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EMSHISTORIAN

THE JOURNAL OF THE NATIONAL EMS MUSEUM

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My First Experience with an Ambulance



Photo reprinted with permission of the authors from 80 Years of Fire and Rescue Apparatus in Fairfax County, Virginia: 1923 - 2003 by Peter West and Mike Sanders. 2004

by Fred Claridge, Paramedic, Editor

My first memory of an ambulance goes back to when I was a little kid, growing up in Falls Church, Virginia. Back then, a red Chevy Suburban ambulance from the Jefferson Volunteer Fire Department over on Route 50 covered the area where I lived. (They're now a part of the Fairfax County Fire and Rescue Department.) That ambulance had a large response area. You'd see it responding all the time throughout our area.

One afternoon, my buddies and I were on our bicycles cruising around my apartment complex when we saw the fire department ambulance go screaming by on Lee Highway. We gave chase on our bikes, stand-pedaling as fast as we could to catch up. Our version of a "code three" response. As we were flying

down the service road next to the highway, we saw the ambulance pull into a construction site where they were building some new apartments right next to our complex.

We rounded the corner of a building under construction and saw the ambulance stopped, its red beacon turning. We collectively slammed on our bike brakes as we "arrived on scene." There was a small crowd, including some kids our age. The kids were crying. We watched as a young boy was pulled out of a giant sandpile by his feet. Immediately, one of the ambulance men rolled the boy onto his side, scooped sand out of his mouth, turned him onto his back and began mouth-to-mouth breathing as he pinched the boys' nose closed.

The crew didn't stay long on scene. One of the crew carried the lifeless boy into the ambulance through the back doors, gently placed him on the gurney and began rescue breathing again. His partner slammed the doors shut, hopped behind the wheel, and took off for the hospital, siren wailing.

My friends and I didn't know what to expect when we turned into ambulance chasers, but I doubt we expected to see anything like that. An article about the tragedy appeared in the morning newspaper the next day. The boy had died. But not for lack of effort on the part of those long ago rescuers.

Those ambulance attendants with their Red Cross first aid cards were a part of the legacy that made my job as a paramedic many years later possible. Perhaps you have a similar story – something from the “vintage” days of EMS that inspired you or got your attention.

Of course, at the time, I couldn't have imagined ever working on an ambulance myself. That didn't happen until I'd dabbled with a few other career tracks first. I can't honestly say that memory inspired me, but I've never forgotten that scene. The boys' blond hair. The looks of concern on the faces of the adults. How quickly the crew moved. The “ambulance attendant” on his knees, bending over, trying to breathe life back into that little boy.

Years later, after I'd entered the EMS profession, the author of a book about the history of the Fairfax County Fire and Rescue Department sent me this picture of that 60s era ambulance. It's exactly as I remember it and I'm glad to have it. Those ambulance attendants with their Red Cross first aid cards were a part of the legacy that made my job as a paramedic many years later possible. Perhaps you have a similar story – something from the “vintage” days of EMS that inspired you or got your attention. Or maybe, you never had a job in EMS, but you still have a story or a memory about some long-ago interaction with an ambulance crew doing the best they could to save a life or to help someone. This history - this legacy - is

what The National EMS Museum and our publication EMS Historian is all about.

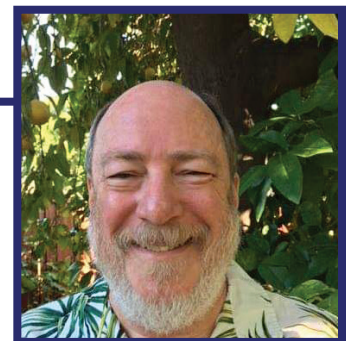
We hope you enjoy this second issue of the EMS Historian as you read about the people, innovations, services, and organizations that helped make our modern EMS systems what they are today. You'll learn about the Freedom House Ambulance Service in Pittsburgh - the first advanced life support system in the U.S., significant changes in EMS technology over the years, women's roles on ambulances over the years, and about “breadbox” ambulances in New York City.

We have several other interesting articles also - including one submitted by a “sister” museum - The National Museum of Civil War Medicine. We're very happy about our collaboration with them and we're glad to bring this important part of our “shared” history to our audience.

We're a part of a continuum - constantly adding to the impressive story of EMS. Help us to tell that story in future issues! Please strongly consider becoming a member of The National EMS Museum if you aren't a member already. Memberships are a big part of our funding and help us to keep telling these amazing stories - for years to come.

And think about what the people in our EMS systems do every day for their communities. They're vitally important - and work hard to serve you.

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Fred Claridge retired in 2020 after a forty-one year career in EMS. He served as a field provider in both rural and urban systems, a paramedic preceptor, an instructor, a paramedic program director, and as an EMS administrator.



Working in a Breadbox Ambulance

*By James P. Martin, Division Chief (retired)
Fire Department of New York – Bureau of EMS*

What was it like to work on the ambulance in New York City 50 years ago? The following is a compilation of recollections from a number of veterans who rode the ‘bus’ when EMS was in its infancy.

Urban ambulance design has evolved slowly over the decades, with streamlined Cadillac and Packard professional cars dominating the market from the late 1930’s and 40’s. In the early 1950’s, New York City (NYC) purchased a number of vehicles from the Franklin Body & Equipment Company, who specialized in steel bodies welded to pickup truck chassis. In the early 60’s, aerodynamic and economical step van style trucks were equipped

with lights and siren and served the city as municipal ambulances. All remained in service for a decade or more, unless they were wrecked beyond repair. None were fitted with the basic amenities we know today, including on-board oxygen, suction or even cabinetry to hold supplies and equipment.



The first aluminum ‘Breadbox’ ambulances arrived in 1966, built on Long Island by Grumman Olson, painted red and white, replacing the 10-year-old blue and gray Department of Hospitals Metro trucks. All were equipped with 4-speed manual transmissions requiring the Motor Vehicle Operator (or MVO, as they were known) to perform multiple tasks simultaneously while driving - a real challenge to do safely. The ‘Breadbox’ nickname came about for two reasons: 1) the truck resembled a breadbox and 2) many local bakeries like Silvercup and Wonder used the



identical vehicle to deliver their goods to local markets.

The mechanical siren was mounted on a metal grille guard attached to the front bumper. When the next consignment of red and white breadboxes arrived in 1969, the siren was relocated under the hood, where much of the noise was reflected back into the cab and “was so loud, it would rattle the metal plates in the floor” according to retired paramedic (and former MVO) Mark Peck. “It was deafening,” says Robert McCracken, retired Chief of EMS, who was appointed as an MVO in 1972. “And a nightmare to drive - a sudden crosswind would make the Breadbox change lanes abruptly” added McCracken. To make matters worse, the rubber seal around the ‘doghouse’ (the engine cover that extended into the cab) quickly deteriorated, allowing noise, heat and fumes to enter the ambulance. Again, per McCracken: “If you drove through an icy puddle, you got a bath. I frequently went home with a headache and wet shoes.”

“The radio control head was mounted above the windshield where only the driver could reach it, because the technician was supposed to ride in the back. You would have the radio handset in your left hand and had to shift gears with your right. There was no power steering, so you definitely needed two hands to steer. Operating the siren (on the horn button) required one more. It was a five-hand operation performed by an MVO with only two. On top of that, the Breadbox also had no power brakes, no air conditioning and the

heat and the defroster hardly worked in the wintertime,” continued Chief McCracken.

“The breadboxes were so cold and drafty in the winter, you had to wrap yourself in a blanket to keep warm” adds Lt. Roy David, a former MVO and now the ‘senior man’ in EMS with 46 years on the job. “In the summer, it was like an oven inside, unless you drove with the front sliding doors open, which everyone did. The driver’s seat was on a metal shaft attached to the floor and could be adjusted up and down so the driver could reach the pedals. There were three silver toggle switches on the instrument panel, one for the rotating red Beacon Ray, one for the front and rear alternating warning lamps and one to switch the button in the middle of the steering wheel from horn to siren. In the back, two small overhead lamps illuminated the patient compartment. There was no on-board oxygen and no removable stretcher, just two squad benches along each wall upholstered in burgundy Naugahyde. But the backrests were hinged at the top so you could rotate them up, with canvas straps to attach to clips on the ceiling and use them to

It was a five-hand operation performed by an MVO with only two. On top of that, the Breadbox also had no power brakes, no air conditioning and the heat and the defroster hardly worked in the wintertime.

transport two additional patients. Supine patients were transported to the ambulance primarily on a traditional ‘pole and pad’ stretcher, which was then placed on one of the squad benches on either side. There were no seat belts anywhere, except a lap belt for the driver.”

“Very unstable on a windy day or trying to make turns over 25 m.p.h.” recalls retired Capt. Jack McGonnigle. “It was a struggle to get the bus up to 50. With only one seat in the cab, the technician, who was supposed to sit in the rear, instead rode standing up in ‘the well’ holding onto a vertical steel pole, like you were riding on the subway. Cabinetry was non-existent. You carried everything you needed in your tech bag and replenished it at the ER when you dropped off your patient.”

In 1971, a half dozen or so longer ambulances were purchased from the Linn Coach company. These versions had an extended 4-5' overhang behind the real wheels, which would scrape the ground going up the ramp at the old Lincoln Hospital and get stuck in the dirt incline opposite the old Queens General Hospital garage.

Returning to the shorter design, the last version of the Breadbox was delivered in 1972 and was the first city ambulance to feature an on-board oxygen delivery system, using a pair of 'E' cylinders connected to a wall outlet. Crews also used a portable inhalator/ventilator known as a Reviv-A-Life (see photo). These orange and white vehicles were the first with electronic sirens, mounted inconveniently under the dashboard by the driver's left leg.

