mendations of the report or in the actual integration of these components in an effective operation system of trauma/EMS care delivery. This major step would be taken not at the national conference tables but through pioneering EMS and trauma systems programs then being initiated in very few places across the country.

These efforts were far-flung and controversial. One of the greatest advances in emergency care came from physicians and others who had served in the army and knew its advanced systems firsthand. Dr. R Adams Cowley of the University of Maryland was an army surgeon in France during World War II who conducted research in the '60s for the U.S. government on the effects of "shock." Cowley found that speed in accessing and treating the victims of trauma was the key to saving lives. These findings resulted in what is today considered the key concept in EMS, "The Golden Hour." This concept and rapid medical intervention explained why trauma death rates were so much lower for soldiers in Korea and Vietnam than for civilians in the U.S. during that period.

Dr. Cowley had a dream to bring MASH-like trauma care for everyone to the state of Maryland. During the '60s, he transformed his lab (dubbed "The Death Lab")into one of the nation's first self-contained, specialized trauma centers. He was even instrumental in getting a squadron of helicopters for patient transport, which would be shared with the state police, from the DOT. But with the political threat of "patient stealing," Cowley's dream of a statewide trauma system was delayed for almost a decade.

Major Milestones of National Impact

- Military experiences (1850-1979)
- NAS-NRC Report (1966)
- National Highway Safety Act (1966)
- White House EMS Demonstration Projects (1971)
- Robert Wood Johnson Foundation Projects (1972)
- EMSS Acts (P.L. 93-154, 1973; P.L. 94-573, 1976; P.L. 96-142, 1979)
- Health Prevention Block Grant (P.L. 97-35, 1981).

Nevertheless, Cowley's work attracted a number of surgical students, including myself, who transplanted his ideas to other hospitals in other areas. Chicago's Cook County Hospital benefited from this regionalization approach but not without similar political battles Cowley experienced. In April 1971, the then-governor of Illinois, Richard B. Ogilvie, a former W.W.II veteran whose life had been saved by army surgeons, diverted some DOT safety dollars toward a statewide trauma system. Two years later, Cowley, assisted by an executive order from then governor Marvin Mandel, expanded the existing Shock-Trauma program of the University of Maryland statewide. While these regional trauma/EMS systems utilized the EMS systems components and personnel somewhat differently, but appropriate to the needs of patients, their examples became working and observable models and were to become the catalysts of a national effort toward improved trauma/EMS systems.

Later in 1973, the national Emergency Medical Services Act was passed by Congress which paved the way for other states to benefit from federal funds and develop their respective EMS systems. In 1974, President Nixon signed a bill establishing the new EMS office within the Department of Health Education and Welfare (DHEW) and appointed me to run the program. Frustrating the greedy was one way this program kept from turning into another "federal failure." It was not a friend-making mission and much opposition was heard, but prior to this program there was virtually no training, no standards and no "system" of emergency care to be found anywhere. A revolution was necessary to change this trend.

The final blow to the EMS movement came in 1981, when the Reagan administration folded EMS funding into block grants paid directly to the states. This has slowed the trauma care movement considerably. Instead of going to regional EMS offices, federal money now goes to state health departments, where the other bureaucrats are free to spend it on less controversial projects such as pest control. A 1984 GAO report found that direct funding for EMS dropped after 1981 in 10 out of 11 states surveyed. So much for the revolution – we won the battle but lost the war.

The important message now is that medical accountability of a regional trauma/EMS system is an essential part of any responsible comprehensive trauma/EMS program. This concept must be appreciated and accepted by the entire health care community and governmental officials associated with care and resource provision for the injured patient. I would emphasize here the need for active involvement on the part of public health officials at all levels to curb our nation's trauma epidemic which, to date, is still an unrecognized major public health problem.

Today, 20 years after the NAS-NCR EMS "White Paper" was developed by some of our most respected colleagues, in only a few areas and in a small number of trauma centers have we seriously responded to their sound and logical trauma registry recommendation as outlined. The kind of trauma data and complex information that we need to obtain to respond to their challenge, to document our progress, and to project for the future reside primarily in trauma centers. Most trauma data collected by other institutions and agencies must be held suspect because of the varying motives, irregularities, and general inadequacy of this data.

