



Army Medical Department Center of History and Heritage, Fort Sam Houston, Texas

Number 40 Winter 2022

Contents



Adapting equipment	3-8
Adjusting policy	9
Filling a capability gap	10-11
Creating new units	12-13
Adapting to a personnel shortage	14-15
Della Rainey, ANC	16-17
Recent Donations	18
Book Reviews	19-22

Welcome to issue #40 of the *AMEDD Historian*! Since 2013 the quarterly newsletter has provided interesting information and images on the history of Army Medicine. Thank you for keeping the newsletter going through contributing articles and telling your friends. Did you miss an issue? Fortunately, they are all available at: <https://achh.army.mil/history/newsletters>.

Probably everyone can think of a time when they had to adapt, improvise, and overcome. It is not just from a survival television show, it has happened at Army organizational and institutional levels as well. Just as the Army has had trouble getting 'first battles' right, the AMEDD has also had to adjust how it operated in wartime. Doctrine, organizations, policies, and equipment—all have needed adjustment during time of war. Peacetime does not mean things sit still either, as world events constantly drive change. Time away from conflict is often well-spent considering changes and planning. Between various wars, the AMEDD has needed wide-ranging adaptation to advance with technology.

Read in this issue about the people, plans, and objects that either developed during wartime necessity or their consideration to adapt to previous difficulties.

Getting Specialist Medical Advice

In 1917, during the Army's expansion in World War I, the Army Medical Department created the position of consultant to tap clinical expertise and help assign physicians appropriately.

The U.S. had joined WWI in April 1917, and the Medical Corps expanded rapidly: from approximately 500 doctors in 1916, it peaked over 30,000 in 1918. This presented real problems in matching doctors with appropriate experience and training to different positions. Beyond MD there were few credentials: there was only one specialty board and no formal residencies. (Osteopaths would not be commissioned in the Medical Corps until the 1960s.) Doctors could claim they were experts at anything they pleased. How would the Army differentiate among those who claimed expertise? Commanders of medical units, dealing with their many responsibilities, and typically Regular Army doctors who had been general practitioners at some small fort, would have limited basis and opportunity to judge the skills of their staff as they dealt with their other concerns.

In the small prewar Medical Corps the Personnel Division of the Surgeon General's Office (SGO) had known the (approximately 450) Regular Army doctors, and the 1,903 members of the Medical Reserve Corps were reasonably well known. The (Left: COL William Lyster, MC, who recommended a system of medical consultants in 1917. Photo courtesy National Library of Medicine)



rushed wartime expansion required new methods. By the fall of 1917 both the SGO and the Chief Surgeon of the American Expeditionary Forces appointed consultants. This was recommended by LTC William Lyster, MC, who had been stationed in London as a medical observer with the British; he had seen their consultants (only medical and surgical) and advocated a panel of six eminent civilian practitioners be appointed in France to advise on clinical matters. He also recommended an experienced Army physician to be cognizant of their operational impact. It is not clear when Lyster sent the idea to Washington, but it was published in October 1917.

The use of consultants developed in parallel in France and the U.S., and it is not possible to tell which came first. In the SGO there were relatively few consultants, possibly because in the U.S. it was easier to use personal contacts to get evaluations on personnel. Consultants did assess and sort physicians, and they also travelled to carry information or explain ideas. At times, consultants were used as an alternative to inspectors, because the AMEDD did not want Inspectors General getting into clinical matters. Thus a consultant could have a “professional” or “technical” inspection and avoid trouble. There were some consultants in the Army’s five geographical regions, circulating, assessing, encouraging, advising – and correcting. At times they also consulted about individual recruits, analogous to the waivers process today.

In France, the American Expeditionary Forces (AEF) ultimately had more consultants at headquarters, and also appointed them at several other levels. Tactical units down to divisions received consultants, possibly as a way to provide medical officers beyond what was authorized in Tables of Organization. Smaller units had fewer consultants. Geographical base commands and hospital centers (a command echelon for multiple fixed-facility hospitals in one area, up to 20,000 beds) also had consultants, some of whom were apparently double-hatted. There were some dental consultants, but no details are available. At General Headquarters, there were three plans, starting with only four consultants at GHQ and ending with over a dozen. Duties for consultants developed alongside the organizational plans, but focused on: advising the Chief Surgeon on policy; visiting medical units to assess personnel and equipment; providing training; “supervising the clinical work;” and advising medical unit commanders on the quality of their personnel. At first the consultants all reported to the Chief Surgeon, but in April 1918 (as the number of consultants grew) a Chief of Professional Services was appointed to coordinate them. That Chief was a Regular Army doctor, but only a colonel and had brigadier generals (albeit direct-commissioned civilians) reporting to him.

The fighting ended on 11 November 1918, and the AEF senior leadership recommended consultants for any future expeditionary force. They foresaw consultants at most echelons, army, corps, and division, as well as at hospital centers. In the interwar years the AMEDD followed the AEF advice and wrote consultants into doctrine for deployments. This is not surprising. MG Merritte Ireland was The Surgeon General, and had first been AEF Chief Surgeon and had expanded and systematized consultants, and he liked the system. Consultants would be “highly trained men, consisting almost exclusively of members of the civil medical profession enrolled in the Reserve Corps, who are leaders in their various specialties.”



COL William Keller was the Chief of Professional Services for the AEF. Photo courtesy National Library of Medicine

Sources

Annual Report of The Surgeon General, U.S. Army, 1917.

Charles Lynch, “A Consulting Staff for the Medical Department,” *Military Surgeon* October 1917; 484-5.

Charles Lynch, Frank Weed, and Loy McAfee, *The Medical Department of the United States Army in the World War, Vol. I, The Surgeon General’s Office*. Washington, DC: U.S. Government Printing Office, 1923.

John Ford, *The Medical Department of the United States Army in the World War, Vol. II, Administration American Expeditionary Forces*. Washington, DC: U.S. Government Printing Office, 1927.

Anon. “An Epitomized Description of the Medical Service in Campaign,” *Bulletin of the U.S. Army Medical Department*, May 1924, 469.

Adapting Paula Ussery and Charles Franson, AMEDD Museum

“Improvise, Adapt and Overcome” is a slogan that is being heard more frequently now within the AMEDD as the Department of Defense moves away from low intensity asymmetrical conflict into preparing for Large Scale Combat Operations. As the DOD prepares for a conflict against a near peer adversary the AMEDD is also adjusting to provide prolonged care where needed and with that, the recurring theme to improvise and adapt. Although the slogan may be modern, the concept is certainly not. The AMEDD Museum is fortunate to have several different examples that illustrate the AMEDD’s flexibility in both the past and present.



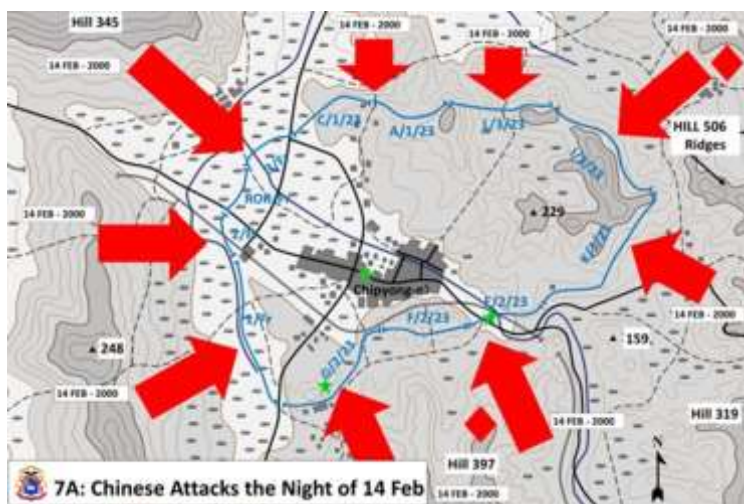
One of the military vehicles from WWII in the AMEDD Museum collection is the iconic “Jeep.” Manufactured by both Willys and Ford, the official nomenclature was “Truck, ¼ ton, 4 x 4.” Manufacture began in 1942. Although it was designed to be a command and reconnaissance vehicle, it proved to be one of the most versatile vehicles available during WWII.

One of its ‘field expedient’ uses was as an ambulance. Light, with a low center of gravity and 4-wheel drive capability, it quickly proved it could evacuate casualties from forward locations where the larger ambulances were impractical.

