



WWI Battlefield Medicine

By Danielle Cicchiello

On April 6, 1917 the United States of America officially entered the Great War. The declaration of war pushed thousands of young men to sign up for military service and pledge to give their lives for the country. Joining in the national enthusiasm for war, hundreds of men from Lancaster county were among those who enlisted, with a few dozen joining the 111th Ambulance Company of the Medical Corps.

Within the 111th Company was bugler and ambulance driver J. Reah Hollinger, a 1917 graduate from Franklin and Marshall College (see photo above). During his military service, Hollinger kept a diary to document his daily life, friendships, and medical experience. Under the command of company captain, Dr. Charles P. Stahr, Hollinger and the 111th supported their fellow soldiers and saved the lives of the wounded.

While the Hollinger diary sanitized or omitted many of the horrors of war, the medical artifacts available at the [Edward Hand Medical Heritage Foundation](#), the pictures provided by [Lancasterhistory.org](#), and my own research of the realities of war give the diary a visual dimension to create a vivid picture of battlefield medical experience.

The following website will take you through that experience to reveal the reality that the diary itself bypasses. The hyperlinks in each blog entry will take you deeper into the website and its depiction of the reality of warfare. You will see war as the troops who served in the Medical Corps lived it from enlistment through discharge from military service.

The research project was created under the Hackman Summer Scholar Program funded by Franklin and Marshall College. The project was coordinated by Dr. Louise Stevenson, Professor of History and American Studies at F&M, as well as Dr. Nikitas Zervanos and the board members at EHMHF.

Stage 1: Daily Life



Life on the front lines brought battlefield danger, but it also forced troops to handle the incessant concerns of pest infestations, disease, and boredom. Despite the wealth of tasks available to keep a camp functioning, cot fatigue, a common term for boredom, became one of Hollinger's most frequent complaints. Considering the prevalence of lice, rats, and disease in the close-quartered camps of the troops (seen in the picture above), Hollinger's overwhelming focus on boredom seems unusual. However, complaining about something as menial as boredom provided a distraction from the other potentially life threatening problems the troops managed on a daily basis. Because Hollinger's diary avoids the violent and often sexually explicit nature of war, the more gruesome realities rarely correspond with a diary entry.

Hollinger Diary:

Fri. Feb. 1, 1918

Case of Measles - Brobst [\[1\]](#)

{illegible}

Ten quarantined

Orders received to send home all useless articles and boxes.

I keep mine until I hear of something definite.

Measles:

The Rubella virus causes measles. Although there is a vaccine available today, it was not invented until 1963. In WWI, there was no way to prevent the spread of the disease among the troops[2]. While most infections were small scale, there were a few major outbreaks among recruits in mobilization camps although very few men died from the disease. The close quarters allowed the infection to spread quickly[3]. And, because measles weakened the immune system, a concurrent illness could kill infected troops. Once a soldier started to display symptoms of Rubella (coughing, small red welts covering the body, fever), he was quarantined until the virus had run its course, which took about 2-3 weeks[4].

Hollinger Diary:

Mon. Sept. 23, 1918
Prepared to leave + finally go away
in amb^s {ambulances} at 8.30 rode to [Locheres](#)
and found room in an old stable dirty
cleaned out + settled. Poor weather
Walked up street after dinner + was
put on amb with Behmer[5] sat around
until 5.30 when sent to [Vaubicourt](#)
via Froidois nice trip beaucoup {much} traffic
Evac {Evacuation} for 109 FH {Field Hospital}. Got back at 9.30
Bothered with cooties {lice} all night.
Slept in amb warm etc. Few shells in near distance

Lice:

About 97% of men in the trenches had lice. Normally, soldiers were infected with body lice because the pests like to live in warm, moist places[6]. Considering the French climate in winter, that environment was only found under the soldiers' uniforms. In addition, supply conservation resulted in poor hygiene, making the rapid spread of lice easier. Hollinger often complained about not being able to bathe or change out of his uniform. While lice were normally more of a nuisance than anything else, sometimes the bugs carried trench fever. It caused "headaches, skin rashes, inflamed eyes and leg pains[7]." Hollinger never reported a case of trench fever, but he seemed to display some of the symptoms.

Hollinger Diary:

Sun. June 2, 1918
Slept late and prepared to leave.
Left camp at 2.45 marched to
dock embarked on a small ride
whaler and sailed at 7 convoyed across
channel very quiet
Boat was so crowded that there was no
room to lie down or even sit. Got a
place to sleep on floor where rats chased another
fellow away. Passed [illeg.]
and fortifications.

Rats:

Trench rats lived by the millions and could produce as many as 800 offspring per pair per year[8]. While they rarely gave the soldiers any diseases, they often grew to the size of cats and feasted on the wasted food left behind in the tents and on the corpses that had not been properly buried.