Much has changed for the better in this country since the 1960s. The 1966 NRC White Paper, the experience of physicians in Vietnam, and the EMS Act of 1973, which provided federal funds for the development of emergency medical care programs modeled after those in Maryland and Illinois, have all helped to improve management of trauma victims. Yet much remains to be done. The establishment of national consensus input data elements is a matter of process and professional leadership. More difficult to achieve and continually elusive is the goal of obtaining the attention of our public health leaders to recognize this nation's trauma problem and to provide acceptance, endorsement and support for the development of regional, state, and national trauma registration programs with the aim of effective trauma care and prevention for our citizens in the near future. □

You Ain't Seen Nothin' Yet

by Jack L. Stout

The 1966 White Paper triggered two decades of progress. For the ambulance industry, the changes were mostly superficial – hardware, training, techology, etc. But as significant as those changes may have been, the fundamental structure of the ambulance industry was barely affected.

Only three of the "White Paper's" 38 pages were specifically devoted to ambulance services. In 1966, there just wasn't much that could be said about the ambulance industry, except that it wasn't. It wasn't well-organized, well-regulated, well-monitored, well-trained, well-equipped, well-paid, well-anything. While other industries were managing to evolve and progress on their own, for some reason, the ambulance industry didn't. No one knew why. No one tried to find out.

By 1966, it was clear that the ambulance industry needed more than a minor tune-up. Much more. But full-scale restructuring of an entire industry was beyond the White Paper's scope, and beyond its authors' expertise.

Recommendations were, however, offered. Such as: "Calls for

Jack L. Stout, chairman of The Fourth Party, has been at the forefront of innovation in the design and implementation of EMS systems for the past dozen years.

ambulance services should be screened by a responsible agent under medical supervision so that, when medical attendance is required, a physician can be dispatched and an ambulance properly equipped to his needs made available immediately." Considering that the paper's focus was trauma, and knowing what we have since learned about prehospital care of major trauma, this recommendation now seems . . . well, quaint.

The report's more useful recommendations (for the ambulance industry) included a call for standards on design and construction of vehicles and on-board equipment, qualifications of ambulance personnel, state regulation, and expanded use of helicopters, especially in rural areas.

Ironically, the White Paper's most profound impact upon our industry came – not from a recommendation – but from an assumption, a highly questionable assumption: "Adequate ambulance services are as much a municipal responsibility as firefighting and police services."

Legally, the assumption was simply not true. In 1966, few if any municipalities were legally required to operate, fund, or even regulate ambulance services, and only a handful had voluntarily taken on such responsibilities. The authors no doubt meant to say that, in their opinions, local governments should be made responsible for ambulance services. But as a formal recommendation, a policy change of such magnitude would have required extensive justification, informed debate, consideration of alternatives and long-range consequences. It never happened.

It's my guess that "municipal responsibility" seemed so logical because the existing (even envisioned) clinical sophistication of ambulance services was, at the time, so limited that ambulance service was not thought of as a type of "health care service." And if not part of the health care industry, where did ambulance services fit? Ambulances have lights and sirens, just like police cars and fire trucks. Voila! The connection was made.

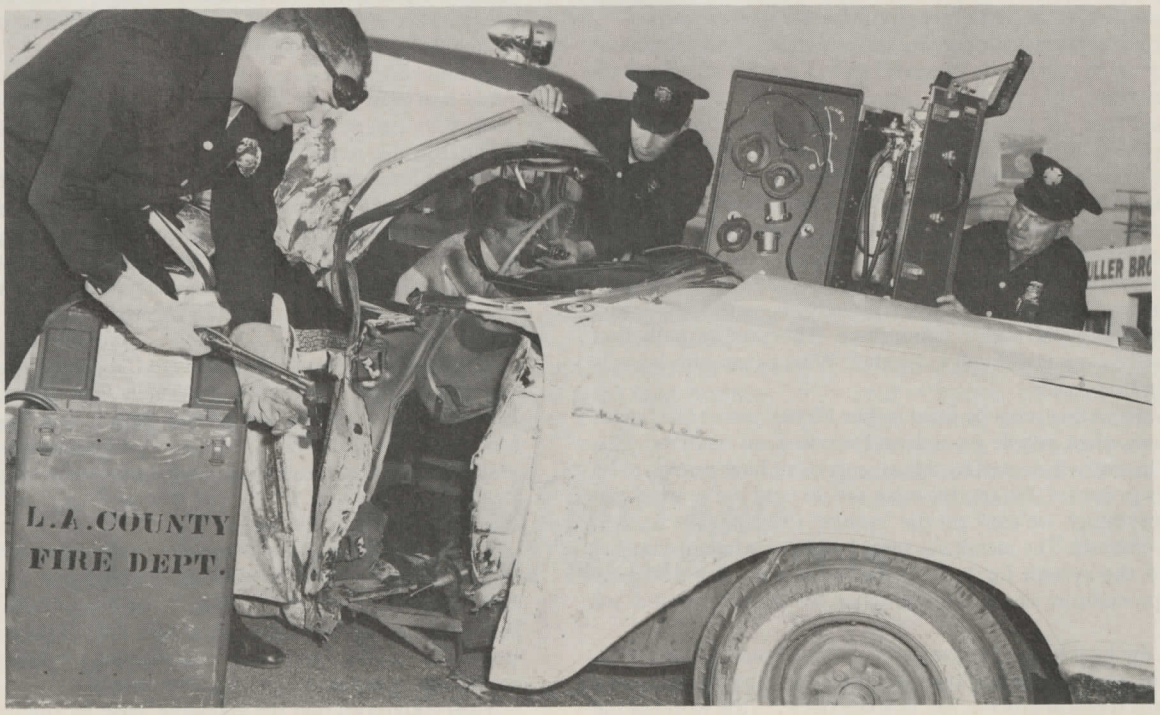
In 1966, no one even considered whether the economies of scale at work in the ambulance industry, then and in the future, might differ considerably from those which affect the production of local law enforcement and fire protection services. But neither was it anticipated that ambulance personnel would routinely perform procedures previously restricted to physicians. The paper recommended: "Pilot programs to determine the efficacy of providing physician-staffed ambulances for care at the site of injury and during transportation." The authors did not envision (and would not have unanimously endorsed) the idea of field paramedics performing procedures clinically more advanced than those which were then available in many hospital emergency rooms.