Initially stretchers were laid directly across the hood and/or rear area behind the driver, or walking wounded were transported in the seats. This quickly evolved into racks of angle iron welded or bolted directly onto the Jeep for carrying multiple litters. Except for the USMC’s “Holland Ambulance Jeeps,” there was no standard pattern for these superstructures. Some reconfigured Jeeps could carry two litters across the hood. Others carried litter patients both across the hood and across the back. In the Pacific, Mediterranean and Northwest European theaters, the Jeep evacuated countless wounded soldiers during the fighting. (Photo courtesy National Museum of Health and Medicine)

During the Korean War, another Army vehicle, the Army ambulance, WC 54, was used for prolonged care during the stand at Chip’yong-ni. The WC 54 was the primary Army Ambulance during WWII and the Korean War that followed only five years later. A ¾ ton 4 x 4 truck, 29,502 were produced between 1942-1945. There was space on the front seat for a crew of two. It could accommodate four litter cases or approximately seven sitting patients.

The battle for Chip’yong-ni stopped a rapid advance south through Korea by the Chinese and North Korean People’s Army; those forces had driven the United Nations forces back for hundreds of miles. The town was held by the 23d Regimental Combat Team and a French battalion. Ultimately surrounded for three days and two nights, the defenders withstood repeated attacks until rein-

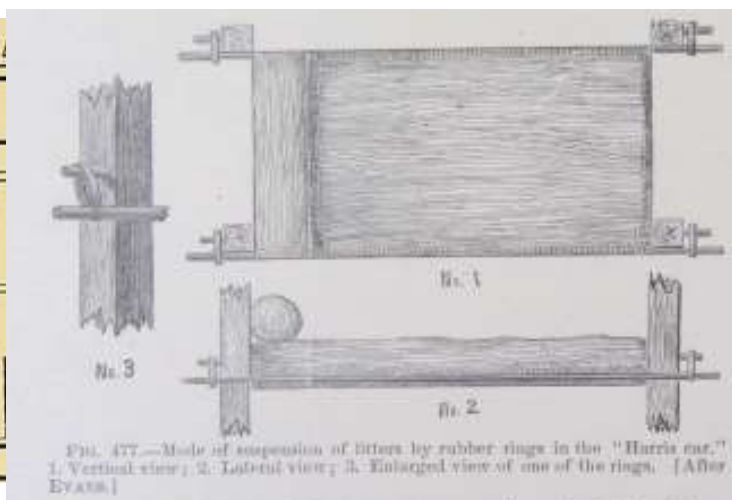
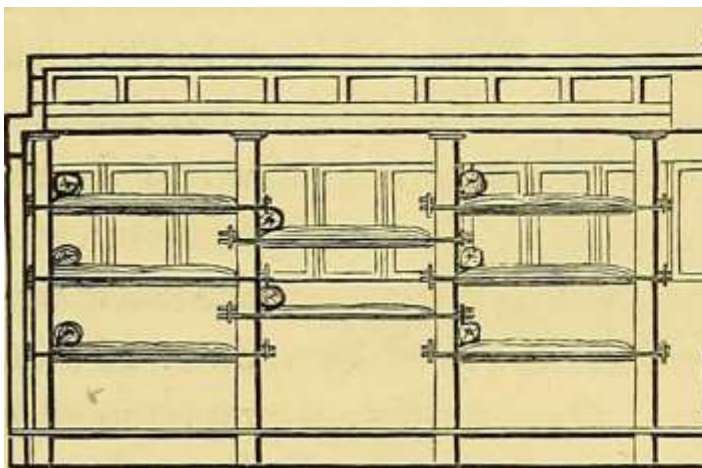


forcements arrived on 15 February. Medical preparations included ensuring the availability of whole blood, normally limited to hospital facilities, and managing the flow of patients due to no evacuation capability.

COL Robert Hall recalled "Patients continued to arrive at the collecting station ... and it was necessary to find additional heated shelter. The only solution was the placement of wounded in the four enclosed ambulances dispersed near the collecting station. The ambulances afforded no protection against the artillery and mortar fire ... but the patients in them were kept from freezing by the drivers running their engines long enough to heat the interiors at intervals through the night." Although the ambulances were damaged by enemy fire, miraculously no patients kept in them was struck.



WC54 ambulances in 1943. There were no substantial changes for the ones used in Korea. Image courtesy Wikipedia.



Another innovation became standard AMEDD equipment for almost 100 years. When the Civil War broke out in April 1861 the AMEDD was unprepared for the overwhelming number of sick and wounded. Civil War battles especially produced an enormous flood of casualties not seen before by a surgeon and clearing the battlefield was an enormous task.

From this came the use of railroads to move patients, first occurring in the wake of the Battle of Wilson's Creek, in southwest Missouri. After a torturous journey of roughly 120 miles from the battlefield to Rolla MO via wagon, 209 patients were transported on the St. Louis Railroad to St. Louis MO. To maximize the available space and to cushion the ride for the wounded, the freight cars were altered. One experiment used "seasoned tent poles ... shaved down to give them as much elasticity as was compatible with requisite strength and secured transversely near the roof, passing through holes in the side studs of the car. Ropes attached to these poles and to the floor suspended two tiers of field stretchers on which pallets were laid."

In other cars wooden bunks were built along the sides of the vehicle and filled with straw. Additionally in some eastern battles, wounded soldiers were laid on the floor of the cars, with leaves, straw, and/or hay as padding. Eventually there were attempts to standardize litter support systems. Among the more well-known

was the Harris system, created by Dr. Elisha Harris, U.S. Sanitary Commission, that used a rubber ring through which the litter pole was threaded. (Underlying image from George Otis, Report on a plan for transporting wounded soldiers by railway in time of war, 1875; overlying image from Medical and Surgical History of the War of the Rebellion)

The AMEDD was also unprepared for the necessity of moving large numbers of patients during the early days of WWII. In 1942 the AMEDD had only 6 hospital cars. Happily, there were commercial Pullman cars that were utilized until the War Department could begin manufacture of purpose-built hospital cars. By 1945 there were 380 AMEDD railroad cars.

The pinnacle of development in AMEDD railroad evacuation design came at the end of WWII when the Hospital Unit Car was finalized. The AMEDD Museum's Hospital Unit Car was manufactured in 1953 and had cutting-edge features including a central air conditioning system with built-in washable filters, a self-contained kitchen that included a freezer, refrigerator, and commercial stove, a shower and two toilets as well as an automated bed pan washing machine. There is an emergency call button system from each bunk or litter to the nurse's desk and each patient was provided with a drinking glass holder, a reading light and an ashtray. (AMEDD Museum image)



A different type of adaptability is required when one becomes a Prisoner of War. Being able to think creatively was a defining characteristic of Japanese Prisoner of War, CPT Thomas Hewlett, MC. CPT Hewlett graduated from the University of Louisville's School of Medicine in 1938 and joined the Army in 1940. Both his clinical skills and his ability to adapt would be sorely tested during his 39 months as a captive of the Empire of Japan, a government that had not signed the 1929 Geneva Convention related to the Treatment of POWs.

Stationed on Corregidor, Hewlett spent 14 months on Corregidor after the surrender as the medical officer for a 500-man labor detail. In July 1943 Hewlett and a group of prisoners were transported to Japan. As Hewlett recounted in his testimony to the War Crimes Commission, "I was well aware of the need for surgical instruments and the fact that the Japanese [Army] did not furnish instruments for use on prisoners. The instrument kit I had put together on Corregidor was minimal at best [but] my friendship with certain enlisted men working in medical supply at Cabanatuan made it possible to supplement my kit to the point that at least we would be able to handle emergency surgery while enroute to Japan. The individual instruments were placed in the baggage of a number of prisoners; thus, they escaped detection during the inspections we were subjected to."

"Our only available anesthesia [during the voyage] consisted of several vials of dental Novocain tablets. Two of these tablets dissolved in a small amount of the patient's spinal fluid and injected into the spine gave about forty-five minutes of anesthesia. . . ." When the ship stopped at Taipei Harbor a prisoner became very ill. A request to send the POW to a hospital for emergency surgery was denied. "[S]o utilizing a hatch cover table and dental Novocain in the spine, removal of a ruptured appendix was carried out in bright sunlight."



Dr. Hewlett's improvised surgical implements.
AMEDD Museum image.