Again, Mark Peck remembers: "The installed suction system got its vacuum directly off the engine. If the jar got full, the contents could be sucked into the manifold and the engine would die. They were so light in the rear, in the winter we had to put chains on the rear wheels, so they had some traction in the snow." He adds: "A wooden cabinet in the rear corner of the ambulance stored the scoop stretcher and backboard. At the top, a small storage bin held a few bandages, sandbags for spinal immobilization, a set of air splints and bottles of nasty smelling green soap that I never saw used. There was a single-level Ferno cot, that I was admonished 'never comes out of the ambulance.' Instead, the poles and pads were used to move the patient onto the ER stretcher. Once the patient was transferred, it was like a magic trick ... swiftly pulling the pads from under the patient without moving him."

Retired Deputy Chief Randy Hirth noted that following a long-standing practice, on assignments,



MVO's would remain with the ambulance while the technician would go upstairs alone to evaluate the patient. There were no portable radios, so if assistance was required, the ambulance tech would yell out a street-facing window or would call the dispatcher (using the patient's landline telephone) and ask the dispatcher to have the MVO come upstairs with whatever was required, usually a stair chair.

"I remember the newer orange and white Breadbox ambulances were fitted to carry three stretcher cases - one on the rolling cot, another on the bench across from the rolling cot and the padded backrest of that bench could be lifted up and secured to the ceiling with canvas straps," recalls retired Lt. Tommy Kern. "When I came on the job in 1972, mostly everyone could drive a stick; there were still plenty around. I don't know if that would work today." Kern continues: "The breadboxes had plenty of headroom to work in, but you got bounced off the walls a lot. They were top heavy - you had to be very careful when making sharp turns; I saw a few roll over. Never me, thank God. When I started, Brooklyn and Queens were on the same frequency as were Manhattan and the Bronx. Forget about getting a transmission in, units were constantly stepping all over each other."

There were 14 municipal hospitals and most hospital ambulance garages had only three ambulances and all changed tours at the same time. After returning from a call, crews would await their next assignment in the driver's room. They would read, talk, play cards or nap, if it was quiet. According to Tony Ciorciari, M.D. (a former ambulance technician): "Dominos was the game of choice at the Greenpoint garage." Unless it was very busy, calls were rarely dispatched



by radio. The borough dispatcher would assign the call by telephone. The senior technician in the garage would receive the assignment, write it on a 'pink slip' and hand it to the next crew in line. Most techs were men and women of color, while the MVO's were a diverse mixture of white, Latino and black. According to Lt. David, in 1974, only nine ambulances covered the entire Bronx on the midnight shift.

“After midnight, there was no supervision – either on the road or in most stations. One Garage Foreman -equivalent to today's Lieutenant - covered the entire city and would solve any problems that came up” according to retired EMS Deputy Chief Randy Hirth. “The boss on the evening tour would turn out the midnight crews, then go home.”

In 1980, after 14 years of service, the Breadbox ambulance was mostly retired from emergency service, a victim of new, enhanced federal Department of Transportation ambulance specifications. But a few lived on for several more years as spares, while most were relegated to providing on-grounds patient transfers at

the Jacobi, Kings County and Queens General hospital campuses. One Breadbox was converted to a Field Communications Unit, employed at events such as the New York City Marathon and New Year's Eve Times Square celebration.



James P. Martin first trained as an EMT in 1973. After being hired by NYC EMS, he completed paramedic training at Albert Einstein College of Medicine in 1979. Martin was instrumental in establishing EMS's EVOC program and served as a supervisor in the Special Operations Division. He has done extensive research into the history of NYC's municipal ambulance service. In 1993, Martin designed the NYC EMS Museum, which is housed at the FDNY's EMS Academy. He retired as Chief of EMS Training in 2010.



Reflecting On the Evolution of EMS



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His impact on the private ambulance industry ran deep. In fact, in 2020, Mr. Hall was named by the National EMS Museum and California Ambulance Association as being one of 17 native Californians responsible for shaping EMS in the United States.

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The Life and Death of the B.R.A.

The Berg Resuscitation Apparatus

By Kent Berg, EMT-Paramedic, (Former) Captain of Field Operations - Greenville County (S.C.) EMS

Many years ago, I was frustrated. Dealing with cardiac arrests with a two-person crew was difficult, if not impossible. It meant doing nothing more than basic two-person CPR (cardiopulmonary resuscitation) until back-up arrived. That delay in getting additional manpower meant one of two things: either CPR had to be paused often in order to initiate ALS procedures; or we had to perform uninterrupted CPR without ALS until backup arrived. Either way, it often resulted in poor patient outcomes.

In 1984, I dreamed about a device that would be inexpensive, lightweight, simple to operate and that would make CPR more effective - and would take fewer personnel to perform it. I knew there were other devices that mechanically performed CPR, but they were expensive, heavy, took time to set up and required at least one tech to assemble and place them on the patient.

I worked diligently on this idea, and eventually put together a team that included myself, Hurschell Mathews B.S., EMT-P and Michael Hawthorne B.S., EMT-P. We created a company called Hursch Enterprises, Inc. It took four years to get the design right, get it reviewed by the most respected authorities in EMS, approved by the FDA, tested in field trials, patented, manufacturers found, and finally to get it to market.

The device was named the Berg Resuscitation Apparatus - or B.R.A. for short. It was based on what was then the time-tested, universally accepted oxy-

gen-powered Demand Valve. During the 1980's, Department of Transportation standards required that a demand valve resuscitator be on every licensed ambulance in the United States. The B.R.A. was an add-on accessory that relocated the demand valve away from the top of the mask or the top of an ET (endotracheal) tube and remotely controlled its activation from the hand of the rescuer performing chest compressions. The B.R.A. improved BLS CPR by allowing one EMT to activate the demand valve ventilations

The B.R.A. improved BLS CPR by allowing one EMT to activate the demand valve ventilations with the remote trigger while performing chest compressions. The second rescuer could concentrate on a more effective two-hand mask seal.

with the remote trigger while performing chest compressions. The second rescuer could concentrate on a more effective two-hand mask seal. This improved the volume of oxygen delivered by minimizing mask seal leaks and by improved timing of interspersed breaths.

For ALS systems, once B.R.A.-assisted BLS CPR was established and the patient was intubated, the B.R.A. system was attached to the ET (endotracheal) tube. The rescuer previously creating the mask seal was then completely free to perform ALS procedures like starting IVs and drug administration while the second medic performed uninterrupted two-person CPR alone. According to the Hursch Enterprises' technical manual, when the B.R.A. was used with a 40 LPM demand valve, the B.R.A.:

- Provided quick, effective, ventilations that met AHA and PHTLS recommendations.

The Berg Resuscitation Apparatus

“Because Man Only Has Two Hands!”



FIG. 1
Basic Life Support

Whether your service is BLS or ALS, the Berg Resuscitation Apparatus can help you administer safe and effective ventilations while eliminating personnel shortages and saving money. The B.R.A. combined with your 40 l/min. demand valve is a simple yet effective resuscitator.

The B.R.A. allows two medics to perform two-person CPR by allowing one medic to control both the ventilations and chest compressions with the use of the remote trigger. Now the second medic can concentrate on a more effective two-hand mask seal and other advanced airway procedures.

Once the patient is intubated, one medic is now completely hands-free to perform ALS procedures while the second medic continues to perform uninterrupted two-person CPR alone. FIGURE 2

The B.R.A.'s simple design makes it easy to be used by both Basic or Advanced Life Support Teams. The B.R.A. is lightweight, can be used almost anywhere, and costs hundreds of dollars less than other ventilators. For a no obligation 30-day trial of this unique product, simply send us a letter on your service's letterhead. Experience for yourself the advantages of the B.R.A.



FIG. 2
Advanced Life Support



Remote Trigger allows the rescuer to control ventilations while performing other functions, i.e. creating two-handed mask seal or chest compressions.

Coiled steel cable stays flexible and functional under repeated punishment

Alert valve sounds a tone when resistance pressures approach 50cm H₂O, as in obstruction or poor lung compliance.

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- Featured a 50 cm H₂O audible alarm/valve to signal airway obstruction, high airway pressure, or poor lung compliance.
- Provided instantaneous control of flow and volume
- Cost was hundreds of dollars less than existing ventilators and CPR devices.
- Could be set up in seconds.
- Was compact and simple to operate.
- After intubation, allowed two-person CPR to be performed by one person.

Mr. Patrick Browning, the Director of Greenville County EMS and Medical Control Physician Dr. Marty Lutz, approved field trials of the device. Paramedics reported an increase in cardiac “saves” and improved ability to accomplish timely ALS even prior to back-up arriving. The B.R.A.'s very first field use was a “save” with the

following blood-gas analysis upon arrival at the ER: PO₂-500, PCO₂-18, pH-7.1. A B.R.A. was also delivered to the University of Pittsburg's Center for Emergency Medicine where it was evaluated by David Thomson, MS, MD, Donald M. Yealy, MD, Michael B. Heller, MD, and Walt A. Stoy, MS, EMT-P. They ran CPR simulations with the B.R.A. and then with the BVM. In a report published in the October-December 1991 issue of the Journal of Prehospital and Disaster Medicine, they stated: “[testing] demonstrated a striking difference between the resuscitator bag and the B.R.A. The mean volume produced using a resuscitator bag and Sealeasy mask was 0.35±0.19 liters. On the other hand, the B.R.A. with the same mask produced a tidal volume of 0.81±0.26 liters – over twice that of the bag (p-.0001).” They also noted: “Although the resuscitator bag is a time-honored method of ventilation, several problems have been noted with its use. The striking difference between the devices in the single rescuer portion of the study suggest that the B.R.A. may have a significant impact on the ability of prehospital care providers to mask-ventilate patients. Its greatest utility will be in those situations in which only one attendant is available to manage the patient, as in the case in some EMS and aeromedical systems.”