The White Paper was written before we learned from Dr. Eisenburg the truth about prehospital care of cardiac arrest, before system status management, before call screening lawsuits, before we built and tested more than 20 different types of prehospital care systems, before the federal deficit went berserk, before we learned almost everything we know about the efficient production of quality prehospital care.

About all that could be said about the pre-1966 ambulance industry was that it was not a promising foundation for building the industry of the future. "Municipal responsibility" was, therefore, not the product of careful analysis and rigorous debate. No one asked whether it was reasonable to expect that each of America's thousands of local governments would acquire and maintain the specialized expertise needed to finance and regulate, much less manage, production of increasingly sophisticated health care services.

In the absence of obvious alternatives and critical review,

"At the time, we thought we were quite good at rescue and first aid. On the other hand, nobody had taught us the importance of immobilizing necks, we didn't know how to apply traction to fractured femurs, and our suction equipment consisted of a gas-powered aspirator on our E&J Lytport resuscitator." – James O. Page



Photograph courtesy Los Angeles County Fire Department.

Ironically, the White Paper's most profound impact upon our industry came not from a recommendation but from a highly questionable assumption: "Adequate ambulance services are as much a municipal responsibility as firefighting and police services."
– Jack Stout

Photo by Wayne Eastburn, Eugene Register Guard.

"municipal responsibility" sold well. Federal grant programs, Medicare policies, and even the easy money of revenue sharing became potent promoters of "municipal responsibility." (See "Interface" on page 70 for a discussion of federal influence on our industry's evolution.) Today, with few exceptions, it is the action or inaction of local government that decides what patients receive in the way of ambulance service, how it is paid for, who provides it, and whether the rate payers and taxpayers are getting their money's worth.

The role of state government now ranges from innocent bystander to the potentially powerful role of market allocator/rate regulator. Even so, "municipal responsibility" is so thoroughly entrenched that, on the whole, local governments rule the prehospital care industry. With rare exception, where superb systems exist, they were created by action of local government.

Although "municipal responsibility" has dominated our industry for 25 years, its days are numbered. Gradually, over the next two or three decades, the role and size of our industry will dramatically expand. Here's why.

America's health care industry has already begun a long overdue structural change of major significance. The precise path that change will follow is difficult to predict. Where that path leads is not so hard to predict.

The problem that must be fixed is this: Money enters our health care system when people get sick and services are rendered. The financial incentives created by this arrangement have proven to be extremely powerful. No matter what we do (and we've tried just about everything), we can't get the "system" to act against its own financial interests. The incentives must be (and are being) changed to reward the system for keeping us well – not for selling us medical procedures, needed or not, when we are sick or think we are sick.

When the health care system has a serious financial interest in keeping us well, preventing complications, avoiding unnecessary office visits, medical procedures, hospital days . . . the world of the paramedic provider will turn completely upside down. For owners, managers, and paramedics who can cope with the disruptions and uncertainties that always accompany rapid change, opportunities will abound.

