my count, 744 of those patients were transferred from Frederick's Army hospitals to military hospitals in Washington, DC, and another 159 patients were transferred to hospital facilities in Alexandria, VA.

Schaadt, Mark J., M.D. *Civil War Medicine: An Illustrated History*. Cedarwood Publishing, Quincy, Illinois. 1998. This is a well written and easily understandable book. The author is a medical doctor. The book is written in language that does not require a medical degree to understand.

Wilbur, C. Keith, M.D. *Civil War Medicine 1861-1865*. The globe Pequot Press, Guilford, Connecticut. 1998. This is an illustrated book of Civil War medical procedures and instrumentation. The author is a medical doctor. It is written in language that does not require a medical degree to understand.

Wilbur, C. Keith, M.D. *Antique Medical Instruments*. Shiffer Publishing Ltd., Atglen, Pennsylvania. 2008. This is an illustrated book of antique instruments and procedures. It covers the time period from the 17th to the 20th centuries. The author is a medical doctor. The book is written in language that does not require a medical degree to understand.

University of Toledo Libraries. *From Quackery to Bacteriology: The Emergence of Modern Medicine in 19th Century America*. <http://www.cl.toledo.edu/canaday/quackery/quack3b.html>. 1995.