Arriving at Fukuoka in August 1943, prisoners at Camp 17 were forced to work in a mine and a foundry owned by the Mitsui Corporation. Hewlett continued to improvise to serve his patients. He used bicycle

spokes to set fractures, maggots to fight gangrene and light bulbs to keep pneumonia patients warm in the winter. The medical staff at Camp No. 17 included Australian, American, and a Royal Dutch Army medical corps officer. At the end of WWII the five other medical corps officers composed a letter of commendation for Dr. Hewlett.

Also from WWII is the captured German first aid bag used by American medic, Sgt. Alfred Perez of the 36th Infantry Division. Perez joined the Texas National Guard during the interwar period and his unit was activated on 25 November 1940. Shipped to the European Theater in April 1943, Perez served as a combat medic with the 142d Infantry Regiment. He advanced through the enlisted ranks until he was the First Sergeant of a medical detachment. On 11 August he was given a field promotion to Lieutenant. Serving 28 months overseas, he was awarded five campaign stars, the Combat Medic Badge, and three Bronze Stars.

At some point in his service in the European/Mediterranean Theater he acquired this German first aid bag and began using it to carry his American medical supplies. Most of the contents are now American including a variety of dressings and a pair of American bandage scissors. A few German items including a salve container and three aluminum pill tubes also remain. (AMEDD Museum photo)



Innovation is not unique to the American armed forces of course. From the Vietnam War the AMEDD Museum has a fascinating collection of captured Viet Cong/North Vietnamese Army medical supplies and equipment. Although most of the artifacts were commercially produced, there are some pieces that were improvised. As examples there is a sterilizer fabricated from an American canister, probably an artillery shipping container. There is a Viet Cong medic's belt cobbled together from a U.S. Army equipment belt and three



Dutch baby formula cans. Among the hand-made or improvised medical instruments are forceps and an irrigator. (AMEDD Museum photos)



The AMEDD Museum collection contains a Soviet portable gasoline-powered generator that was used by the 307th Medical Battalion during Operation Urgent Fury. The unit's 10,000-watt generator was left in the United States as a lesser priority

when the 82d Airborne flew to the island of Grenada in October 1983. This substitute generator was found on the island, inspected, tested and declared adequate. Complete with a tool pouch and an instruction manual in

English, it provided emergency medical power for the 307th. When the 82d returned it was brought back to the United States for the foreign intelligence information it provided.



The tradition of adapting to unforeseen circumstances has continued within the AMEDD into the present. During Operation Iraqi Freedom, the 28th Combat Support Hospital was the first unit to re-open Ibn Sina Hospital in Baghdad. Neither a Bair Hugger nor temperature management blankets were available when the first patients began arriving. Faced with patients who needed surgery but whose body temperature was too low to allow normal clotting SSG Adam R. Irby and MAJ Mike Greenly fabricated a most ingenious device. Made from an oversized cardboard box, a hair



dryer, a disposable surgical drape, and some duct tape, the Chief Cuddler raised the body temperatures of pre op patients to safe levels. So successful was this improvised piece of equipment, other units sent personnel over to the 28th CSH to inspect it so that other “Chief Cuddlers” could be fabricated at their facilities. (AMEDD Museum photo)

The most recent example of the AMEDD’s ability to adapt to an unexpected situation was created in the spring of 2020 as New York City became one of the early hot spots of the COVID 19 outbreak. The “Rona 4.0” device was developed in spring 2020, by MAJ Timothy Yourk, CRNA, and used by members of the 11th Field Hospital Advanced Echelon at the Javits Center, in New York City. The hood protected the respiratory personnel while inserting endotracheal tubes in critically ill patients. Made from PVC pipe and Plexiglas panels, the

box fit over a patient's head and neck, and is set up for negative pressure airflow, provided by a shop vac attached to a PVC and rubber fixture on top. It received an EUA (Emergency Use Authorization) from the FDA. All 27 personnel who used the device remained COVID free during their deployment.

(Right) COVID hood from the health care professional's viewpoint. The oval window is for access to the patient and the suction port at the top was hooked into a shop vac thereby creating a negative pressure environment.

(Below) Hood from the patient's viewpoint.



Sources

Department of the Army Technical Manual 55-1254; Car, Railway Hospital Unit, 15 December 1945.

Robert M. Hall, "Treatment of the Wounded at Chip'yong-ni" *Military Medicine* 163/3 (March 1998).

Voice of the Past "The Battle of Chip'yong-ni," Army Heritage Center Foundation.

Medical and Surgical History of the War of the Rebellion, Volume 2, Part III.

Army University Press, "The Battle of Chip'yong-ni Virtual Staff Ride."

Alan Hawk, "An Ambulating Hospital or How the Hospital Train Transformed Army Medicine" *Civil War History* 48/3 (September 2002).

WW2 U.S. Medical Research Centre, www.med-dept.com

COL Thomas Hewlett papers, ACHH Archives.

A Scene of Horrors: A Medical and Surgical History of the Battle of Wilson's Creek, Kip A. Lindberg & Thomas P. Sweeney, M.D.
<https://www.militarytrader.com/military-vehicles/holden-ambulance..>

Jeep Disease – turning on a dime

The prototype Jeep was delivered to the Army in November 1940, and its mechanical develop continued – and it has developed a loyal following. Jeep Disease also developed. It was the colloquial term for pilonidal cysts or pilonidal sinuses, a cyst on the buttocks caused from ingrown hairs or trauma. (It did not need to be substantial trauma, repeated bouncing from cross-country driving would suffice.) Pilonidal sinuses are a small hole or tunnel in the skin at the top of the buttocks. Risk factors for both were prolonged sitting, sweating, and lack of hygiene – all likely for Army drivers in the field. The conditions themselves were not dangerous, but they could easily become infected, which was a problem.



Few physicians had treated either condition in civilian life; without an infection, the condition was annoying but not debilitating. In an era before health insurance was widespread, probably few sufferers went to doctors. Thus doctors had very limited experience with the problem, and surgeons tried many approaches. The Army gathered data on the problem, and on 25 September 1943 the Surgeon General's Office published a clinical guideline. Army hospitals were to operate before an infection developed, if possible. That looked like doing the most to solve the problem. But it proved to be the problem: healing was slow, and different surgeons had different approaches, including removing substantial amounts of flesh.

Within six months, the sur-

gical consultant in the European Theater (COL Elliot Cutler) had analyzed almost 600 cases, and warned his colleagues in the Surgeon General's Office about the lengthy post-operative recovery (an average of 55 days) and high percentage (23%) of patients whose operation was a failure. (Typically the skin was sutured too tightly, leading to failure of primary union.) OTSG studied the problem and staffed a revised policy.

On 2 September 1944 the revised policy was issued, and it essentially reversed everything that had been directed in 1943. Now, there should be no surgery unless a cyst or sinus was infected, and not even always then. Treatment would be as little as possible: hot baths or hot compresses to cause the infection to break through the skin. If surgery was necessary, simple incision and drainage were advised, with careful post-operative management.

The results were good. Hospitalization time dropped to 24 days, saving a month of duty time per patient. The surgical failure rate also decreased. The jeep had brought a problem to light, and the AMEDD's early response had been aggressive. The flaws in that were soon evident, and were modified as soon as solid data had been assembled and a better policy could be staffed.



U.S. Army photos.

Sources

War Department Technical Bulletin 89, 2 September 1944. Pilonidal Cyst and Sinus

LTC Melvin Casberg, "Infected Pilonidal Cysts and Sinuses," *Bulletin of the U.S. Army Medical Department* 9/9 (June 1949), 493-6.

B. Noland Carter, ed. *Medical Department, U.S. Army, Surgery in World War II: Activities of Surgical Consultants, vol. I*. Washington, DC: OTSG, 1962.

Filling a Gap: Medical Intelligence capability in WWII

Sanders Marble, PhD, ACHH

Dr. Edward Trowbridge Wolf was going behind Japanese lines. The Army issued him a Colt .45 and a sub-machine gun. He wasn't looking to fight; he was hunting mosquitoes to know what diseases they spread. GEN Douglas MacArthur wanted intelligence on the diseases in Northern New Guinea, and men like Trowbridge had to establish the ground truth because, in September 1942, no medical intelligence organization existed to provide it. CPT Wolf boarded a 40-foot wooden fishing boat with five Filipinos as crew and traveled at night from the hastily built base at Milne Bay, on the eastern end of New Guinea, north and west along the coast up to Wanigela Bay and onward.