Thom Dick wrote the B.R.A. up favorably in the Journal of Emergency Medical Services. So did Scott Bourn. Vincent Verdile, MD (Associate Medical Director, Bureau of EMS, Department of Public Safety, Pittsburgh, PA) mentioned the B.R.A. as an emerging device in the March 1990 issue of Emergency magazine. Peter Safar, MD, the father of modern-day

CPR and head of the Resuscitation Research Center at the University of Pittsburgh Medical School gave the B.R.A. two thumbs-up, called it ingenious and requested one for his center. The B.R.A. was purchased by EMS services, rescue squads, private ambulance services, EMS training centers, even the U.S. Navy. Then the bottom dropped out.

Published research indicated that some basic demand valves on the market exceeded recommended flow rates, and none had high resistance/high pressure audible alarms. Gastric insufflation and vomiting with aspiration were of concern. These concerns rippled throughout EMS systems across the U.S., and suddenly demand valves fell out of favor.

The B.R.A.'s original design had already corrected those concerns by modifying demand valve pressures, volumes, and even had an audible alarm for when insufflation pressure approached unsafe levels. Nevertheless, since EMS providers were no longer using demand valves, B.R.A. sales flatlined. By 1991, the B.R.A.s short life was over.

I look back today and do not regret a moment. I am so glad for the experience. Rubbing elbows with and

being praised by some of the greats in the Prehospital Care community was amazing. Meeting Dr. Safar was the highlight of my career. Creating something from just an idea and watching it become a reality was truly my dream come true. Was I disappointed that the B.R.A. joined the likes of MAST trousers, and EOAs? Sure. But at least I can look back and say proudly that for a short shining moment, the B.R.A. lived, and today it's a part of the history of EMS.

Kent Berg spent thirty years in public safety, rising to the rank of Captain of Field Operations, supervising 90 paramedics, four lieutenants, four sergeants, twelve corporals, and eight dispatchers for Greenville County EMS in South Carolina. He is a proud member of The National EMS Museum and has donated his collection of classic and antique memorabilia, equipment and medical devices.



The National EMS Museum is restoring a 1954 Henny Packard ambulance! We've done a lot of the restoration work already - especially mechanical - but much remains to be done.

To learn more about the 1954 Henny Packard Junior Ambulance, visit NEMSM's Garage @ https://emsmuseum.org/1954_packard_ambulance/

If you are a classic car lover, will you help us get this unique "work horse" back on the road and help to tell the story of early pre-hospital care in the United States?

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The First EMS System in America?

Jonathan Letterman and the Medical Response to America's Bloodiest Day

By John Lustrea

Director of Education - National Museum of Civil War Medicine

Jonathan Letterman changed the course of the Civil War and of American medicine. His retooling of the Union Army's Medical Department during the chaotic battles of 1862 made him a hero of Civil War medicine. Faced with the demand for change, Letterman developed the Ambulance Corps and a new emergency medicine system designed to care for wounded soldiers from the moment they were injured all the way through long term recovery; it was called the Letterman Plan. The newly created Ambulance Corps and Letterman Plan debuted on September 17, 1862 at the Battle of Antietam. Letterman's achievements at Antietam, the bloodiest day in American history, are highlighted at the National Museum of Civil War Medicine and his headquarters on the battlefield at the Pry House Field Hospital Museum.

Letterman became the Medical Director of the Army of the Potomac on July 4, 1862. When Letterman took command, the Civil War had been raging for more than a year. Letterman had distinguished himself during a long career as a U.S. Army surgeon since his graduation from Jefferson Medical College in 1849.

Prior to Letterman's promotion in 1862, the Army of

the Potomac's medical corps was unable to grapple with the scale of Civil War combat. His selection as Medical Director for the most important Union army in the field represented a censure of the former medical officers who held the post during the first year of the war. They had largely failed in their duty to adequately care for those wounded on the battlefield and those sick in the hospitals. At the first major battle of the war, the Battle of First Bull Run in July 1861, many of the 5,000 combined casualties were left on the battlefield to suffer for five to seven days in the hot sun. The medical department of the United States Army had failed them.

Letterman arrived at a crucial time in the Civil War. Slightly over a month after his appointment, Confederate General Robert E. Lee and his Army of Northern Virginia began crossing the Potomac River into Union-controlled Maryland. Another battle with ghastly casualty figures seemed imminent. The stage was set for the biggest challenge of Jonathan Letterman's life.

The Development of the Letterman Plan

His first task was to bring all the medical supplies and ambulances from their base on the Virginia Peninsula to the anticipated battlefield in Maryland. This required bringing everything up the Chesapeake Bay from Fortress Monroe to Washington and Baltimore. Once the supplies were there, Letterman had revolutionary ideas for their usage during the battles to come.

At the start of the Civil War, ambulances were under the authority of the Quartermaster Department and were often used to haul supplies instead of those needing emergency medical care. Letterman not only brought them under the command of the Medical Department but required the newly created Ambulance Corps' members to be specially trained in medical evacuation. Instead of a randomly assembled group of musicians and other soldiers to act as stretcher bearers, a team of trained professionals would be on hand to help the wounded. Letterman had created the first dedicated ambulance service in the United States Army.

The Ambulance Corps was just one part of his plan. Once the wounded were brought in, Letterman sketched out a tiered system of care to evaluate and treat each patient. Thanks to Letterman, his surgeons now had a plan to triage the wounded, striving to give them the best possible chance to survive and to rejoin the fight after recuperation. While they didn't identify it as such, Letterman's directive marked the first time triage was officially instituted in the American military.



In addition to creating the Ambulance Corps and new triage system, the Letterman Plan created a whole system dedicated to improving the treatment and chance of survival of wounded soldiers. The plan ensured that wounded soldiers would be cared for from the moment they were injured all the way through long term recovery.



If a soldier was wounded, they would be treated first just behind the front lines at a Field Dressing Station. The goal for the doctors was to stop the bleeding and triage the wounded. Once that was done, the wounded would be sent via horse-drawn ambulance to a field hospital set up a mile or two behind the lines where major surgery took place if needed. Once the soldiers were well enough to be moved, they would be sent back to larger general hospitals located in major cities for long term recovery.

The Plan's First Real Test

The Letterman Plan was first implemented at Antietam. At the beginning of the battle, the system worked as it was intended. A field dressing station was established at the Miller farmhouse adjacent to the infamous Cornfield. From there, patients were sent to field hospitals at the nearby Poffenberger Farms (where Clara Barton arrived on the field with food and medical supplies). After the battle, general hospitals were established both near the field at Smoke-town for the wounded who could not travel and in Frederick for those who could.

Letterman had done his best to select prospective hospital sites throughout the campaign. As the army



passed through Frederick days before the battle, Letterman noted which buildings could serve as impromptu general hospitals in the event of a substantial battle. Likewise, the day before Antietam, Letterman scoured the surrounding landscape identifying structures that could be used for field hospitals. The forethought Letterman put into finding suitable hospital sites provided the Medical Department with important direction when the battle broke out.

There were some stumbles amidst the overall success. For example, when surgeons tried to set up a field dressing station at the Roulette Farm near the sunken road area of the battlefield, they wound up too close to the battlefront. Cannon shells started going through the building which forced them to move further to the rear. No matter how good a plan was, Civil War battlefields never took place in ideal conditions.

The Letterman Plan was only as effective as the people who carried it out. The Union 9th Corps had been transferred to the army from a different department shortly before the battle, so they were the one unit that was not fully trained in the Letterman Plan. That disorganization created some challenges when

9th Corps soldiers initially fell on the field. Fortunately, they were part of the last action of the day, so the medical personnel of the 9th Corps were able to follow the lead of the trained Ambulance Corps.

Despite those and other setbacks, the results of the Letterman Plan's initial trial by fire speak volumes. The two armies left behind 23,000 casualties and over 17,000 wounded scattered across the battlefield. Thanks to the work of the Ambulance Corps and the efficiency of the Letterman Plan, all wounded were removed from the battlefield within 24 hours of the end of the battle, an incredible feat considering the department's previous performance at First Bull Run a little over a year before.

Wounded soldiers from Antietam were not the only ones to benefit from Letterman's innovation. The policies he put in place were important in caring for the wounded in the many bloody battles to come. He personally oversaw the Medical Department's response to the battles of Fredericksburg, Chancellorsville, and Gettysburg.



Letterman's Legacy

Jonathan Letterman resigned from his position as Medical Director in January 1864. His plan lived on, however, as law. In March 1864, the United States Congress implemented Letterman's changes across the entire United States Army. They remain today, a basis for our military's modern network of emergency medical treatment and hospitals for wounded soldiers. The significance of Letterman's work was not lost on Major General Paul Hawley, Chief Surgeon of the European Theater in World War II over 80 years later: "I often wondered whether, had I been confronted with the primitive system which Letterman fell heir to at the beginning of the Civil War, if I could have developed as good an organization as he did. I doubt it. There was not a day during World War II that I did not thank God for Jonathan Letterman."



National Museum of
Civil War Medicine

John Lustrea is the Director of Education and the Website Manager at The National Museum of Civil War Medicine. He earned his Masters Degree in Public History from the University of South Carolina. Lustrea previously worked at the Harpers Ferry National Historical Park during the summers of 2013-2016.