Venereal Disease (STDs):

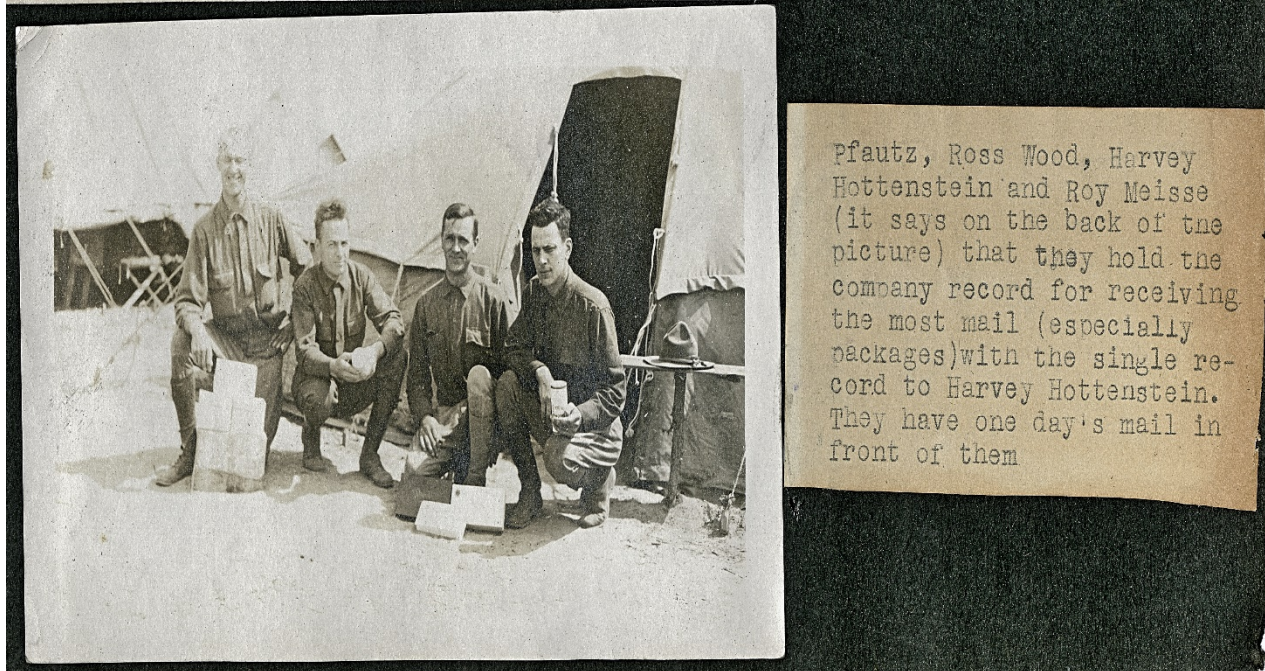
The U.S. Army refused to distribute condoms to the troops during WWI and promoted abstinence to prevent venereal disease. It didn't work. Whereas Britain distributed condoms and France provided brothels to soldiers, U.S. army records indicate that 11% of soldiers in base hospitals were being treated for VD[9]. Historians today believe that percentage was deceptively small, with the true percentage of troops with VD at about 30%. Treatment for VD required the soldier to be removed from active duty and suspended without pay, causing troops to deny having the illness. There were also instances of men preferring lying in a hospital with an STD on their service records instead of dying in battle. Sometimes infected men carried on a lucrative business by allowing fellow soldiers to purchase the infection from them, thus allowing them to have a medical excuse that permitted them to spend a few weeks on medical leave[10].

Hollinger Diary:

Sat. Nov. 16, 1918
Up at 4.30 Made fire etc
Dental ord {orderly} Cliff sick in bed. I am dental
assistant. Put pain killer eugenol in
2 cases.
Read some mail.
Loafed away afternoon
Wrote a bit. on at 9.

Eugenol:

The medical corpsmen often prescribed eugenol, a natural painkiller found in clove oil, nutmeg, cinnamon and basil. Eugenol oil is a distilled and concentrated form that comes from any of these substances and is either rubbed onto the gums for toothaches or taken as a pill. The pills were scarce during the war, making the oil treatment available for toothaches and other minor pains.



Mail:

While there are no pictures of Hollinger receiving packages from home, it is clear that mail was easily one of the favorite parts of his day. Tokens from home eased homesickness and allowed the soldiers to continue their efforts. In the photo above, we see the four men who consistently received the most mail, with Harvey Hottenstein in the lead. Harvey is the second in from the right.

Despite the boredom that dominated daily life, the 111th were still responsible for treating the wounded. Click [here](#) to see the battlefield.

[1] Valentine Brobst of Lititz, PA.

[2]<http://www.cdc.gov/measles/about/history.html>

[3]<http://history.amedd.army.mil/booksdocs/wwi/communicablediseases/chapter12.html>

[4]<http://www.healthline.com/health/measles#Treatment6>

[5] Robert Behmer of Lititz, PA.

[6]<http://www.firstworldwar.com/atoz/bodylice.htm>

[7] Ibid.

[8]<http://www.firstworldwar.com/atoz/rats.htm>

[9]<http://www.kumc.edu/wwi/index-of-essays/venereal-disease.html>

[10] Ibid.