The 32d Infantry Division was shortly going to land somewhere on that remote jungle coast, and knowledge of endemic diseases and the insects that transmitted them would affect operations.

Trowbridge's dangerous mission was necessary to gather the intelligence because nobody had thought ahead and had pre-war medical intelligence.

Starting Medical Intelligence

In April 1941, months before Pearl Harbor, the chief of preventive medicine in the Office of the Surgeon General knew he didn't know enough and got an officer assigned to do medical

intelligence work. But nobody was trained for that work, and there was a whole world to cover. Finding people was a challenge. Even with the draft to provide manpower, nobody had any experience. And which part of the world? Priorities were a problem because the enemy had the initiative and the Allies repeatedly had to switch focus areas. They initially focused on the French colonies in the Caribbean because the Vichy French might give the Germans bases there. Next, the United States traded 50 old destroyers to the British in exchange for basing rights on various British islands, and it was necessary to identify the medical threats on those islands because American troops would be at risk. The first officers sent were sanitary engineers who provided detailed information about the water systems but very little about diseases. The Japanese attack on Pearl Harbor compounded these problems: now United States forces would be operating in the Pacific as well.

Despite the problems, the medical intelligence office (which had various titles during the war) contributed to 96 "Strategic Surveys" in 1942 alone, with only seven staff members. They knew the information was patchy, but it was something. They contributed it to the planners but had no idea how it affected operations. In 1943, the number of products dropped as the Allies gained the initiative and plans could be more deliberate instead of reactive. The staff grew, but unfamiliarity with languages remained an obstacle to understanding the worldwide operating environment. The Army worked with the Navy (the Air Force did not yet exist) on Joint Army-Navy Intelligence Studies and firmed up internal operating procedures. They developed a structure of collection, analysis, and dissemination, rather than a geographical one. The approach to sources became a bit more systematic: they combed through open-source medical literature; followed up personal contacts; and got information from the War Department G-2, Allies, prisoners, Office of Strategic Ser-

Carina in northern Australia from
 about Oct 11 1942 I received orders to
 proceed to Advanced Base New Guinea
 to make a Medical reconnaissance
 of the north coast of New Guinea -
 (prior to the Buna campaign)
 I flew to Port Moresby by Empire Flying Boat.
 I went to Milne Bay by Australian Hospital
 ship manunda - and at 2 A.M. I boarded
 the S11, a 40 ft wooden trawler with a
 crew of 5 Filipinos as a crew +
 15 natives as carriers to handle
 my critical medical items I carried
 on board. I was instructed to travel

Dr. Wolf's notes about his trip to New Guinea: "I received orders to proceed to Advanced Base New Guinea to make a medical reconnaissance of the north coast of New Guinea..." ET Wolf Collection, McGovern Historical Center, Texas Medical Center.

vices, and sometimes operational forces. Only limited information came from the theaters because the intelligence officers there had never worked with medical intelligence, and medical officers had trouble getting on the intelligence staffs or intelligence field teams. They also had to decide how to cover foreign medical developments. Was a new surgical procedure or a new medicine an intelligence matter or a clinical matter? The final decision was that medical intelligence was about disease prevalence, not about how it was treated. The exception was biological warfare, which had such serious implications that intelligence and medical intelligence both covered all aspects: overlap was better than gap.

By 1944, the medical intelligence “product” had changed to Technical Bulletins, Medical, known as TB MEDs. These included a section of recommended ways to safeguard troops’ health. With the broad outlines of Allied strategy clear, it was easier to predict locations, and there was less wasted effort. Sometimes the TB MEDs were ready just before an operation (the report on France was printed in May 1944, only 34 days before D-Day), not allowing much time for review and intelligence to influence operations. Yet when the report was ready in time, it didn’t necessarily influence operations: TB MED 20, the survey of the Mariana Islands, was ready 90 days before the invasion, and it identified dengue fever as a major risk. But insect-control teams were not prioritized for shipping space, and the invasion forces suffered around 4,000 dengue cases on Saipan alone before the bug-sprayers arrived and promptly broke the epidemic. Intelligence was accurate and timely but might not influence plans.

Getting information to theaters could be as much of a problem as getting information from them. No established channels existed for medical intelligence, either in intelligence staffs or in medical staffs. Potential users did not know about medical intelligence, so they did not know to ask, and even the communication channels were unclear. A TB MED was likely to get to a medical unit, but would it get to the G-2 staff? One novel distribution channel was open-source publishing: since much of the information was public domain, a three-volume set of books titled *A Geography of Disease and Sanitation* was published, which could have been useful if they reached theaters in time.

This is adapted from the author’s “Medical Intelligence: Historical Background and Current Capabilities,” *Military Intelligence* Jan-Mar 2020, 34-38.



New Guinea had been little developed or explored by 1942, and lines of communication were parlous. Port Moresby was 700 miles from Townsville, only a small city, and Dr. Wolf had to proceed another 450-500 miles around the coast by boat.

Assembling a forward surgical hospital

At the beginning of WWII two developments made it look like forward surgery was no longer necessary. Plasma seemed as effective as whole blood, and sulfa drugs looked like they could delay infections for one or even two days. In those circumstances, the Army's logistically cumbersome surgical hospitals (with 400 beds) could be left in the rear. The regimental combat teams would have support from a collecting company (that had an aid station to stabilize wounded and prepare them for evacuation), the division had a collecting company that could do minor surgery (but only had medics, no nurses) and hold 150 patients for a few days. Anyone needing more would readily be evacuated.

Except the two clinical linchpins were both wrong. That was discovered in the first sustained land fighting, in Tunisia, over the winter of 1942-43. Medical units had not been a high priority, partly because of the planning assumption that forward surgery wouldn't be needed. So there were no hospitals to push forward. Sending surgical teams to work at collecting companies was a poor solution; the collecting companies lacked even sterilization capability, and just moving surgeons up was hardly a solution. It was a bit better at the division clearing company but there was limited post-operative support for the seriously wounded.

There was not time or resources during the Tunisian Campaign to fix the problem, but between the Axis surrender in Tunisia (13 May 1943) and the invasion of Sicily (9 July) a solution was pieced together. The Army had created Field Hospitals that were fully mobile but intended for use in rear areas, to provide medical care where a need popped up – perhaps prisoner of war camps, or a new base area was being created – so they had medical and surgical capability, with pharmacy, laboratory, and X-ray capability, and nurses to provide post-operative care. They could also be split into platoons (a traditional military term, but a bit odd when meaning around 100 personnel) that ran 100 beds. With surgical teams added, it was a solution – mobile, able to provide sustained support, and reasonably sized to support a division.

That was how they were used, alongside the division's clearing company. The clearing company could handle the sick and injured who were likely to return to duty; the augmented field hospital platoon could handle the seriously wounded. The lightly wounded, who could stand further evacuation, were evacuated farther back. 100 beds was enough to support a division in heavy action, since the post-operative patients had to be stable enough for ground evacuation. The platoon didn't take much space, and sometimes it was cut back to 50 beds. That seems to have been most common for an invasion, when shipping space was at a premium.

It was not a permanent solution, so in 1944 the command surgeon at Army Ground Forces looked for a solution, and in August 1945 the staffing process produced the Mobile Army Surgical Hospital.

Sources

Sanders Marble, "Forward Surgery and Combat Hospitals: The Origins of the MASH," *Journal of the History of Medicine and Allied Sciences*, 69/1 (January 2014), 68-100.

Edward Churchill, *Surgeon to Soldiers: Diary and Records of the Surgical Consultant, Allied Force Headquarters, World War II*. Philadelphia: Lippincott, 1972.



BG Frederick Blesse, as Theater Surgeon in North Africa put forward surgical hospitals together, and as Army Ground Forces surgeon had the MASH designed. ACHH photo.



As surgical consultant, LTC (later COL) Edward Churchill identified the shortcomings in plasma and delayed surgery in the North African Theater. Image courtesy Dr. Cameron Wright.



Dirt-floor OR at the 10th Field Hospital, 1945. The 10th was supporting forward units in Germany. Courtesy Christopher Kennedy.