Rucker Wagon



The most successful ambulance wagon model was the Rucker, which remained in use with some changes into the Spanish American War. The National Museum of Civil War Medicine is currently restoring this reproduction wagon which will soon be back on display at the Pry Field Hospital Museum.



The National EMS Museum's Mobile Museum Project

Submitted by Mike Williams, NEMSM Volunteer and Former NEMSM Executive

Currently, there are three important issues affecting EMS and its future. Public recognition, EMS identity, and recruiting and retaining of personnel. Nationally, we are reaching a crisis point from which we may not recover. As the national organization dedicated to celebrating EMS and its incredible contributions to society, it is NEMSM's responsibility to share stories of the past that inspire the next generation of providers and celebrate the incredible work current providers do every day. The Mobile Museum Project will do just that: Celebrate our EMS colleagues, inspire generations to explore careers in EMS, and show visitors how to advocate for first responders both nationally and in their communities.

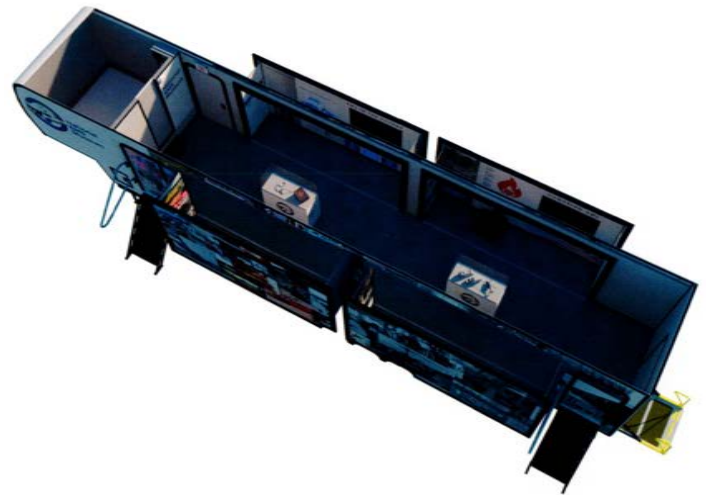
WE ARE EMS is a 540 sq ft walk-through exhibit housed in a 49-foot expandable, fifth wheel trailer

that will tour the country annually, up to 36 weeks in a 12-month cycle, with stops that include EMS conferences, government buildings (such as city halls, state and national capitals), schools, mass gathering events, and community centers. We will encourage local EMS agencies to host WE ARE EMS when it is in their area. Through this support from local EMS agencies, the Mobile Museum will provide a meeting point for local providers to connect with the people they care for and will allow them to share stories about their life changing and heroic work and have the opportunity to engage students in exploring EMS as a long-term career.

When WE ARE EMS rolls into venues, it will garner unique and positive media attention bringing a spotlight to EMS, the local agencies, and the exhibition partners that made WE ARE EMS possible.

Other museums like the Smithsonian Institution, World War One Museum, and the Library of Congress have significantly increased their outreach and engagement numbers through their own mobile museum projects and their sponsors have received a lot of positive media exposure. These moving museums have attracted the attention of national media outlets like Good Morning America and the Wall Street Journal as well as local media looking for community stories that inspire their viewers and readers. WE ARE EMS will garner maximum exposure for the companies and organizations that partner with NEMSM in production and touring.

Production is ready to begin once funding is secured. NEMSM is currently seeking Title Partners that will provide the initial funds of \$150,000 to build out the exhibit and funding of \$500,000 to send WE ARE EMS on tour for 36 weeks annually. WE ARE EMS Title Partners will receive an incredible opportunity to raise awareness of their brand and be recognized as a champion of EMS across the country. We will work closely with you to determine how you can best leverage WE ARE EMS for your brand's goals and objectives.



WE ARE EMS is a 540 sq ft walk-through exhibit housed in a 49-foot expandable, fifth wheel trailer that will tour the country annually, up to 36 weeks in a 12-month cycle, with stops that include EMS conferences, government buildings (such as city halls, state and national capitals), schools, mass gathering events, and community centers.

Mike Williams, retired EMS Chief Officer, Executive and State Director, along with Dr. Jon Krohmer, former Director of the Federal Office of EMS, and Museum Director Kristy Van Hoven are spearheading this project. Together the project team brings decades of experience in EMS training, education and public outreach and museum design to the team. NEMSM board members and volunteers will also contribute throughout this project.



Brewco Marketing Group (BMG) and Triune Specialty Trailers are working with NEMSM to create WE ARE EMS. BMG is an award-winning Experiential Marketing company that is trusted by companies like IBM, LG, PSEG, Kohler, Leidos, McDonald's and the National Baseball Hall of Fame to engage their target audiences where they work, live, and play. Triune Specialty Trailers has successfully designed, produced and operated mobile museums for organizations around North America, including the Smithsonian, Library of Congress,

Detroit Institutes of the Arts, Abraham Lincoln Museum and a large variety of educational displays for specific industries and organizations.



Mike Williams is a current NEMSM volunteer focusing on the mobile museum project after serving as a museum executive for nearly a decade. He has had a fifty-plus year career in EMS, serving at all levels in the industry from "ambulance driver" in his hometown of Detroit, through EMT and paramedic to Regional CEO of the nation's largest EMS provider. He also served as the Director of EMS and Trauma for the State of Florida. In addition, he served twenty years active duty and reserve in the Air Force as a medic, medical instructor and pilot and went on to become a squadron commander, serving in several areas of conflict.

If you or your organization are interested in contributing to WE ARE EMS, please contact:

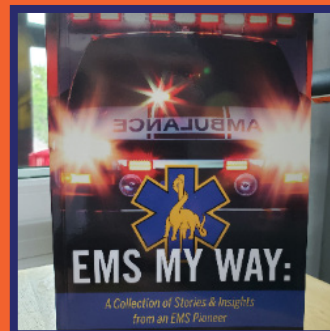
Kristy Van Hoven:

director@emsmuseum.org – 612-298-4567

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You can find all kinds of items there, including mugs, challenge coins, books, and tee shirts! Every purchase helps fund the Museum. Everything is reasonably priced. These items make great gifts during the holiday season!



EMERGENCY!



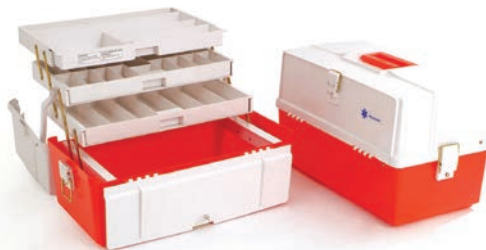
The March of EMS Technology - Past, Present, and Future

By Rod Brouhard, EMT-P, Operations Manager

EMS technology and practice has come a very long way from the days of Johnny and Roy on Squad 51. Consider the following:

Johnny had the Plano 747 tackle box filled with meds and supplies. Roy lugged around the Biophone to contact Rampart for online medical control. They worked in perfect choreography to stabilize the patient. At least once in every episode they flipped the plastic tops off the preloaded syringe of whichever medication was indicated. At just the right time, the ambulance EMTs would come along in the nondescript white lab coats. They'd lift the patient, strapped to a Ferno cot, into the back of the generic ambulance. One EMT would be on each side of the already collapsed cot as they fed it in head-first. One EMT then hopped in the back while the other ran around to the driver door. A fireman would close the rear doors and give them a double-slap so the driver would know they were secure. Away they would go, always with lights flashing and siren wailing.

Like many my age, I got my start in EMS as a kid watching Johnny and Roy. My dad was an assistant chief for our local volunteer fire department and would bring home the chief's mini-pumper when he was on-call. Between riding with him to



calls and watching "Emergency!" I knew what I wanted to do before I finished first grade. I joined up as a volunteer my senior year of high school and went to EMT school my first year of college (which then successfully derailed graduation for the next 19 years).

This was in 1988, nine years after "Emergency!" last appeared on television. Most of the equipment I remember seeing on the show was right in front of me, but along with those things came newer stuff. The Biophone was sitting in the spare closet, replaced by a lighter and more reliable (in theory) Motorola APCOR, but even that was a backup. Eventually, telemetry faded away as paramedics demonstrated they could reliably interpret their own EKG strips. I always worked in systems that used Physio-Control products. My first monitor was a Lifepak 5, attached to a removable, independent defibrillator. Before leaving the field role for my new job as a "desk medic" (official, spouse-imposed title) I had four iterations of the Lifepak in my ambulance.



The Lifepak 10 integrated the defibrillator so we could perform synchronized cardioversion as well as defibrillation. It also had a number that was ostensibly the rate of "R" waves showing

up per minute. The value wasn't always accurate, but it sure didn't take long for paramedic interns to rely heavily on the number on the screen instead of running a strip and counting for themselves. A clever preceptor could easily fix that problem with a piece of cloth tape across the rate shown on the screen.

Sometime during the tenure of the Lifepak 10, pulse oximetry appeared. That was nifty. Now the intern had two ways to see a rate without actually feeling a pulse or reading a strip. The crafty preceptor was going through a lot of cloth tape. It was handy to have a way to independently verify in real time if each QRS complex resulted in actual perfusion at the distal capillary level. Even the salty, yet crafty, preceptor had to admit that was something.

Along came the Lifepak 12 with its awkward lean-to design and busy screen. Pulse oximetry came built in, decreasing the potential for losing one or the other monitor at the hospital.