Stage 2: The Battlefield



While none of the troops in the Medical Corps fought in battle, they were directly responsible for treating the men who did. In fact, avoiding the direct dangers of the battlefield could have been one of the reasons so many Lancaster men enlisted in the 111th instead of an infantry unit. The troops who fought in the trenches endured bombings, shellings, and chemical weapons unlike any experienced in earlier conflicts. Troops in the Medical Corps also managed to avoid the horrors of the trenches. They did, however, face their own unique set of horrors: the 111th became familiar with every battlefield injury. When faced with injuries as serious as those inflicted by the enemy, the diseases contracted in daily life seemed minuscule. Battlefield wounds required most, if not all, of the Medical Corps' supplies, attention, and expertise.

Hollinger's Dairy:

Wed. Jul. 24, 1918

Not much doing this morning
Detailed to work at Bas with dix huit {eighteen}
altogether. Packed up and bought
chocolate etc. left a bag behind with this
etc. Got on ambs at 6 + went to a place above Corpsis
above Epieds. Helped in last band in Bas but no
[____]
work. Slept in barn under shellfire + gas etc
all night. No damage. Seemed to be lost.
3 Kabras du front. Fr {The French} out making much noise
(This although Shaf Bald + I walked around walls

Mustard Gas:

Although gas attacks were outlawed by the 1899 Hague Declaration and the 1907 Hague Conference, mustard gas was used in the war. Because it was not considered a "poison or poison weapon," both sides still used it[1]. Once a canister of mustard gas was deployed, it spread on its own and engulfed everything in its path.

Considering the use of trenches in the war and the fact that mustard gas was difficult to detect, it became a most versatile and effective weapon. Whereas the gas was not severe enough to kill people who inhaled it, it could cause severe inflammation in the lungs and blisters on the skin, nose, eyes, and mucous membranes[2]. Sustained exposure resulted in respiratory tract infections, blindness, diarrhea, as well as second and third degree burns. If troops were exposed to the gas for too long, it eventually damaged the DNA in their bone marrow, thereby causing a decreased production of both red and white blood cells. Sometimes it produced cancer, bone disease, and death years after exposure[3]. (Click [here](#) to see mustard gas wounds. Warning: graphic images.)

Hollinger's Diary:

Mon. Feb. 11, 1918

very warm

Moved back to Co. {Company} again so that Inf {infantry}
could dig trenches on our site. Body of Engineers either
left or went on 9 day hike

Hard work moving our + the other tents + baggage back to Co. {Company}
street.

Trenches:

Although Hollinger never fought in the trenches, the men with whom he served did. The 111th's deployment near battlefields ensured that Hollinger's company was familiar with trenches and the conditions that they presented for troops. Trenches were deep, interconnected pits in the ground that were a few feet wide and miles long. Men would live in the trenches for days, if not weeks at a time, separated from the enemy by No Man's land. This style of warfare was indicative of WWI: painstakingly slow, grueling, and unavoidable.



Hollinger's Diary:

Mon. Oct. 28, 1918

Woke up by M. g. {machine guns} firing on one of Jerry {German}.
 Obs avions {observations planes}. Sent to Essey on
 same detail. Sat out front for
 papers. Ludendorf[4] resigns.
 Trois casse d briere Finis a de soir {Three mugs of beer.
 Finished in the evening}
 Pumpkin pie for supper
 Jerry passed overhead a number of
 times but didn't drop any {bombs} on the town

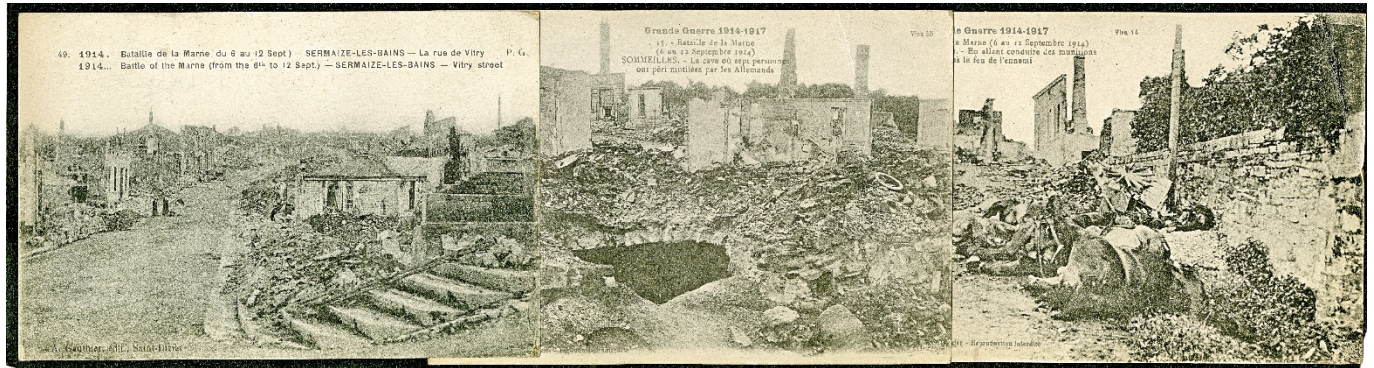
Jerry the Bomber:

Jerry the Bomber was the colloquial name given to the German bomb planes. The most popular model in 1917 was the [Albatros](#), a biplane fighter that was constantly being redesigned to fix structural problems.