Helicopter Ambulance Detachments

In WW2 early helicopters flew some rescue missions in Burma and the Philippines. The wooden helicopters were seriously underpowered and could only lift the pilot and one person; sometimes a pilot being rescued, sometimes a wounded soldier. There were only a few helicopters, and their reliability was low, but they were successful enough that plans for the invasion of Japan assigned them a casevac mission.

After the war, the Air Force was created, and roles and missions divided. The USAF kept helicopters for air rescues, while the Army was authorized aviation for various utility purposes including evacuation. However, the Army budget too tight for helicopters to be purchased for several years.

When the Korean War started on 25 June 1950, the USAF soon sent a detachment of H-5 helicopters from the 3d Air Rescue Squadron. They were on the ground in July, and COL Chauncy Dovell, the 8th Army Surgeon, wanted to test the capabilities of helicopters for patient evacuation. On 3 August Dovell met Capt. Oscar N. Tibbetts, the 3d ARS commander, and they found the Stokes litter would fit laterally in the H-5, but the standard Army litter needed the handles cut off. Dovell asked for a test flight, and two patients were put on board; Dovell climbed in, and the H-5 easily lifted off. Dovell asked for a long flight, and they headed to the 8054th Evacuation Hospital 100km away. On 10 August the Fifth Air Force commander authorized use of helicopters for frontline evacuations.

But on 5 August they had already done it. Pfc. Claude C. Crest, Jr. had been wounded near Sendang-ri. Evacuation was requested, and an H-5 lifted him back to Taegu. Within a month, Air Force helicopters had evacuated at least 27 soldiers, and carried medical supplies forward.

USAF evacuations gave time for the Army to organize helicopter ambulance units. Dovell requested these through both USAF and Army channels. USAF leadership thought medical evacuation was an Army mission, although the Air Force Surgeon General sent more H-5s; air rescue would always stay their primary mission. The Army moved fast, activating two medical helicopter detachments on 1 October 1950, and two more on 1 November. The first to deploy was the 2d Helicopter Detachment, arriving at Incheon on 22 November 1950. They trained in Korea, becoming operational on 1 January 1951. Attached to the 8055th MASH, it flew its first evacuation flight the next day.

In December 1952 the Army approved a Table of Organization and Equipment for Medical Detachment (Helicopter Ambulance). In days helicopter evacuation went from idea to reality, in a few months provisional units were operational, and in two years all the paperwork had been completed to make helicopter ambulance units permanent.



Loading a patient on an H-5, 3 August 1950. COL Dovell is standing at far right. US Army photo.

Sources

Forrest L. Marion, *That Others May Live: USAF Air Rescue In Korea*, Air Force History and Museums Program, 2004.

Peter Dorland and James Nanney, *DUST OFF: Army Aeromedical Evacuation in Vietnam*, U.S. Army Center of Military History, 1982.

Albert E. Cowdrey, *U.S. Army in the Korean War: The Medics' War*, Washington DC: U.S. Army Center of Military History, 1987.

Darrel Whitcomb, *Call Sign - DUSTOFF: A History of U.S. Army Aeromedical Evacuation from Conception to Hurricane Katrina*, Fort Sam Houston: Borden Institute, 2011.

Adapting to A Shortage of Doctors

In 1969 it was clear the draft would be ending, and thus the Doctor Draft too. The AMEDD was going to have to recruit doctors differently, and unless the shortage proved to be temporary, would have to use them differently too. There would be a steep shortage of General Medical Officers, doctors without any specialty training, who typically had elected to do their military service before going through residency training; the Army employed them as battalion and brigade surgeons, and in outpatient clinics. The Berry Plan, which allowed doctors to defer their military service until they had received residency training, would also end, so the AMEDD would have fewer specialists, and that gap would take years to fill because of the years of residency training needed. Surgeon General Hal Jennings worked to fill the gap in several ways.

One element was better facilities. Many Army hospitals and clinics were still in WWII buildings, repaired and updated, but fundamentally out of date. That reduced the AMEDD's efficiency, and Jennings used that argument to win more facilities funding from the Army and DoD.

One element was better strategic organization. The Surgeon General commanded the major hospitals, but the post commanders were responsible for the smaller hospitals. Jennings had pushed a World-Wide Organizational Structure for Army Medical Support (WORSAMS) study that argued strongly for a consolidation of healthcare delivery. That took several years to come about, but Health Services Command became operational in 1973 and could focus on efficient healthcare.

Another element was reorganizing healthcare in MEDDACs. For years ambulatory care had been neglected; the specialists worked in the hospitals and clinics and the GMOs and medics worked in troop medical clinics and other outpatient facilities. Jennings appointed a consultant in Ambulatory Care to reorganize that. The goal was to improve ambulatory care so there were fewer patients going into the hospitals, and that was itself going to be a multi-faceted solution.

Some of it was allowing greater practice autonomy to certain clinical staff. Dietitians, occupational therapists, and physical therapists already saw patients, but after referral from a physician. Now PTs and OTs would begin seeing some patients directly, and dietitians work in the community was reemphasized.

More of the solution was incorporating new categories of healthcare provider into the Army. Physician Assistants were just starting in the civilian world, and the Army thought they could be a temporary solution until more doctors could be recruited. So around 400 were trained, and overwhelmingly assigned to battalions to replace the absent battalion surgeon. Nurse practitioners (then called nurse clinicians) were accepted in several roles: pediatric, community health; psychiatric; and ambulatory care (now termed family) nurse practitioners were added, as were nurse midwives.

The AMEDD adopted a recent development in physicians' training as well, the Family Practitioner. GMOs typically had one (maybe two) years of experience after medical school, while Family Practitioners had a structured three-year residency. Far better trained than GMOs, they could handle many conditions that previously had needed referral to specialists in the hospital.

There was an idea that failed, as well. The Automated Military Outpatient System was intended to allow physician-supervised medics (AMOSists) to work in Acute Minor Illness Clinics (AMICs) to treat outpatients without an appointment, not unlike today's urgent cares. They would use medical algorithms, decision trees, and both triage patients to appropriate providers and to treat those with very minor ailments. AMICs and AMOSists proved a disappointment. Supervision varied, some algorithms were poorly developed, and some medics relied on their own experience. That could be better than a first-generation algorithm, but created some risk to patients. Meanwhile, AMICs did little to divert patients from other facilities.

To prove these solutions could work with the Army, Fort Benning was the trial location, and ambulatory care nurse clinicians were trained starting in January 1972. The first Family Practice residency was started there in July that year, and a Family Practice Clinic opened. It was not always easy; many doctors were unsure about both new roles for nurses and the wholly new role of PA, and there was tension between nurses and PAs. (This was not helped by nurses being commissioned officers while PAs were warrant officers until 1993.) Over time these problems have been worked out. Family Practice clinics could have nurse practitioners, social workers, and other providers on staff, and expanded so they could cover 85% of patient needs.



LTG Jennings, Surgeon General 1969-73. ACHH photo.

However, the temporary situation that LTG Jennings saw coming turned out to be longer-lasting. The physician shortage was addressed, but there has been no shortage of patients needing care, and the adaptations have become permanent. Multi-specialty primary care teams, organized in Soldier-Centered Medical Homes or Patient-Centered Medical Homes have become the norm, and a far wider range of healthcare providers treat patients in their scope of practice.



(Above) Architect's model of the new Walter Reed Army Medical Center building (new in 1977) rising over the old one (originally opened in 1909). The new WRAMC building was part of replacing generations of old buildings. U.S. Army image.

(Below) Mobile Health Unit #1. In the early 70s the AMEDD was building up outpatient programs. Multi-faceted, it included PAs, nurse practitioners, and a modified RV at Fort Knox. From July 1972, MHU#1 made rounds in housing areas, providing screenings, health education, and treatment. U.S. Army image.



Sources

Annual Reports of The Surgeon General, 1972-1980

Amelia M. Duran-Stanton, Amy L. Jackson, et al. U.S. Army Physician Assistant Handbook Second Edition. Borden Institute, 2021.

Mary Sarnecky, A History of the U.S. Army Nurse Corps University of Pennsylvania Press, 1999; A Contemporary History of the U.S. Army Nurse Corps. Borden Institute, 2010.