The Lifepak 12 was like Cliff Notes for the interns. Now they don't need to actually interpret the rhythm. The monitor will do it for them in 4- or 12-lead modes. It notifies the caregiver if the patient has a STEMI (S-T Elevation Myocardial Infarction) and, in paramedic-optional mode, it's a semi-automatic defibrillator. If all that wasn't bad enough, it takes blood pressures. There are numbers everywhere. Our crafty, salty preceptor has nearly run out of cloth tape at this point (now kept in the color-coded soft bags instead of the Plano tackle box that never wanted to close correctly on-scene when the patient was critical, and you needed to skedaddle).

Along with the evolution of the heart monitor and the drug box/bag, there were MAST (Medical or Military Antishock Trouser) pants and thumpers (mechanical perfusion improvement devices) until those were gone. Both would come back, and thumpers would stay (with new names and new mechanisms). Ambulance cots that had to be lifted into the ambulance would give way to roll-in versions and eventually powered devices that virtually load themselves.

Computers replaced paper charts and much of voice

communication over the radio, which had the effect of making the dispatch center oddly quiet. Needles today are for injection only, replaced by blunt plastic access to use with ports. Manual intraosseous needles are now inserted using the medical equivalent of a cordless drill. Vacuum splints, capnography, handheld smartphones, and video laryngoscopes are just a few of the innovations that have appeared on the ambulance in the last thirty years.

If someone would've asked me in the 90's to describe the future of EMS, I would've told them that computer charting was inevitable. To be fair, my handwriting is atrocious, and I was looking forward to the change. I was also an early adopter of cellular phones and was convinced those were coming. Roll-in cots were already here. Video laryngoscopes or smartphones? Nope. I sure didn't have that kind of vision. Mechanical compression devices had come and gone, so I figured they were out for good. And I was sure that endotracheal (ET) intubation would always be the way. Little did I know that esophageal obturator airways would give way to fancier supraglottic options.

Two things drive technology improvements in EMS: clinical care and budgets. If there's a new treatment device with sufficient clinical evidence to support its use, regulatory changes are likely to mandate the change. If a new product improves efficiency, mitigates risk, or increases reimbursement, it's likely to be implemented by providers as regulators play catch up.

Clinical care innovations move at the speed of research, which is slow. I read somewhere that medical innovations take twenty years from inception to adoption. I don't know if that's true, but I suspect adoption in EMS would be even longer since most research doesn't start in the prehospital environment.

The other stuff, however, is different. These are the same innovations that we see in other parts of our daily life. Those come much more quickly. At least it feels like it. Folks in my age group watched "Emergency!" when it first aired (not streamed) on a television made with cathode ray tubes. It didn't have a remote control



and it probably got the TV signal through an antenna. If they ate TV dinners, those were heated in the oven because micro-

waves weren't a thing. You still had to dial a telephone and it was wired, possibly even mounted, to the wall.

Take a moment to think about the things that you use every single day that didn't exist when you were a kid. The list is long no matter your age.



The question is: what's next?

We use computers to do our charting, receive dispatches, and navigate to calls—a moment of silence to remember paper map books. How often do we talk to our smartphones and tablets instead of type on them? Sooner rather than later, charting software could allow for dictation rather than drop down boxes and endless buttons. Let the platform interpret the caregiver's words and translate that to a chart that is both intuitive to use and mineable for data.

But why stop there? Tech companies are rapidly developing natural language processing capabilities, which are already available on some CAD platforms to help filter 9-1-1 calls. To really make charting easier, let Siri or Alexa (or maybe we could call it "Roy") listen to the patient interaction and chart the entire call. When handing off patient care, the EMT or medic would review the chart and submit it. Not only does it take away the least fun part of the job, it cuts significantly on time spent out of service at the hospital.

Electric ambulances are already here. With the price of fuel, it's likely implementation will accelerate, especially in the inter-facility transport market. Charging times might make many services wary of using these vehicles for emergencies, but hybrids or hydrogen fuel cells could make good intermediate options. When fully electric is ready for prime-time emergency work, imagine how much more room can be found in a vehicle that doesn't need a combustion engine or a transmission. How weird will it feel to the old-timers to grab equipment out of the "frunk" (the new name for the space under the hood where the engine used to be)?

Sick of being called an ambulance driver? Let the ambulance drive itself. San Francisco now has self-driving taxis. It's only a matter of time before ambulances will do the driving while caregivers take care of the patient.

We won't stop there. Other emergency apparatuses will follow along.

Think of how that changes design. An ambulance not driven by a human doesn't need a windshield. That could drastically alter the traditional layout of an ambulance patient compartment.

Air ambulances will also be going electric. There are—rightly so—big regulatory hurdles for electronic vertical take-off and landing (eVTOL) vehicles, so this innovation will take longer. However, electric tech makes these vehicles much more cost efficient to operate and maintain. I have a hard time picturing all of us flying around in personal aircraft like many potential manufacturers suggest, but it sure is easy to see how a nimble, cost-effective air ambulance could change the entire industry.

What else will come? Drones are already being used in law enforcement and the fire service. What will they do in EMS? We don't know yet, but they likely have a future.

Lawn mowers can move autonomously, why can't gurneys? While we're at it, they should load themselves. All monitoring equipment that currently uses buttons and screens will eventually be voice activated.

So far, I've only addressed the technology that is readily available. This is all stuff that is on the market today in some form or another. Even more amazing changes are just over the horizon. How will EMS look in another thirty or forty years? I suspect it will include things we never saw coming.

Rod Brouhard is a Regional Director for Global Medical Response (GMR) in the San Francisco Bay Area. He's been in EMS since 1988 as an EMT, paramedic, educator, and now as a certified "Desk Medic" (according to his beloved spouse). Rod lives with his wife and dogs on the foggy coast of the San Francisco Peninsula.





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The Freedom House Ambulance Service: Pioneers of Modern EMS

By John Moon, Paramedic

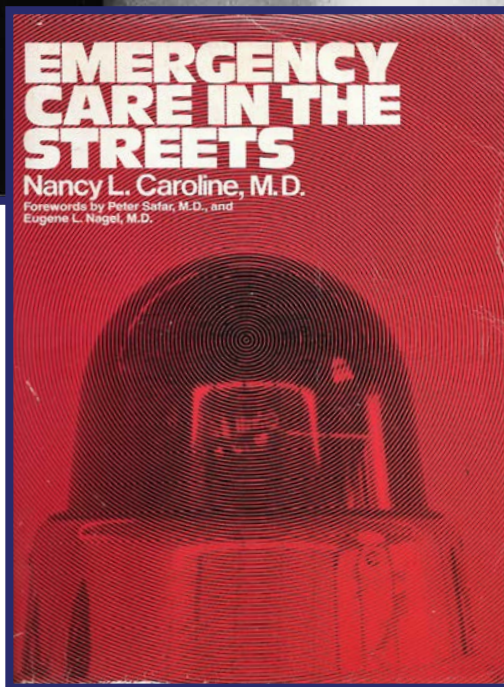
More than a half century ago - long before television ever dreamed of the show “Emergency” - a quiet revolution was beginning in Pittsburgh. An audacious, improbable experiment was begun. That local program would end up providing the national standards for prehospital care as we know it today. This experiment went by the name of “Freedom House Ambulance Service” and embodied the disparate dreams of several different individuals.

The Freedom House Enterprises Ambulance Service was created to deliver high quality emergency medical care, especially in medically deprived areas of poverty, and to create meaningful work for previously unemployed and underemployed citizens. The service answered almost 50,000 calls since it went into operation during the summer of 1968. Its continued growth, from the moment the service

was implemented, was indicative of its worth to the community.

There was a desperate need for emergency medical transportation in poverty-riddled neighborhoods in Pittsburgh like the Hill district. This became dramatically apparent through surveys conducted by the office of Economic Opportunity during the mid-sixties. It took the efforts of many dedicated individuals, including community leaders, contributing foundations and government funds to create the Freedom House Ambulance Service. It was not easy.

Mr. Phil Hallen, President of the Maurice Falk Medical Fund and former chairman of the Pittsburgh



Office of Economic Opportunity Health Committee, introduced the idea of a black-owned and operated emergency ambulance service. Mr. Edward Norian, Executive Director of Presbyterian University (UMPC) was contacted, and the project began to move.

In the University Health Center of Pittsburgh, Dr. Peter Safar was looking for a proving ground to test new methods of resuscitation outside the hospital and for an opportunity to upgrade emergency care in Pittsburgh. In the community, a biracial group of concerned citizens were looking for a means of encouraging black enterprise. In the ghetto, blacks

were looking for employment. It was out of this mix of needs that the improbable idea of Freedom House Ambulance Service took shape.

Freedom House took forty people off the street corners, out of the pool halls and trained them to provide the most sophisticated emergency medical care possible, and to provide that care not in the hospital, but

at the scene of the emergency. And not just any forty people. Each applicant had to fulfill two prerequisites: he/she must be black; and he/she must be considered "unemployable."

It was madness back in 1967. It was hard enough to persuade anyone that a layman could be trained to

provide sophisticated medical and resuscitative care. Why load the dice against the experiment and choose laymen who were least likely to succeed?

Despite those supposed challenges, that is precisely what Freedom House proposed to accomplish - and did. The position of Emergency Medical Technician to man the ambulances was designed as a “new career” through which individuals could enter the health profession. The technicians were trained to administer a wide range of resuscitative techniques required to sustain life at the scene of illness or accident and during transportation to the hospital. The training was carried out by the Department of Anesthesiology of the University of Pittsburgh at Presbyterian University Hospital and included clinical rotations in the recovery room, intensive care unit and the emergency room.