Consider this: There is good reason to suspect that clinically sophisticated prehospital care systems may be creating sufficient savings in reduced hospitalization and rehabilitation costs to entirely offset their own operating expenses. For example, the advanced airway procedure that prevents aspiration, that would have caused lung infection, that would have slowed recovery, which would have postponed discharge, which would have cost someone a bunch of extra money . . . or the neglectful diabetic who several times a month finds himself in trouble, calls the paramedics, refuses transportation, and doesn't see (or need to see) a doctor until his regularly scheduled visit.

I could, of course, go on and on with examples: the heroin overdose victim who gets a timely dose of Narcan and doesn't become a vegetable . . . the lonely old lady who lives by herself and prefers to, who sometimes just gets scared, conjures up some symptoms, calls the paramedics, refuses transportation, and continues to live at home . . . the almost spinal cord injury, the chest pain that didn't become a full arrest, the slightly complicated emergency childbirth that didn't result in permanent damage. Continue on your own.

These kinds of incidents are far from rare. Does a good ALS system save more money than it costs? We've spent $30 million federal dollars on EMS research, but none on this question. At the moment, we just aren't very interested. Soon, we'll be absolutely fascinated.

When complex recoveries and added procedures represent costs to the health care industry – rather than revenues, we'll see a sudden surge of interest in learning whether a good ALS system saves more money than it costs. Many of the "nuisance services" we now provide, usually without compensation, will be seen as valuable alternatives to more expensive practices. Increasingly, paramedic providers will be asked to expand their capabilities, and paid to deliver a broader range of primary health care services.

This expanding role will bring several advantages: a more secure position within the health care industry, greater financial stability for paramedics and the organizations they work for, more varied assignments for field personnel, better service to rural areas, more disaster capability and peak load coverage, continuous refinement of clinical procedure aimed at cutting morbidity (and related costs) – not just mortality.

Paramedic providers will eventually become "subcontractors" hired and paid (by other health care organizations) to deliver far more than emergency and nonemergency ambulance services for two irresistible reasons:

First, the financial consequences of poor prehospital care will be higher costs and lower profits for other health care providers;

Second, since the fixed costs of providing geographic coverage cannot be avoided, and because paramedic providers already employ skilled personnel, paramedic providers are uniquely positioned to provide an expanded range of services at low, marginal costs.

The forces of change over the next 25 years, and their effects upon our industry, will not be superficial. The very structure of our industry will be altered beyond recognition. Eventually, the role of local government in "EMS" will be no different than the role now played by local government in the finance and regulation of other health care services. "Municipal responsibility" will not be abolished – it will simply disappear.

WARNING. These predictions are, in my judgment, almost guaranteed. Almost. There is, however, another possible scenario. To earn a stable and respected role in the evolving health care industry, we will have to prove that a good ALS system does in fact reduce morbidity, prevent complications, shorten lengths of stay . . . in short, save – not cost – health care dollars.

I am convinced that the economic case for quality ALS can be

"A look at the recommendations made by the National Research Council in 1966 is to see a world without radios, DOT curriculae, and other standards . . ." **Rick Narad**

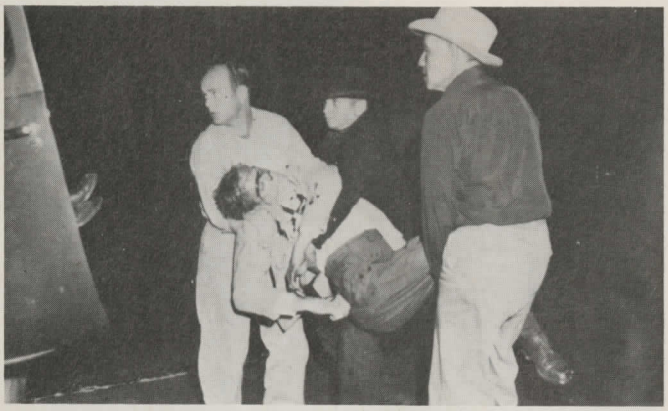


Photo courtesy of the D.R. Boyd Hysteric Library.

made. But what if I'm wrong? During the next 25 years, competition for local tax dollars will become so fierce that our "angels of mercy" sales pitch will no longer be enough. (Even we must admit that there are other ways, more cost-effective ways, of saving lives, e.g., prenatal nutrition for the poor.) If we fail to make our case, on economic grounds, we might well return to BLS, minimum wage, scoop and run.

Does good ALS save more health care dollars than it costs to provide? If so, and if we can prove it, the future of ALS is not only secure – it's downright exciting.