Hollinger's Diary:

Thurs. Jul. 25, 1918

Chased out early. Later went to Reg {Regiment} a + 6 were
 detailed to adv {advance} basement there in fads {First Aid
 Dressing Station} over
 next battle field. Bas {base} at farm house with big dugout
 stayed there in sight of Bosh {Germans} for the could see our
 obvs[5] falling on Bosh. Walked back on front of FA {First Aid} + the
 mortar B+ much noise. Big shells land nearby.
 Another crew went out with rations + got shelled
 No damage. Slept in barn at arty {artillery} place all afternoon
 As were leaving in evening big air battle took place
 overhead. Some shelling done. Stayed in base dressing
 Left later + went to Bezu[6] Saw some little tanks



[7]

Bombs and Shelling:

Both sides in the conflict relied on a variety of weapons. Everything from grenades, to chemicals such as mustard and tear gas, to expanding bullets, or Dum-Dums, were used against the enemy. Despite wartime laws designed to reduce or eliminate the use of uncivilized weapons like mustard gas and Dum-Dum bullets, they nonetheless made an appearance on the battlefield. Soldiers who served in the Medical Corps, like Hollinger, had to be ready for all types of injuries. To see Dum-Dum bullets, click [here](#). (Translation: The notorious Dum-Dum bullet, the work of Germany's enemies.)

Once a soldier was wounded, he waited for the bearers to find him and carry him to medical care. Click [here](#) to learn more about the bearers.

[1] Thomas Graham; Damien J. Lavera (May 2003). *Cornerstones of Security: Arms Control Treaties in the Nuclear Era*. [University of Washington Press](#). pp. 7–9. [ISBN 0-295-98296-9](#).

[2] <http://emergency.cdc.gov/agent/sulfurmustard/basics/facts.asp>

[3] Ibid.

[4] Erich Ludendorf, German general.

[5] Abbreviation for observation balloon, an aircraft that flew with the intention of gaining military intelligence.

[6] Besú-Saint-Germain

[7] "Postcards from France," Folder 11, WWI Collection, [Lancasterhistory.org](#).

Stage 3: Bearers



The bearers had the responsibility of following the advancing infantry and carrying the wounded out of battle. Once a soldier fell, the men in his unit had to leave him behind to wait for the bearers^[1]. Carrying wounded with an advancing infantry unit would only slow the unit down and leave it open to attack while distancing the wounded man from lifesaving medical care. The bearers who carried the wounded off the field would trek for miles in either direction, bearing the injured soldier, their gear, and a stretcher. Hollinger never served as a bearer and, therefore, he did not discuss their essential role in the medical process



In the photo above, the men of the 111th are practicing holding stretchers. While all the men in the 111th unit were formally trained to be bearers, the grueling nature of the job meant only the strongest men could perform the task.



When stretchers were unavailable or damaged, bearers would carry men to medical care on their backs. While it is hard to gauge the severity of the soldier's injuries from this picture alone, bearers were supposed to bring back all the wounded, even those that were close to death. They would often carry the wounded for miles, walking through the battlefield, over the dead, and around the trenches.

Field Tourniquet:

Applying the tourniquet on the battlefield was the responsibility of the bearers. Without the bearers' sacrifices, the wounded never would have made it to medical care. Tourniquets like this one saved lives and bearers became so well versed in applying them that the average bearer could do the procedure blindfolded.

The tourniquet was one of the first lines of defense for the medical staff. It gave them valuable time to transport wounded soldiers from battle to the First Aid Dressing Stations (FADS) where better tourniquets and other measures were used to keep soldiers alive until they could be transported to a hospital.

Hollinger frequently discussed the First Aid Dressing Stations in his diary. Although he never mentioned bearers in his diary, they were an integral step to getting the wounded to Hollinger and his company.



Click [here](#) to learn what happened to troops once they reached medical care.

[1]<http://spartacus-educational.com/FWWstretcher.htm>

Stage 4: Dividing the Wounded



Once the bearers brought the wounded to the 111th, they were moved into a First Aid Dressing Station. All the wounded brought in, regardless of their injury, saw a dressing station. Here, under the direction of [Captain Charles Stahr](#), treatment would begin.

Tues. Aug. 20, 1988

Much damage last night.

Lots of aeroplane activity

some of #112 came up.

Packed up before going on duty. Packed

up Fads {First Aid Dressing Station} had only a few patients. Relieved

in Fads at 3:30 hauled in and to

[Cohan](#). Crawled on a pile of denims+

slept with daylight.

First Aid Dressing Station:

The First Aid Dressing Stations were small medical camps very close to the front lines. Injured troops were sent to the stations for immediate care. Each station had bandages and a few surgical kits in stock. The staff who ran dressing stations were able to perform minor surgeries like removing bullets and stitching small lacerations. If the soldier required more invasive treatment, the wound was dressed to prevent infection and to stop its bleeding while the soldier was transferred to a hospital.