The service had a fleet of five vans, each equipped with everything needed to support life in a life-threatening situation, including oxygen equipment, obstetric delivery kits, equipment for burn treatment, EKG monitoring equipment, a cardiac defibrillator and other sophisticated tools of modern medicine.

With dispatch headquarters at Presbyterian University Hospital, the ambulances served other hospitals in the area as well as two police districts.

The mobile intensive care units comprised one of the few ambulance fleets in the country that met the stringent standards of the National Research Council and were the first such completely equipped and maintained units in the United States.



Joining Dr. Safar as the Medical Director of the service was Dr. Nancy Caroline. Under her leadership, by January 1975, Freedom House Ambulance Service embarked on an advanced training program, which was to become the official paramedic curriculum of the United States Department of Transportation and the legal standard in more than 40 states. Freedom House technicians were intensively trained in a variety of advanced life support techniques - some of the most sophisticated in the nation.

In 1974, the city decided to launch its own mobile intensive care ambulance service. Freedom House was not part of the plan, and by early August, it became obvious that city funding would not be forthcoming. Freedom House Ambulance Service would have to shut its doors.

As Dr. Caroline wrote to each FHE employee in her final memo dated: September 12, 1975:



“All of you have reason to be proud of the work you have done here. You have taken a dream and made it real. Through your efforts in the field, you have profoundly affected thousands of lives: the young, and the old, the wealthy and the indigent, the prominent and the anonymous, you have served them all, and for eight years you have provided them with a quality of prehospital care unequalled anywhere in this city. You have weathered setbacks, disappointments, uncertainties and frustrations to build an advanced life support service that is second to none—and no one can take that away from you. Freedom House should remain a symbol to all of you of what you can achieve despite enormous odds and if you take with you into the future the dedication and spirit and pride which you have shown in your work here, you will keep alive all that is meaningful and important about Freedom House. You have proven something during these eight years to yourselves and to the community --- and that is what really matters.”

Community concern sparked the Freedom House Ambulance Service, and community involvement and commitment put it into operation. The flashing blue lights on the orange and white Freedom House ambulances are now synonymous with help and hope in Pittsburgh’s black community areas as well as throughout the city.

John Moon is a former Freedom House Paramedic and Retired Asst. Chief: City of Pittsburgh EMS with thirty-four years of service. He was a member of the Freedom House 2.0 Cohort training program and was a recent guest speaker of the 19th Annual Peter Safar Symposium.



My Part in the Story

As I reflect on my years at Freedom House Ambulance Service, I can’t help but acknowledge how blessed I was to have worked with some of the most warm and compassionate people around. I was blessed to be among individuals who weren’t privileged to have ideal situations in our lives. Life didn’t swing our way - sometimes we didn’t have it all together as we should have. But we didn’t allow it to destroy us. We were determined to rise above it, despite that. I was blessed to work with people who rejected the notion of being victims of our environment, without hope or without a future.

I had an opportunity to be trained by internationally renowned experts in the field of prehospital care like: Dr. Peter Safar, who I accompanied from OR room to OR room performing endotracheal intubations on unsuspecting patients awaiting surgery. Or Dr. Nancy Caroline, who showed the utmost confidence in my ability while directing me to perform one of the very first trachea intubations outside the hospital setting, while she was setting the national standards for the paramedic curriculum. I can’t help but think of how fortunate I was to be a part of groundbreaking pioneers, the standard setters, and the entrepreneurs who gave the nation a vision of how politics, science, organization and deep commitment to racial justice could change history in small though fragile ways. Freedom House will always hold a special place in my heart. We all had one important trait in common - we had a heart for people.



Costas T. “Gus” Lambrew, M.D., MACC - New York EMS Pioneer

By Charles Mackie, NREMT-P

Dr. Costas T. “Gus” Lambrew made extraordinary contributions to the creation of a modern emergency medical service system during the 1960’s and 1970’s. He was a true pioneer in the creation of an Advanced Life Support (ALS) paramedic system, and created a medical telecommunications center in Nassau County, New York which is still utilized today.

Dr. Lambrew was born in West Orange, New Jersey in 1932. He attended Wesleyan University in Connecticut where he obtained his BS degree, then went to Medical School at Cornell University Medical College in New York, graduating with honors in 1957. Although his parents were not in the medical field, Costas - known to his family, friends and colleagues as “Gus” - was always interested in the medical field and set his sights on becoming a physician to help people in the community.

Upon graduation from medical school, he became an intern and resident physician at the New York Hospital, eventually becoming the chief resident in 1962. In 1962, he departed to become an attending physician in cardiology and a clinical investigator at the National Heart Lung and Blood Institute in Bethesda, Maryland. At the National Heart Lung and Blood Institute, Costas trained under renowned cardiologist Dr. Eugene Braunwald. In 1964, he returned to the New York Hospital to become the Assistant Director of Cardiology. In 1966, he left New York Hospital to take a position as the Division Chief of Cardiology at Meadowbrook Hospital, which later became Nassau County Medical Center.

In November of 1966, Dr. Lambrew’s father-in-law died suddenly at his residence from a witnessed cardiac arrest at the age of fifty-eight. Although his father-in-law’s cardiac arrest was witnessed, there was no first responder training in CPR, or trained medical personnel and resuscitation equipment available to resuscitate his father-in-law. Costas became disheartened and angry that the first responders had

no CPR training, and that there was a lack of training and equipment available to the residents for out of hospital medical treatment. This tragic family loss motivated Dr. Lambrew to build a modern EMS system in Nassau County. Working with the Advanced Coronary Treatment (ACT) Foundation, the American Heart Association, and the National Heart Lung and Blood Institute, he started a campaign to have police officers and firefighters trained in CPR (training not previously offered) and helped to pass a state law in New York to make that possible.



Back in the 1960’s, the Nassau County Police Department had an ambulance service for the emergency transportation of sick and injured persons, but the ambulance personnel had minimal first aid training. The volunteer fire departments also had ambulances, but the training of their personnel was also lacking. So, during 1969 to 1971, assisted by some grant funding, Dr. Lambrew developed a training program to build upon his knowledge and skills in cardiovascular resuscitation to educate and train first responders. During this period, he researched and collaborated with other EMS visionaries, including doctors Pantridge and Geddes in Ireland, Dr. Grace in NYC, Dr. Nagel in Miami, Dr. Warren in Columbus, Ohio, doctors Crily and Graf in Los Angeles, and Dr. Cobb in Seattle. During this time, EMS in the country was evolving, and these pioneers were in the process of developing paramedic systems across the nation. This collaboration was all occurring approximately two years before the popular show “Emergency” debuted on television, and prior to the EMS Systems Act in

1973. One of the differences between the other EMS pioneers and Dr. Lambrew was that he was the first to utilize career police officers, emergency medical technicians and volunteer fire service personnel in the same paramedic EMS system. This was an issue that most EMS systems did not have to overcome.

During the late 1960's and early 1970's, and during the next several years, Dr. Lambrew created an advanced paramedic training program, assisted in the installation of telemetry and communications equipment and defibrillators in county ambulances, and along with the assistance of other healthcare professionals, he personally trained career police officers, emergency medical technicians and volunteer fire department personnel to become paramedics.

During that same time, he also created one of the first medical communications and telemetry centers in the nation at Meadowbrook Hospital (later renamed Nassau County Medical Center) in East Meadow, NY. This communications and telemetry center allowed the paramedics in the field to communicate with doctors in the hospital emergency department, to transmit electrocardiograms (ECGs), and to receive medication and treatment orders for their patients, prior to and during transport to various hospitals in the county. The original communications center, known as "Cardiac Base" is known today as the Costas T. "Gus" Lambrew M.D. Medical Communications Center at NUMC. This communications facility is still the foundation for our countywide EMS system.

By 1977, in just over eleven years in Nassau County (and throughout Long Island), Dr. Lambrew revolutionized EMS care. He had created a modern advanced life support paramedic EMS service. Dr. Lambrew became the first Medical Director of the Nassau-Suffolk Regional EMS Committee on Long Island and testified on behalf of many regional and national EMS Committees, including to the US Senate EMS Systems Committee in 1973, 1976 and 1979. He also was an authority on cardiovascular resuscitation, working with the American Heart Association, and assisted in writing the first AHA ACLS training program and manual.

In late 1977, with his wife Patricia, a registered nurse

and CPR training coordinator, and his daughters Christina, Jeanne and Kate, Dr. Lambrew left Long Island and relocated to Maine for a grant opportunity to continue his work there. He became an emergency department physician at Maine Medical Center and he and his wife Patricia also joined the local volunteer fire department as EMS providers, becoming mentors to other EMS members. He continued implementing training programs for state EMS providers and hospital staff. During his career at the Medical Center, Dr. Lambrew continued to rise through the administration ranks prior to his retirement in 2004. After his retirement, he continued to research and advocate for quality and innovative medical care to the residents of Maine, and around the country. Dr. Lambrew passed away at the age of 87 in December of 2019.

During his career, Dr. Lambrew received many prestigious academic awards, appointments and directorships, as well as many national and international awards for his cardiovascular research. He was the author or co-author of over 100 peer-reviewed articles appearing in multiple medical journals. In 2004, Dr. Lambrew was honored as a Master of Cardiology, of which there were fewer than 100 Cardiologists honored at that time.

The Maine Medical Center dedicated a yearly medical research conference in his name as he retired from the hospital board. Dr. Lambrew's work on the treatment of cardiovascular disease, cardiac resuscitation and cardiovascular research was significant, and his impact on the field of Emergency Medical Services in the United States was revolutionary, making him a pioneer of modern EMS systems throughout the country.