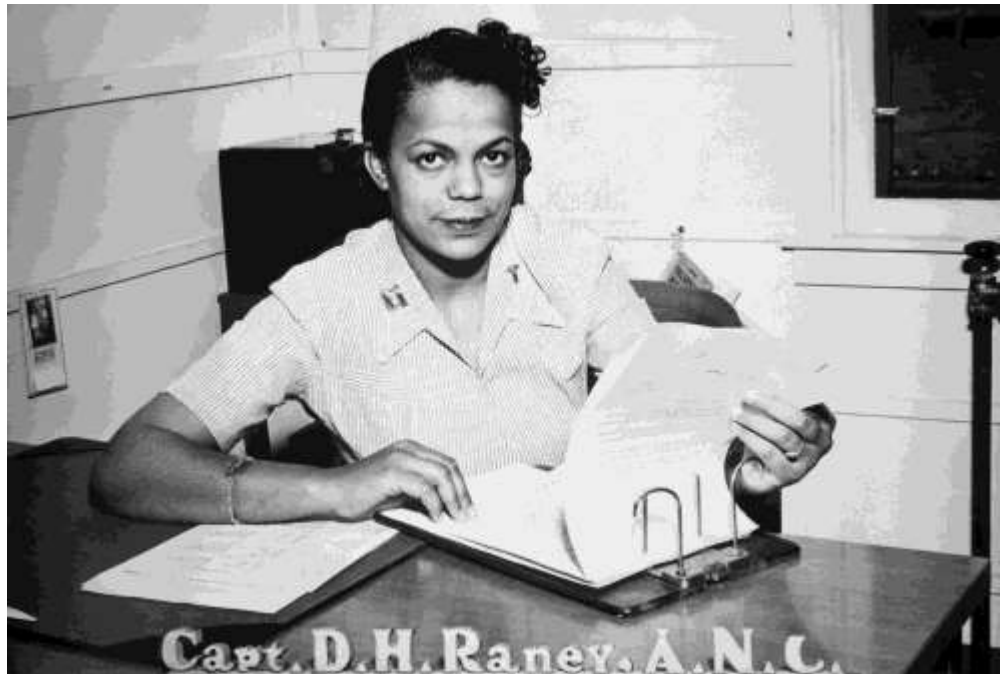
African-American Pioneer in the Nurse Corps: Della H. Raney

Grant T. Harward, PhD

Della Hayden Raney was born in Suffolk, Virginia, on 10 January 1912 to George and Willie Raney. She was the fourth of twelve children in her family. After graduating high school, Raney (sometimes also spelled Rainey) attended the Virginia State College for Negroes in Petersburg, Virginia, before she moved to the Lincoln Hospital School of Nursing in Durham, North Carolina. Raney finished training as a nurse in 1937. She first worked at the Community Hospital in Norfolk, Virginia; then she moved to the newly constructed Kate Bitting Reynolds Hospital in Winston-Salem, North Carolina; before she returned to the Lincoln Hospital in 1939. Raney worked as an operating room supervisor.

U.S. mobilization for war offered Raney a new opportunity. The U.S. had instituted its first peacetime draft in September 1940, which meant that the Army would soon have tens of thousands of black soldiers serving in segregated units. Following the racist logic of segregation, white nurses ought not to care for black soldiers. Consequently, a month later the Army surgeon general recommended accepting black nurses into the Nurse Corps to staff segregated wards in Army hospitals. Since the establishment of the Nurse Corps in 1901, less than a score of African-American women had been allowed to serve in its ranks, and only for a brief six-month period after World War I during the crisis of the influenza pandemic. The Army Medical Department set a quota of 185 black nurses. Raney wanted to be among these select few, but she faced an obstacle. An officer candidate for the Nurse Corps needed to be not only a graduate of a nursing school, a registered professional nurse, and a member of a national nursing organization but also a member of the Red Cross. Red Cross organizations discriminated against African-Americans, particularly in the South, so very few black nursing school graduates were accepted as members. Raney overcame this barrier by writing directly to Miss Mary Beard, the national director of the American Red Cross Nursing Service, expressing her desire to practice her profession and serve her country. She promptly received a letter in response containing Red Cross membership card, certificate, and pin. In April 1941, Raney became the first black nurse to report for duty in the Nurse Corps – even before the U.S. entered World War II in December 1941.

Through a combination of skill and luck, Raney had the distinction of many other “firsts” as an African-American woman in uniform. She trained with a class of 23 other black nurses at Fort Bragg, North Carolina, who were the first African-American women to be commissioned as second lieutenants. Congress had not granted nurses “relative rank” until 1920, which gave them status as female officers (but not full rights and privileges or equal pay of male officers) able to command enlisted men in medical and sanitary matters, so none of the black nurses after World War I had received commissions. In April 1942, after a year of training, Raney was assigned to the station hospital at the Army air field in Tuskegee, Alabama. Black airmen for the segregated 332nd Fighter Group and 477th Bombardment Group trained there. She became the first African-American woman in the Nurse Corps to be promoted to first lieutenant and be assigned as a chief nurse. In June 1944, Raney was the second black Nurse Corps officer promoted to captain, and the only one in the Army Air Forces. A month later, she was reassigned as principal chief nurse overseeing a new basic training center for black nurses at Fort Huachuca, Arizona.



This post was the home of the segregated 92nd Infantry, 93rd Infantry, and 2nd Cavalry Divisions. Therefore, Raney helped provide care for both “Tuskegee Airmen” and “Buffalo Soldiers” who nicknamed her “Maw Raney.”

Raney pushed new boundaries as “the color line” blurred somewhat under the demands of a global war. It made no military sense to leave skilled black nurses idle at an isolated post after segregated black divisions had been deployed overseas or assigned elsewhere stateside. In January 1945, Raney and 24 other African-American nurses were transferred to Camp Beale, California. While a handful of the soldiers assigned to the personnel replacement depot were black, the vast majority were white. In part because of the relatively more tolerant atmosphere in the West, the Army allowed black nurses to treat white soldiers. Additionally, African-American women working in a perceived subservient job was acceptable to racist sensibilities. The Army eventually removed the quota on African-American women, so 479 black nurses were serving by September 1945, although they were seriously underrepresented among the over 50,000 officers of the Nurse Corps. Raney rose above bigoted attitudes. She was celebrated for being a pioneer and an outstanding chief nurse at the post hospital.

Raney remained in the Nurse Corps after the war ended. She married Nathaniel Freeman, a recently discharged unit commander in the 96th Service Group, in December 1945. In July 1946, Raney was the first African-American woman promoted to the rank of major, just before going on terminal leave from her assignment. She was hesitant about taking up housekeeping, however. Raney decided to volunteer for extended active duty in occupied Japan instead of settling down. After returning to the U.S., Raney married for a second time in November 1949, this time to James S. Johnson. She was finally discharged in February 1950.

The outbreak of the Korean War in June 1950 meant Raney’s skills and experience were again in high demand. In February 1951, she was assigned to the Percy Jones Army Hospital in Battle Creek, Michigan. The hospital center had recently been closed but it reopened to treat wounded soldiers arriving from the frontlines. Raney worked there until it was again shuttered within a year of the end of the war in the Korean peninsula in July 1953. Raney decided to care for veterans for the rest of her nursing career. She obtained a job at the Veterans Administration Hospital in Dearborn, Michigan. She eventually became the head nurse of allergy-dermatology services. Raney was a frequent speaker at events held by The National Association of Colored Graduate Nurses and received a doctorate in nursing from Columbia University. She married a third time, to Andrew L. Jackson. Raney finally retired from nursing in 1978. She died on 23 October 1987. Raney was buried in Arlington National Cemetery outside Washington, D.C.