Troops with minor wounds could be adequately treated at a First Aid Dressing Station. Minor wounds included bullet wounds that were not lodged in the skin or were shallow enough to be handled on site, small and shallow lacerations that could be stitched up quickly and did not require invasive surgery, and broken limbs. These injuries did not require immediate attention since the troops were lucid and well enough to get themselves to medical care, often finding their way off the battlefield alongside the bearers^[2]. Minor wounds received treatment after the serious injuries had been managed and the troops were sent back to their camp or directly back into battle.

Gauze:

Gauze was used to clean and dress wounds at First Aid Dressing Stations. The Red Cross supplied most of the gauze used on the front lines. Because the U.S. government failed to set up a medical supply system before troops engaged in the European conflict, U.S. surgeons and battlefield doctors relied on generous donations from the home front and their British and French allies for their equipment in the first year of engagement. While the gauze was only a small piece of the medical process, it was arguably the most important. Not only did gauze stop a patient from bleeding out, it also protected severe wounds from the elements and reduced the chance of infection. Gauze bandages gave the soldiers time they needed to reach advanced medical care at hospitals.

Hollinger frequently writes about the Red Cross and First Aid Dressing Stations in his diary.



Hollinger's Diary:

Tues. Aug 13, 1918
Crawled out at 6 + packed up to leave our
Ads {Advanced Dressing Station} went
ambs {ambulances} went ahead
to St. Gilles we walked later to Courville.
4k de front. Found good wine cellar, charcuterie, [\[3\]](#) canned heat
bought at Fr {French} cooperative. Had a lot of champagne with
_____ and every thing necessary for comfort
Assigned to Fads {First Aid Dressing Station} 9-5 am. Bombed by Boche
avions {German planes} 4 times ^{^at 11-1130-2-230}
(3 or 4 planes each dropping 6-9
bombs) Fads in wine cellar above ground. Shook at
enough to fall. There are two holes in ground
20 yds back of cellar. 15 ft wide 5 ft deep. Nobody in
our Co {Company} lost. Several dead + about 15 wounded
in 109 art {artillery} nearby. Detailed to 109 art [1a] Fa but came back
immediately as nothing to do. Had a little scare but
no bombs when plane passed overhead. Rest of night
fairly quiet for next raid ^ (about 4 am, the last) was not nearby.

Advanced Dressing Station:

Advanced Dressing Stations were similar to First Aid Dressing Stations. While First Aid Dressing Stations were equipped with the basic materials required for first aid, Advanced Dressing Stations contained more equipment and were more adequately supplied. For this reason, there were far fewer Advanced Stations on the front lines. After the troops had made their way through the dressing station, they were divided into groups based on the type of injury they had sustained in battle. This system of triaging the wounded allowed the Medical Corps to help as many people as possible. Hollinger's unit was not normally responsible for triage.

Tourniquet:

The tourniquets that were applied in dressing stations were stronger than the field tourniquets used by bearers. It needed to remain in place for up to 24 hours, the amount of time it took to reach some hospitals. However, if a tourniquet was left in place for too long, amputation would be required. The medical staff had to consider the risks carefully before applying the tourniquet.

The tourniquet was applied around the one that was already in place, thus ensuring that the pressure remained constant. Too much loosening and retightening of a tourniquet increased the likelihood of complications during the subsequent surgery. Most of the medical equipment and procedures on the front lines were in place to increase the chance of survival without depleting resources.



Choose an injury:

[Significant](#): Gas injuries, severe bullet wounds, shrapnel wounds. Requires transportation.

[Mortal](#): Chest wound, abdominal wound. Survival Unlikely.

[1]

[2] Emily Mayhew, *Wounded*, Chapter 2: Bearers, (.

[3] Cold cut meat.

Stage 5: Significant Injury



A significant injury required more medical attention than could be found on the battlefield. These injuries ranged from multiple bullet wounds to severe shrapnel injuries that often ended in amputation of a limb. First Aid Dressing Stations did not have the resources to handle multiple invasive surgeries and the troops had to be treated elsewhere. While significant, these wounds were not necessarily fatal. Troops were moved off the battlefield to a field hospital a few miles distant for treatment and recuperation.

Hollinger's Diary:

Mon Jul. 29, 1918

No sleep yet not much work. Several dead buried. About 9 moved back to Fads {First Aid Dressing Station}

in afternoon put on Amb avec {with} Buchy.

Drove

out to about 5 bat AS with Krup. passed overland held narrow Bosh {German} in morning. Under shellfire nearby bastion {stronghold} top of hill.

on return took a load of Blcs to Ch^{te} held obvs shock case all the way. Returned and cleaned. Wrote up this + turned in.

Beaucoup obvs {many observation balloons} going + coming. Sound gas alarms: no gas.