The Way it Was

by Jimm Murray

"It'll never be the way it was," sums up the past, present and future of organized EMS. And while the statement is not intended to be positive or negative, it does indicate the permanence of change.

It's easy to talk or write about all the good that is going on in EMS. Without hardly thinking one can rattle off the isolated save rates, system performance, training advancements, or group accomplishments. National trade journals and individual state association newsletters are full of the "I'm OK – You're OK" stories. But what if we take a deep breath, step back, and dig a little deeper to look at the big picture of EMS evolution and current status?

In the early years (if we can agree that 1966-1970 was the beginning) of organized EMS, the system was left to develop on its own in each individual state, and in some cases, regions of states. EMS was in its entrepreneurial phase and was being molded by the enthusiasm, dedication and sacrifice of a lot of committed people. They went about their business of promoting this new health occupation like roving preachers. Others quickly got caught up with their fervent and passionate mission.

Inventors/manufacturers soon realized the potential and longevity of this new field and the early to mid-70s saw a virtual explosion of equipment designed specifically for prehospital care. Ambulances became more specialized and refined, and the number of companies in the conversion business multiplied like rabbits.

Jimm Murray is Wyoming's state EMS director, and has been actively involved in advancing emergency care for the past 15 years.

By the mid-70s, the concept had been sold nationwide, in part to the continuing help of a prime time television show that boasted an almost 100-percent cardiac save rate. Citizens were bedazzled by their new community heroes, young kids now yearned to be paramedics rather than firefighters, and as a true sign of this "coming of age," Congress finally took notice.

While EMS was alive and fairly well in most states already, the notice by Congress, passage of the "EMS Act," and the influx of federal money was perhaps the final impetus to put EMS into the limelight and make it "a nation's program." The federal HEW program caused a uniformity to occur across the land as everyone was forced to start molding EMS into a "system" that had identified components and goals.

National and regional meetings brought together experts in all fields of emergency medicine, research, and evaluation techniques and gave everyone the same base of information and ideas. Those new to EMS would come to these meetings, faithfully sit in the sessions to receive divine guidance from Dr. Dave Boyd, who would evangelize to the assembled masses for hours. They would then charge out ready to spit nails and Save the World.

It was a very positive time during the late '70s; there was interest at the national level as well as state, EMTs craved additional training, provider groups and associations were working together, and everyone seemed to share the same dreams and vision.

Looking back, it appears that 1980 might have been the top of a cycle for EMS. This field is too complex to track each component, but it seems that various aspects of the movement have leveled or tapered off since then. Think of EMS as a giant Roman candle. When it lights up every one of the little blazing balls heads straight up. Eventually some level off and go horizontally, some peak and slowly head downward, while others continue their steady climb.

Taking this analogy, 1966 to 1979 saw everything heading straight up for EMS. New equipment was developed, research was started in earnest, government and citizens were respectfully attentive, people became EMTs and stayed EMTs for honest and pure reasons, and there was a wholesome pioneering spirit.

By 1980, some components seemed to have leveled off including new equipment advances. The '70s saw lots of new pieces of equipment while the '80s generally have seen only refinements of older designs or principles (with the exception of computerization).

Areas continuing to make new advancements are training, communications, research, public knowledge and understanding of EMS, and administration. Areas in decline include automatic public acceptance, national unity and support, and the dedication and motivation of the EMT.

As public knowledge and familiarity of prehospital care has increased, there seems to be a diminishment in the level of public acceptance. The newness and mystical quality of EMS has worn off, and the public is starting to challenge the system, both in cost and in quality of care. The withdrawal of public acceptance can be measured by the increase in litigation against prehospital care providers. From a low of only a couple a year in the nation, it seems to now average one lawsuit per 25,000 to 35,000 ambulance runs.

National unity has diminished with the shutdown of the federal HEW (now HHS) program, and the backdown in DOT's support. No longer is everyone being brought together to think and do alike. Individual national associations continue, but seem to have become more proprietary in their focus. The "big picture" of the EMS system seems to have been lost as some groups narrow their channel of focus.

Perhaps the most distressing segment of the EMS shooting star that is declining is the overall motivation/dedication of the EMT. While new EMTs, fresh out of school, are still as charged up initially as their counterparts were five to 10 years ago, it doesn't seem to last as long or be as ingrained. Perhaps it has to do with external factors and attitudes. Communities, especially rural ones with volunteer EMTs, accept trained emergency care providers as commonplace; they are no longer new, unique and mysterious. Likewise, volunteers signing up for a course find they can't be the