Sources

- “First Negro Army Nurses Report.” *The Tuskegee News* (Tuskegee), April 9, 1942
- “Skegee Air Base Gets First Negro Nurses In Army: Five Detailed to Post Medical Unit in Alabama.” *Jackson Advocate* (Jackson), April 11, 1942.
- “Graduate Of Lincoln Nursing School First Red Cross Lieutenant.” *Durham Morning Herald* (Durham), April, 19, 1942.
- “It Can Be Done.” *The Michigan Chronicle* (Detroit), June 24, 1944.
- “Chief Nurse at TAAF Promoted to Captain.” *The New York Age* (New York), July 1, 1944.
- “Basic Training Center for Negro Nurses Established At Ft. Huachuca Hospital.” *The Apache Sentinel*, July 21, 1944.
- “More WACs Complete Hospital Technicians’ Training.” *The Apache Sentinel*, August 11, 1944.
- “Nurses Leave The Fort for New Station.” *The Apache Sentinel*, January 12, 1945.
- “Nurses At Beale: Captain Raney Heads Staff.” *The Apache Sentinel*, April 27, 1945.
- “Marks Anniversary.” *Jackson Advocate*, June 2, 1945.
- “Only Negress With Rank Of Major Visits Sacramento.” *The Sacramento Bee* (Sacramento), July 13, 1946.
- “Major Della H. Raney.” *Alabama Tribune* (Montgomery), February 16, 1951.
- “Commencement Ceremony.” *Durham Morning Herald*, September 8, 1963.
- Cowdrey, Albert E. *United State Army in the Korean War: The Medic’s War* (U.S. Army Center of Military History, 1987).
- Johnson, Jesse J., ed. *Black Women in the Armed Forces: 1942-1974 (A Pictorial History)* (Hampton, VA: Hampton Institute, 1975).
- Sarnecky, Mary T. *History of the U.S. Army Nurse Corps* (Philadelphia, PA: University of Pennsylvania Press, 1999).
- Find A Grave. “MAJ Della Hayden Raney Jackson.” <https://www.findagrave.com/memorial/120217815/della-hayden-jackson>
- The Henry Ford. “Battle Creek’s Percy Jones General Hospital.” <https://www.thehenryford.org/explore/blog/percy-jones-general-hospital-battle-creek-michigan>
- Tuskegee Army Nurses Project. “Della Hayden Raney (Jackson) ‘Maw Raney.’” <https://nursinghistory.appstate.edu/biographies/della-hayden-raney-jackson>
- VA Detroit health Care. “History.”

New ACHH Archival Donations

Correspondence course materials, maps, photographs, and postcards belonging to Leslie C. Randall, M.D. Randall served in the Medical Reserve Corps between 1917 and 1929.

Percy Jones General Hospital and Gardiner General Hospital newsletters, photographs, and booklets collected by Master Sergeant Paul Corbin. M/Sgt Corbin worked in and lead the Orthopedic Shops in both hospitals during World War II.

A selection of Army Medical Laboratory historical documents and Technical Manuals donated by Kurt Harrell.

New to the Research Library

Comeau, Bill. Duel with the dragon at the battle of Suoi Tre. 2022

Ludwick, Jr., Arthur L. and Peggy Ludwick. A doctor's war: letters and reflections from the frontlines of World War II.



Fort Snelling summer training for Reserve Officers, 7-20 July 1929. LTC Randall is #14 on the second row, second from the right. 2022

Faces From the Front: Harold Gillies, The Queen's Hospital, Sidcup, and the Origins of Modern Plastic Surgery, by Andrew Bamji. Warwick, UK: Helion & Company, 2017 (reprinted in paperback, 2022). Softcover available from Amazon.com, \$28.00.

Reviewed by G. Alan Knight

The new and massively industrialized technology of WWI, arguably the first truly modern armed conflict, produced different and in many cases more devastating wounds than those inflicted in prior conflicts. Facial wounds were often multiple in nature, involving destruction of jaws, damage to or loss of eyes and the sockets surrounding them, noses, lips, palates, and/or cheeks. Full-face injuries included the disfiguring injuries caused by burns.

Andrew Bamji, a physician and consultant archivist at Queen Mary's Hospital, Sidcup (successor to Queen's Hospital) has authored what will likely be the definitive work on the British treatment of facial injuries sustained by their military personnel and those of the dominions during WWI. *Faces From the Front* is basically a more detailed and clinically-focused account that serves as a companion piece to *The Facemaker* by Lindsey Fitzharris. Despite the clinical focus, even the most complicated procedures are explained in a manner easily comprehended by a layman. Diagrams and photographs aid in the explanations.

Both books detail the pioneering work of Harold Gillies, a talented, compassionate and visionary ENT surgeon. His war service in Belgium and France immersed him in treating facially-wounded soldiers and in the process, seeing the need for many of these to receive extensive reconstruction involving work by a multi-disciplinary care team. Using persistence and influential professional connections, Gillies, a major in Britain's Royal Army Medical Corps, was instrumental in the establishment of a specialized treatment unit for severe facial wounds at Cambridge Military Hospital in Aldershot and subsequently, the expansion of this treatment capability to an entire facility, Queen's Hospital at Sidcup. Despite his comparatively modest rank, Gillies headed the medical team at the unit and subsequently the hospital. The soldiers treated were from around the British Empire.

The reader may well ask why facial wounds became such a focus of attention. Bamji suggests that such injuries were the most visually obvious and evoked the strongest reaction both from the wounded themselves and from those who viewed them. What were the adverse reactions? Horror, anger, revulsion, sadness, and despondency were just a few. What were the implications of such wounds for the post-war lives of those so visibly and catastrophically wounded? The author documents reactions to the facially wounded, particularly among the British public, that differed significantly and not favorably from those experienced by service personnel who had lost limbs or had been blinded. For many of the facially wounded, a "then" and "now" portrayal is provided.

The author begins by painting a picture of the WWI battlefields, not only the trenches but the nature of war as experienced in other theaters and now, in the air. He notes the changed nature of warfare. He also addresses injuries sustained aboard ship, many of which were sustained by sailors in the Battle of Jutland in 1916. These were in addition to facial injuries caused by rifle bullets. Innovations such as steel helmets were helpful in providing protection against injuries to skulls but not to faces. Burns associated with service in tanks, aboard ships, and by flying personnel created new medical and surgical challenges. The nature of this new war is presented in a few first-hand accounts of battlefield wounding, the British system for casualty retrieval, initial treatment, and evacuation to Britain. Bamji, highlighting the prevalence of such casualties, says "An analysis of 48,000 admissions to British army casualty clearing stations showed that face, head, and neck wounds comprised nearly 16% of the total. The French Army Medical Service dealt with over 15,000 facial casualties over the course of the war." (p.17)

The reader may ask why the inclusion of the statistic of French facial casualties. The author describes early efforts to treat facial injuries in France and Britain along with some comments on such care in Germany. He indicates the heavy facial casualty numbers in the first weeks and months of the war, as viewed by the French, strongly suggested the need for specialized treatment. Quick to respond, they developed a tiered system, but one that was somewhat decentralized. Gillies came to see this decentralization, the lack of information-sharing, and the rejection of a multi-disciplinary approach as impediments. Two noted and pioneering American civilian surgeons who operated in the Paris area engaged in no communication with key French counterparts and leading French surgeons seemed disinclined to liaise with their foreign counterparts.

As is pointed out elsewhere in the narrative, the French and German approach was focused mostly on "patching-up" the wounded, whenever possible for return to the front. Facial reconstruction was limited and

often, by the French, capped by fitting the most disfigured soldier with a life-like mask. In Britain, until Gillies effected change, facial casualties were sent to various hospitals where there was effectively no meaningful specialty care.

Aside from details of Gillies establishing a plastic surgery unit in the Cambridge Hospital in 1916, there are some surprising facts presented surrounding the subsequent establishment of Queen's Hospital at Sidcup. Noteworthy was the extent to which, aside from personnel, it was almost exclusively funded from construction and daily operation until 1925 by private money, not government funds. Unusual from an American perspective, this was apparently the British "model" also found in facilities founded for treatment of orthopedic casualties and the war-blinded.

The surgeons operating at Queen's Hospital were from Britain, Australia, and New Zealand, but included nine Americans, U.S. Army Medical Corps officers posted there to acquire facial wound treatment experience prior to American casualties. Eight of them are noted in surviving documentation as having participated in operations. British, Australians and New Zealanders had separate sections but collaborated in treating patients from other than their own country of origin. Some petty jealousies did exist and are documented.

The author documents an interdisciplinary focus in treatment team composition. The team utilized dentists, oral surgeons and radiologists along with nurses and orderlies. In an age before color film, black and white photography was used extensively by Gillies and colleagues to record patients from initial intake through the often numerous procedures they underwent, culminating in a final image prior to discharge. As an example of the time needed for reconstruction the author cites one patient who underwent 19 operations over 6 years to reconstruct a cheek, nose, and upper lip.

Also seeing the need for a more complete record, Gillies added artists to his team. The pastels by artist Henry Tonks, a trained but long non-practicing physician, provide a dramatic and disturbing picture of the devastating wounds that convey even more than the plethora of black and white photographs, the extent of the facial wounds. Such photographs are linked to accounts (basically abbreviated case studies) of clinical treatment, typically involving innovative reconstructive techniques and new approaches to skin grafting devised by Gillies, and also by some of his colleagues. Gillies and his team emphasized the need for reconstruction to address the aesthetic as well as the functional. In the case studies presented, both successes and failures are presented.