Ambulance:

One of Hollinger's most frequent duties was driving the ambulances from the dressing stations to the field hospital where troops could receive more thorough medical care. Driving an ambulance required Hollinger to think on his feet, maintain efficiency, and minimize additional injuries during travel. The precautionary measures taken at the dressing station could only do so much to keep wounded soldiers alive. Ambulance drivers were entirely responsible for getting the wounded to the next stage of treatment as quickly as possible.

Field Hospital:

Field hospitals were a few miles from the battlefield and handled the injuries that were too severe for the dressing station. In rare cases, the hospitals closest to the battlefield were underground, maintained and staffed by the troops in the medical corps. Hollinger took a picture of one, as seen below.



Field hospitals aimed to have as much equipment as possible in a small and easily transportable space. The hospitals would move with the battlefield and all medical equipment would follow the front line. Constant movement restricted the quality and quantity of the medical supplies a field hospital could have at any one time. The medical tools listed below are all found in a field hospital and were essential in treating the wounded.

Chloroform Inhaler:

While chloroform was a popular choice of anesthetic on the front lines, each particular type of anesthetic had its drawbacks. Chloroform frequently caused skin irritation, making the deeper set design necessary to ensure the solution never came in contact with skin. Chloroform sickness, or vomiting, dizziness, and fever, made ether the more popular anesthetic choice.

Inhalers allowed surgeons and doctors like Stahr to treat their patients as efficiently as possible without causing additional cosmetic damage.



Ether Anesthesia Mask:

The ether inhaler was one of the most popular methods of anesthesia used during the war. It knocked the patient out in a few moments and the style of the mask prevented skin irritation that was common with chloroform. Doctors quickly discovered that when ether and chloroform were used simultaneously, surgery was easier and a patient was less likely to wake up during surgery. The combination of ether and chloroform also prevented chloroform sickness, which had the potential to lengthen recovery time.

Both field and base hospitals were stocked with inhalers like this one. Unlike some of the other inhalers available during the war, this style of inhaler could be moved easily. Because it did not require a machine, it became a popular choice.

**Ethyl Chloride:**

Ethyl Chloride, or ether, was one of the most common anesthetic choices during the war. Doctors were not aware of the long term damage ether caused on internal organs, only relying on it to make the surgical process as easy as possible. It was lightweight and, therefore, easy to ship overseas. In addition, a small dose would go far on the battlefield, making it an all around economical choice.



Irrigator:

Doctors used this type of syringe to irrigate wounds with antiseptic. The war brought a huge reliance on the Carrel-Dakin method for antiseptic aftercare^[1]. Doctors pumped a diluted sodium hypochlorite solution over and into wounds using rubber tubing and air pressure to destroy as much bacteria as possible. These syringes sat above the contraption, forcing the solution into the tubing that was directly attached to the wound, often under the skin.

Although it was dangerous to use glass syringes in a chaotic war hospital, doctors agreed that glass ensured the antiseptic process was as clean as possible. Thus, doctors still relied upon these irrigators despite the risk^[2].

While these items do not directly relate to Hollinger's diary, each item was frequently used in the medical process of the war. In addition, because the 111th Ambulance Company was constantly transporting and assisting in the treatment of the wounded, even though it does not appear directly in the diary, Hollinger was probably familiar with these implements.



Hollinger's Diary:

Sat. Aug. 24, 1918
Had remains of food for
breakfast. Loafed away
rest of morning
Cleaned and greased some of
the surgical instruments
of the Fads {First Aid Dressing Stations}
Bombing planes nearly but not too close

Military Pocket Surgery Kit:

Although pocket surgery kits like this one were used in dressing stations, they were essential to the field hospital. It was small enough that it could be taken anywhere a surgeon needed to go while still having all essential surgical equipment. If the wound was too severe to be patched up at the dressing station but not bad enough to require base hospital attention, it received treatment at a field hospital.

As the ambulance driver, Hollinger often found himself at or around a field hospital, and he became very familiar with their medical processes.



Hollinger's Diary:

Thurs Sept 19, 1918.
In the Foret of Argonne
Got up found some food + made breakfast
and about 2 hr. later started
dinner. Had dinner until 2.30
with some used food
Left about 4.30 on ambs. {ambulances} to [Froidois\[3\]](#)
to a big hospital. Found matches etc in
ward with Co. {Company} after supper put on duty
in ward which we opened up for cases
No one came in so slept all night in
an iron bed.

Base Hospital:

There were a few base hospitals in France while Hollinger served in the war. Click [here](#) to see a comprehensive list of all the base hospitals established by the American Expeditionary Force. Compared to a field hospital, a base hospital was better stocked with medical supplies and better staffed with both Medical Corps troops, nurses, doctors and volunteers. These hospitals did not move and handled thousands of wounded a day.

Inhalers:

Unlike the other two inhalers, this style of inhaler was found only in a base hospital. The smaller design was attached to an oxygen machine during surgery. Because the oxygen machines were too unwieldy to be moved with the field hospital, this inhaler was not commonly used. It was also very difficult to ship the oxygen machines to the front lines; only the largest and most central base hospitals had this type of inhaler. While the use of oxygen during surgery often produced the best results and the least number of complications, it was not always feasible during the war.