Charles R. Mackie has served as a paramedic, EMS instructor, Field Training Officer, and Coordinator. He served with the Nassau County Police Department as a medic from 1983 to 2015 and served in that agency's Fire-Police EMS Academy. He has been with the Massapequa NY Fire Department since 1979 and is a member of the Nassau County Regional EMS Council.



The Ambulance Sisterhood and the Beginning of a Legacy of Care

By Kristy Van Hoven, Director of The National EMS Museum

The world was bustling in the early 1900's as industries saw record breaking growth, populations were expanding and the outlook into the new century was one of progress and development. In 1908 Henry Ford introduced what would become the first work-horse automobile of the era, the Model T and Harley and Davidson were building motorized bicycles that introduced motoring to the masses. In other news, the Wright brothers and other aviation pioneers were perfecting their machines with longer flight times and safer take-offs and landings, but this sense of endless innovation and industrial growth was cut short when "the shot heard around the world" brought war to Europe in the summer of 1914 and life changed forever.

The First World War brought new oppor-

tunities for pioneering and industrious women looking to contribute to the war effort. From the beginning, women enlisted in the British and French forces to serve as transport drivers, nurses, and cooks along the front, while other women stepped into civilian roles as the war progressed and more men deployed over-

seas. In 1915 Mary Carter, an American singer, told a New York Times reporter that she had volunteered with the allied forces where she was originally assigned to a transport unit but was later given charge of an ambulance and spent her time in Europe running through the front lines transporting the wounded to field hospitals for treatment.

Carter became one of the first American women ambulance drivers in World War I.



At home, new opportunities were also presenting themselves. In 1908 the Girl Scouts had developed a motoring badge to encourage young women to learn how to operate and care for an automobile. Interestingly, the badge also required a knowledge of first aid and 'on-scene' medical evaluation. Although motoring was an upper-class activity prior to the First World War, motor bikes were an evolving avenue as access to motoring for the growing middle class. Many girl scouts took to learning all they could about automobiles and motor bikes and enjoying the new freedom driving gave them.

By early 1917 it became evident that the Wilson administration was considering joining the war and for the first time in U.S. history, as men left their civilian roles, women ambulance drivers became the dominant force in civilian services across the country. At the same time, the National League for Women's Service (NLWS) recognized a growing need for drivers to transport patients, supplies, personnel, and military VIPs and created the Nurses and Motor Corps to provide the necessary transportation services. In the spring of 1917, as the U.S. entry to the war loomed, the National League for Women's Service's Motor Corps joined forces with the American Red Cross who had developed their own District of Columbia Motor Corps to support the growing demand for patient and supply transportation both at home and abroad.

The formation of the Motor Corps was just the beginning. Florence Clarke, an early driver for the Red



Women Who Will Drive Autos in France



MRS. W. W. CHISWELL,
Of 1500 Hillmore Street Northwest.



MRS. EMILY GILL,
Of the Congressional Apartments.



MISS DOROTHY HEIBERGER,
Of Chevy Chase.

TODAY'S MARKET HINTS

Prices to retailers and general market information furnished by Bureau of Markets, U. S. Department of Agriculture; fair prices to consumers by the District Food Administration.

MOTOR GIRLS GET READY FOR FRANCE

THE WASHINGTON HERALD, FRIDAY, MAY 24, 1918.

FOR WARTIME WOMEN 'TIS UNIFORM THAT MAKES "THE FORM DIVINE"











BY MRS. BROWN

As new styles come to the fore, the Red Cross... (text continues)

These uniforms... (text continues)

THE RED CROSS... (text continues)



Cross stated, “women of the United States would do anything in their power to aid their country, should war occur, and I am simply trying to do my part.”

The Motor Corps quickly became a fully operational ambulance service as we would recognize it today. Women who were assigned to ambulances found the work incredibly fulfilling albeit physically and mentally demanding. Of the requirements for the ambulance service, women had to be able to lift patients with a partner, load supplies into the ambulance on their own and render lifesaving first aid prior to patient transportation, and each woman was responsible for the upkeep and maintenance of her assigned vehicle. In essence, each woman was trained to be mechanic, driver, supply manager and medic. The service was rigorous with up to 15 calls a day reported by some services! The Ambulance Corps grew in the first year from the singular District of Columbia service to 300 corps with 12,000 women volunteering their service across the United States.

While some women deployed as special attachments to the Expeditionary Forces to Britain and France, other women stayed closer to home starting services across the United States, and in hindsight this service expansion was just in the nick of time!

As the war raged on in Europe, soldiers and other military personnel found themselves taking leave and venturing home for an extended break from the war. Although many were pleased to see familiar sites and to have a rest from service, another more sinister “battle” was also under way. The fall of 1918 brought a devastating new reality home to America even as war in Europe ended.

The influenza pandemic (historically referred to as the Spanish Flu) saw thousands of communities around

the world devastated by the disease. Until the most recent Covid-19 pandemic, the 1918 Influenza was the deadliest disease outbreak to hit on a global scale in modern history and the women of the Red Cross and NLWS were ready to render care to their communities. From providing private transport to bringing aid or supplies to the home, and providing support for the Army abroad, the Motor Corps of both the Red Cross and NLWS worked around the clock to provide aid during the pandemic. By 1920, the cases had started to wain and life started to settle into a new normal post-war and post-pandemic. But the women of the Motor Corps had a taste of excitement they weren’t ready to give up.

The sisterhood of service born in the Motor Corps of the First World War was the beginning of a long legacy of pre-hospital care that has grown exponentially since the first women hiked their skirts and fought for their space in providing care for the sick and injured. Today, women continue to make innovative contributions to paramedicine and pre-hospital care in both military and civilian services. The legacy of those early pioneering women continues to grow into the future.



Since September 2018, Kristy Van Hoven has been the Museum Director at The National EMS Museum, although her passion for sharing medical history has been around since childhood. In addition to sharing the history of medicine, Kristy looks for opportunities to connect inspiring stories from our past to help inform health policies for today and tomorrow.

Sources:

Bell, Ryan Corbett (2009). *The Ambulance: A History*. McFarland & Company.
Hyde, Mary Kendall (1919). *Girl's book of the Red Cross*. Thomas Y. Crowell Company
The Washington Harold (1918, May 24). Red Cross Edition. Washington, DC. Library of Congress
The Washington Times (1918, August 23). FINAL EDITION. Washington, DC. Library of Congress
The Washington Times (1918, October 5). FINAL EDITION. Washington, DC. Library of Congress
The Washington Times (1918, October 25). FINAL EDITION. Washington, DC. Library of Congress
The National Women's History Museum (2018). Women of the Red Cross Motor Corps in WWI. Accessed July 2022
<https://www.womenshistory.org/articles/women-red-cross-motor-corps-wwi>

The Little Ambulance that Could

By Norm Rooker – Paramedic

Should your travels take you near the town of Silverton, just off the Million Dollar Highway in the southwest corner of Colorado or by rail on the Durango-Silverton Railroad, you just may want to take an extra few minutes to view an unassuming part of EMS and railroad history, the Casey Jones - a red and white narrow-gauge engine/car designed specifically to be a mining railroad ambulance.

Constructed from a 1915 Model T with a Cadillac eight-cylinder engine, the Casey Jones was designed and built by Clyde Jones, to be an ambulance servicing the Sunnyside Mine in Eureka, Colorado. Its use was expanded to serve all the mines in the area, transporting ill or injured miners down to the hospital in Silverton or upon discharge, back up to their respective mines.

The mine foreman and managers soon found the Casey Jones, when not in use in its primary function as a railroad ambulance, to be a handy means of transportation to and from their mines as well. Soon, it became more frequently utilized for their use to attend lodge meetings and other social functions.



Eventually, the Casey Jones was reconfigured into its current bus/dual purpose model - designed to seat 11, yet still transport a recumbent ill or injured mine or mill worker if needed. The Casey Jones was taken over by the San Juan Historical Society where it was lovingly restored and maintained to its original specifications. The railroad ambulance winters in a rail shed and in the late spring through early fall is displayed on a spur track siding just outside the historical museum. It's a few short blocks west through Silverton's former red-light district from the Durango-Silverton Railroad Station.

The Casey Jones still makes trips on the narrow-gauge railroad line. It's now used mostly for car and railroad enthusiasts as it maintains its reputation as the little railroad ambulance that still can.

A self-admitted "failure at retirement," Norm has been involved in EMS & Rescue since 1973. His career has covered numerous venues from the City of St. Louis to the streets of San Francisco to the mountains of Colorado. It was while serving as the Chief of Ouray County EMS, 23 miles north of Silverton, that Norm & his wife Vicki, also a paramedic, first came across the Casey Jones.



Notes:

<https://www.sanjuancountyhistoricalsociety.org/casey-jones.html>

https://en.wikipedia.org/wiki/Durango_and_Silverton_Narrow_Gauge_Railroad#Casey_Jones

<https://www.sanjuancountyhistoricalsociety.org/casey-jones.html>

<https://thecarhobby.blogspot.com/2011/12/silverton-northern-casey-jones-railbus.html>

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Important Dates in the Development of Trauma Care

By Merry McSwain, (retired) ACNP

According to the Centers for Disease Control and Prevention (CDC), traumatic injury is the leading cause of death for children and adults under the age of 44, accounting for 10% of deaths worldwide. Dr. Ken Maddox has postulated “that over the past 100 years, our approach in medicine to major problems, such as hypovolemic shock, seems to follow a rhythmic ... pattern similar to a pendulum moving back and forth as we go too far, then too little, then too far ...”⁽¹⁴⁾

1674: First reported use of a tourniquet for hemorrhage control by a French army surgeon. The term tourniquet originated from the French “tourner” meaning “to turn.”⁽¹⁾

1818: First recorded human-to-human blood transfusion - British obstetrician and physiologist James Blundell performs the first recorded human-to-human blood transfusion.⁽¹⁰⁾

1800s:

Jean Dominique Larrey, Napoleon’s chief physician, develops

a system to treat and transport injured French soldiers.