Concluding pages of this work deal with in-house rehabilitation services and the psychology of disfigurement and reactions to it, often using case studies.

Bamji assesses the legacy of Gillies and Queen's Hospital. On the one hand he clearly identifies him as the inventor of modern plastic surgery but suggests, after a brief post-war flowering in Britain, that major development of the specialty did not occur until after WWII. In Britain, he cites a lack of demand for plastic surgery after WWI and the prohibitively high cost of same. Perhaps cultural factors also played a part. Bamji suggests the U.S. was more receptive, especially to cosmetic procedures. While the role of Gillies in founding the specialty is obvious, the picture of him presented is nuanced. A brilliant man, he was both innovative and difficult. Beloved by his patients, some of his colleagues considered him too slow in the operating room, and overly familiar and even jocular with his patients, whom he treated as equals. In short, he did not follow the "approved" doctor relationship model. In summary, this is an invaluable portrait of the founding of a specialty and the work of a surgeon who deservedly ranks to be remembered among major contributors to modern medical care.

The Facemaker: A Visionary Surgeon's Battle to Men the Disfigured Soldiers of World War 1, by Lindsey Fitzharris, New York: Farrar, Straus & Giroux, 2022, 315 pp., \$30.00. *Reviewed by G. Alan Knight*

As with many medical specialties, modern plastic surgery owes much to the pioneering efforts of a military surgeon who responded to the carnage of war he encountered on the Western Front. The author provides a detailed picture of the day-to-day clinical challenges faced and the solutions devised by Dr. (Major) Harold Gillies, Royal Army Medical Corps, in treating severe facial wounds sustained by British soldiers, sailors, and flying personnel.



Dr. Harold Gillies. Courtesy The BAPRAS Collection; The British Association of Plastic, Reconstructive and Aesthetic Surgeons'

Gillies, an experienced ENT specialist, experienced his initial exposure to the ravages of the new industrialized and more lethal face of war in Belgium and France in 1914 and 1915 during assignment to medical treatment facilities close to the front lines. He quickly discerned that technology had created wounds of a nature beyond what medical science was then trained to handle, especially wounds of the face. "Noses were blown off, jaws were shattered, tongues were torn out, and eyeballs were dislodged. In some cases entire faces were obliterated. The nature of trench warfare led to high rates of facial injuries." (p.7)

Fitzharris emphasizes the point that severe facial wounds presented some of the greatest challenges to surgeons, and those who sustained these injuries experienced a much different and typically negative reaction from others. British severely facially-wounded soldiers, flyers, and a few sailors were evacuated to the United Kingdom for definitive treatment. Dr. Gillies was instrumental in creating a specialized plastic surgery service at a general hospital, then expanding it to a specialized hospital dedicated to treating their devastating wounds.

The physical appearance of these men, gruesome and unsightly, elicited rejection and revulsion by many civilians with whom they came into contact unlike their reaction to the countless amputees or those blinded. The author suggests the reaction was a result of what one might view as historical conditioning. She says "For centuries, a marked face was interpreted as an outward sign of moral or intellectual degeneracy. People often associated facial irregularities with the devastating effect of disease, such as leprosy or syphilis, or with corporal punishment, wickedness, and sin." (p. 12) She suggests the

belief that facial disfigurement was "a fate worse than death" was very much still prevalent throughout society during WWI.

As a result of the stigma attached to disfigurement, soldiers with such wounds found themselves having to deal with their own perceptions of their altered selves as well as experiencing the reactions of family and the general population. So ghastly was the initial appearance of many that the preferred mode of adaptation was self-isolation and depression, often profound, was commonplace.

In 1915, reassigned to the Allied Forces Base Hospital in Etaples, France, Gillies began to partner with a dental surgeon who had established a specialized service to treat maxillofacial injuries. He had already worked with a pioneering dental surgeon and subsequently visited with a pioneering French surgeon. In late 1915, Gillies was able to arrange a transfer to the Cambridge Military Hospital in the UK where he established the first specialized unit to treat facial wounds. Never parochial in his efforts to provide the best medical care for severe facial wounds, he quickly established a multi-disciplinary team. He recognized the importance of dentistry in facial reconstruction. "The dentist's primary role in facial reconstruction was to ensure that the patient would be able to eat and speak with relative ease." (p. 71) His multi-disciplinary team included in addition to dentists and other surgeons, anesthetists, radiologists, artists, sculptors and photographers. Gillies was also acutely aware of the psychological impact of such wounds, and banned mirrors from several wards of the hospital where patients were billeted in the earliest stages of their treatment.

The author identifies the many procedures used by Gillies. Some were adaptations of techniques used

by others, both contemporaries and physicians and surgeons of the past, but many were procedures invented by and refined by Gillies. Thus, the reader becomes acquainted with figures such as the Italian surgeon, Gaspare Tagliacozzi, whose 1597 publication was the first to deal totally with reconstructive surgery and, delving back into antiquity, the work of the Indian surgeon, Sushruta, who appears to have invented the rhinoplasty.

Fitzharris also briefly discusses the fabrication of masks designed to cover facial disfigurement. Even Gillies realized that there were limits to surgical reconstruction and sometimes masks were the only viable option. Masks were created to try to recreate the facial appearance of the soldier or sailor prior to wounding, where available based on pre-injury photographs. Masks were not without problems. They required frequent adjustment “since healing or the formation of scar tissue might alter the contours of the face over time.” (p. 126). Regardless of how lifelike, masks had the disadvantage of presenting the wearer with a fixed expression and of without revision or replacement, could not present the normal changes in a face associated with aging. Fitzharris suggests Gillies was aware of these drawbacks and saw his surgical remediation as a way to overcome the limitations of masks.

The spectrum of severe facially disfiguring wounds is represented in the stories of the wounding of a number of Gillies’s patients while engaged in combat. The surgical challenges they presented is chronicled along with the treatment, typically an incredible number of operations over months and sometimes years. These selected patients are also pictured via photos of the damage prior to surgery, an image during remediation, and a final photo taken after hospital discharge. Gillies, a very warm, supportive and empathic person, nonetheless recognized that in confronting facial wounds and devising new techniques, there sometimes were failures and though not defeated by them, was clearly saddened by adverse outcomes. He recognized the depression of his patients and saw his efforts to rebuild their faces as a major step in helping them overcome depression and adjust to life in an image-conscious world.

The author says “Gillies’s transformative work during the war marked a turning point in medical history, as he opened the door for a new generation of plastic surgeons concerned not just with function but with aesthetics.” (p. 248) WWII would see him continuing to perform facial reconstructions and also genital reconstructions on wounded soldiers.

This is a well-researched and well-written work that is both informative and uplifting.

— 27 July 1775 —



Nurses at Jacksonville, FL, in 1898. Before the Army Nurse Corps was established in 1902 the Army hired various nurses, including nuns, to treat soldiers. Image courtesy National Museum of Health and Medicine.



22 January 1945. PFC Edwin Gosse and PFC Robert Sealbach (Medical Detachment, 310th Infantry Regiment, 78th Infantry Division) use a litter mounted on skis to evacuate a patient near Lammersdorf Germany. Image courtesy National Archives.

Writing for *The AMEDD Historian*

We are seeking contributions! We believe variety is the way to attract a variety of audiences, so we can use:

Photos of historical interest, with an explanatory caption

Photos of artifacts, with an explanation

Documents (either scanned or transcribed), with an explanation to provide context

Articles of varying length (500 word minimum), with sources listed if not footnotes/endnotes

Book reviews and news of books about AMEDD history

Material can be submitted usarmy.jbsa.medical-coe.mbx.office-of-medical-history@army.mil Please contact us about technical specifications.

The opinions expressed in *The AMEDD Historian* are those of the authors, not the Department of Defense or its constituent elements. The bulletin's contents do not necessarily reflect official Army positions and do not supersede information in other official Army publications or Army regulations.

AMEDD Center of History and Heritage

Chief, Mr. Nolan Watson

AMEDD Museum 210-221-6358

History Branch 210-221-6958

Research Collection 210-808-3296

<https://achh.army.mil>