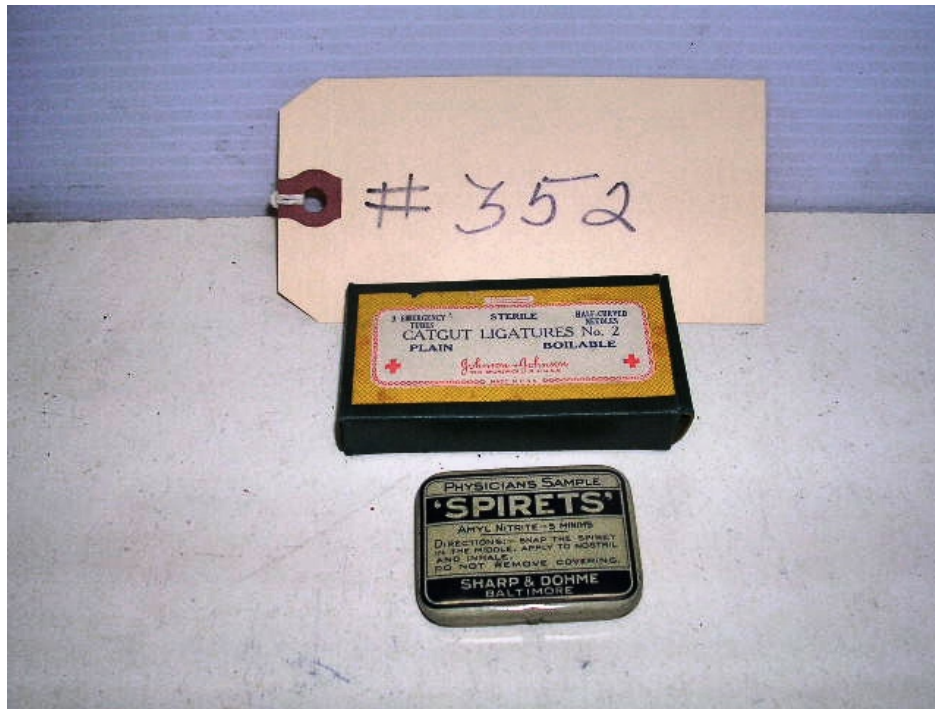


Catgut Ligatures:

The most common suture material used during the war was catgut. When compared to other suture materials, catgut was noticeably smoother and less likely to cause additional infection. The smoothness of the material ensured that the actual act of sewing the wound closed did not aggravate the injury further.

The other popular option during the war was silk, which was harder to obtain because it was a more expensive medium. While thinner than catgut, it was not nearly as sturdy. Catgut's strength made it the preferred choice for wounds that required heavier stitching.

[Dr. Stahr's](#) abilities as a doctor meant that while he might not have frequently been at a base hospital, he was more than capable of using this item in surgery. When assisted by nurses, doctors like Stahr were able to save lives and prevent infection.



After treatment, the troops would either be sent back to camp to begin the entire process over again, or they might be injured so badly that they would be discharged.

[3] Froidos, France.

[1] "Instruments and Appliances" in *The Military Surgeon: Journal of the Association of Military Surgeons of the United States*. Edited by John Van R. Hoff. Vol XLII. (Washington D.C., 1918) 258.

[2] John Allan Hornsby, *The Modern Hospital*, 547.

Stage 6: Recovery and Heading Home

After receiving treatment, troops were either permitted to spend a few weeks on medical leave, or discharged and shipped back home. Recovery depended on the severity of the wound and the soldier's ability to continue fighting with an injury. Amputations and other severe shrapnel wounds that affected mobility were enough to result in an honorable discharge. Cosmetic injuries and Shell Shock were also occasionally enough of a reason for troops to head back to the States.

Recovery:

The recovery process depended on successful sterilization practices. Wounds needed to be kept clean to prevent infection. Debridement, or removing the dead and infected tissue, became a popular way of stopping an infection before it spread out of control[1]. Debridement occurred both before and after a surgery as needed to keep troops alive. Sterilization using the Carrel-Dakin method ensured that even the riskiest surgeries healed in a timely manner without allowing foreign microorganisms to grow under the skin.

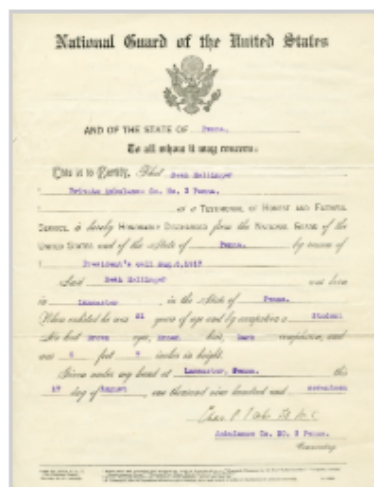
Shell Shock:

Doctors coined the phrase "shell shock" to describe the severe PTSD that plagued many of the troops who fought in WWI. Shell shock is categorized by the severe psychological trauma that often appeared in troops who spent prolonged amounts of time on the battlefield[2]. Today, shell shock is part of doctor's understandings of PTSD. Although PTSD can appear in people who never fought in a war, shell shock is specific to battlefield psychological trauma. To learn more about PTSD, click [here](#).