1880: Thomas splint and Thomas half-ring splint is developed by Owen Thomas of Liverpool.

This splint is given credit for reducing deaths in WWI by 80%.⁽³⁾

1862: Dr. Jonathan Letterman - the “Father of Modern Battlefield Medicine” - a medical director in the Union Army, introduced an Ambulance Corps as a means to transport wounded soldiers. Prior to then, the Quartermaster Corps provided wounded transport as part of its duties to transport supplies.⁽²⁾

1903: George Crile, MD develops an inflatable rubber suit to auto-transfuse hypotensive patients prior to surgery. A few years later, Dr. Crile reported successful use of his inflatable suit on a patient who was apparently in irreversible hemorrhagic shock. However, the suit developed leaks and was abandoned.⁽⁵⁾

1911: American Surgical Association’s (ASA) Presidential Address provides the stimulus for better trauma care.

1895: A major advance in the diagnosis of traumatic wounds was the invention of X-ray by Roentgen in 1895.⁽⁴⁾



1916: The complications of tourniquet use identified and the Royal Army Medical Corps Journal states “we are inclined to think that the tourniquets are an invention of the Evil One.”⁽¹⁾

1922: The American College of Surgeons (ACS) formed the Committee on Fractures (in 1949 renamed the Committee on Trauma).

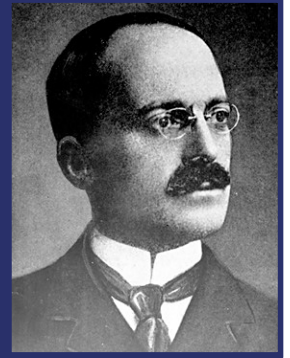
1929: Blood banking became routine. ⁽⁴⁾

1939: Fraser Gurd, MD stated trauma is a team sport, ambulance personnel are a member of this team and it's important to train individuals in the management of trauma. ⁽³⁾

1941: Walter Estell Lee, MD pushed "the need for an educational program aimed at the improvement in the care of trauma of all kinds.

1955: "Let Those Crash Victims Die" published by the Saturday Evening Post - sought to inform the public that injured patients should not be moved at the scene and should await the arrival of ambulance personnel who were trained to treat them without inflicting more harm.

1917: Charles Scudder, MD establishes the first fracture service (later to be known as a trauma service) in the country at Mass General Hospital. ⁽³⁾



Mid 1950's: Physicians began to ask why lessons learned for emergency medical treatment and transportation during WWII and the Korean Conflict could not be applied for civilian use. Drs. J.D. "Deke" Farrington and Sam Banks used these combat lessons to develop a trauma training program for the Chicago Fire Department. This program later developed into the EMT-Ambulance (EMT-A) course. ⁽²⁾

1960: President Kennedy announces that traffic accidents in the United States were a major public health problem needing attention. ⁽⁹⁾

1964: President Lyndon Johnson announces in the "Health Message" that trauma was identified as a public health "crisis." ⁽⁹⁾

1965: Congressional leaders noted the large and rapidly increasing health and financial cost of trauma. This "crisis" was occurring despite advances in trauma care that had reduced the mortality rate for injured soldiers reaching medical facilities from 4.5% during World War II to less than 2% during Vietnam. ⁽⁹⁾

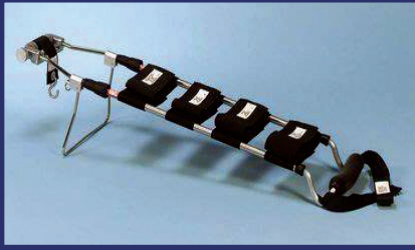


ACCIDENTAL DEATH AND DISABILITY:
THE NEGLECTED DISEASE
OF MODERN SOCIETY

DIVISION OF MEDICAL SCIENCES
NATIONAL ACADEMY OF SCIENCES NATIONAL RESEARCH COUNCIL

1966: National Academy of Sciences releases a white paper, "Accidental Death and Disability: The Neglected Disease of Modern Society" (ACS Bulletin May/June 1966).

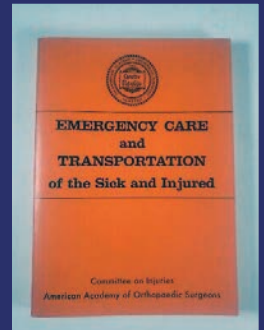
1967: George Hare, MD perfected traction for fractures of the lower leg (Hare traction splint).



1966: First trauma centers for civilians were started. Highway Safety Act of 1966 - this law established the cabinet-level Department of Transportation to accelerate highway traffic safety programs, improve EMS and allowed for penalties in the event of states' failure to follow the provisions regarding EMS. ⁽⁹⁾

1969: First computerized trauma database was established at the Cook County Hospital, Chicago, Il. ⁽⁶⁾

1967-71: Dr. Walter A. Hoyt and Dr. "Deke" Farrington, developed the first EMT program for ambulance personnel that trained them to fully evaluate an injured patient before transportation. This resulted in the 1971 publication of Emergency Care and Transportation of the Sick and Injured, which became the standard for EMT training in the 1970s.



1971: (David Boyd, MD) The Illinois Plan for a statewide system of Trauma Centers (Journal of Trauma) is published.

The Abbreviated Injury Score (AIS) was introduced by the Association for the Advancement of Automotive Medicine (AAAM). It was originally designed to stratify victims of motor vehicle crashes and to provide researchers with a simple numeric scale. The AIS forms the basis of the Injury Severity Score (ISS). ⁽⁸⁾

1972: Lt. Col. Burton Kaplan, a surgeon with the U.S. Army in Vietnam, considered the use of G-suits (antigravity) as a means to prevent the pooling of blood in the lower extremities of an injured person (thus, preventing shock) in severe trauma victims. He found that the G-suits were too expensive and too cumbersome for effective field use, so he invented what would soon be known as Military Anti-Shock Trousers. MAST soon became the standard of care. ⁽⁵⁾



1974: Glasgow Coma Scale introduced - the gold standard for neurological assessment for the trauma patient.

1973: EMS Systems Development Act identified Trauma Systems as essential.



1975: R. Adams Cowley, MD coined the term "Golden Hour" and stated that "half of the Golden Hour is in the hands of EMTs."

Dr. Cowley, MD established the Maryland system of trauma care, which eventually became a state-wide system.

1976: American College of Surgeons: “Optimal Hospital Resources for Care of the Injured Patient” specified the requirements for effective trauma systems. Out of that report came the now- familiar trauma center levels, as well as the organization of multidisciplinary trauma teams and the trauma center verification process. ACS COT developed a formal outline of injury care called Optimal Criteria for Care of the Injured Patient.

1978: First Advanced Trauma Life Support Course (ATLS) established itself as the standard in physician trauma training.



1983: First PreHospital Trauma Life Support Course (PHTLS).

1986: PHTLS (1st Ed.) advocates the use of MAST with hypotension or suspicion of abdominal bleeding.

1985: National Research Council (NRC) & Institute of Medicine (IOM) publishes: “Injury in America: A Continued Public Health Problem.” It describes deficiencies in addressing the problem of accidental death and disability.

1990: The Trauma Care Systems Planning and Development Act is passed, and the HRSA Division of Trauma and EMS is created (the latter was disbanded in 1995) / Injury Control Act also passed.

1996: Recognition that prehospital trauma care in the civilian sector differs markedly from that performed on the battlefield. Tactical Combat Casualty Care (TCCC) project begun by the Naval Special Warfare Command and continued by the U.S. Special Operations Command developed - a set of tactically appropriate battlefield trauma care guidelines are developed. ⁽⁷⁾



2002: Use of active hemostatic agents (QuickClot and HemCon) were recommended for use by PHTLS and TCCC (PHTLS 5th Ed.).

2007: PHTLS (6th Edition) recommends the use of tourniquets.

2012: London's Air Ambulance becomes one of the first civilian emergency medical services (EMS) to introduce prehospital blood transfusion. ⁽¹¹⁾



2013: Following the Sandy Hook shootings, the Hartford Consensus was established with the chief tenet that no one should die from uncontrolled bleeding. ⁽¹³⁾

2015: In October 2015, the White House launches the Stop the Bleed® campaign with the goal of empowering the general public to acquire the skills and confidence to control bleeding in emergency situations - from mass casualty incidents to everyday events - where bleeding control can save lives. ⁽¹³⁾



2017: EMS district 48 in Harris County, Texas, becomes the first civilian ground EMS system to carry and transfuse prehospital whole blood. ⁽¹²⁾

2018: San Antonio Fire/EMS becomes the third ground EMS system to deploy whole blood; they simultaneously became the first major metropolitan city to fully incorporate whole blood into their regional trauma network. ⁽¹²⁾



Complete citations available upon request

Merry J. McSwain started her medical career in the 80's as an EMT- Ambulance working for the New Orleans Health Department, the 911 service in Orleans Parish. She continued her medical career as a bedside nurse and earned her Masters degree in Acute Care Nurse Practitioner.

Currently she serves on four non-profit EMS foundations, including one she started in her father's name, the Norman E. McSwain, Jr., M.D. Trauma Education Project.





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