Hollinger's Diary:

Wed May 28, 1919
Drill
News of Leaving
3rd Med. {Medical} Inspection
Field Equipment Inspec {Inspection}

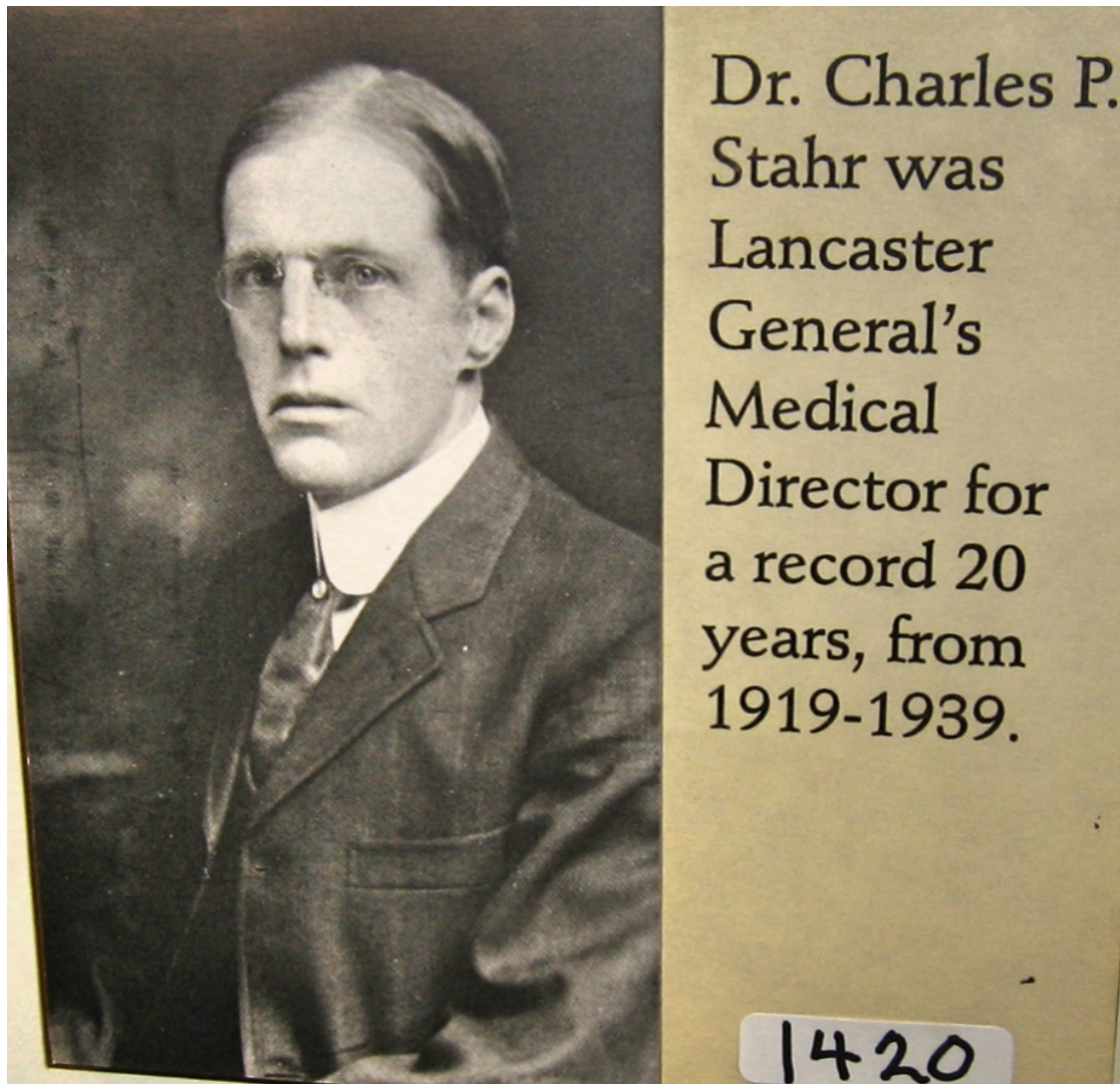
Hollinger's Discharge Papers:



After serving in WWI, Hollinger worked in his family's grocery store for the rest of his life.

Charles Stahr:

After an honorable discharge from his military service during WWI, Charles Stahr went on to become the Medical Director of Lancaster General Hospital.



Dr. Charles Stahr not only became a dedicated public servant, he also continued his military career and served as a surgeon in WWII. By the time of his retirement in 1956, he had risen to the rank of Brigadier General of the Medical Corps. The remaining troops of the 111th dedicated a bronze plaque in his honor to the [Lancaster Armory](#).

[1]<http://www.vlib.us/medical/debrid.htm>

[2] http://www.bbc.co.uk/history/worldwars/wwone/shellshock_01.shtml