

BACKGROUND REPORT**ON
EMERGENCY MEDICAL
SERVICES****INSURANCE INSTITUTE for HIGHWAY SAFETY**

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(This is one of a series of background reports on traffic safety subjects.)

August, 1967

EMERGENCY CARE -- A MATTER OF LIFE OR DEATH

As long as we have automobiles, we shall have automobile accidents.

Recognition of this inevitability led in 1966 to the passage of federal legislation to engineer more safety into our automobiles, to "package" occupants in a safer environment so that even in a crash situation injuries might be minimized.

The same rationale lies behind the newly asserted effort to incorporate more safety into the highway system itself. The Bureau of Public Roads is spearheading a campaign to clear roadsides of unnecessary hazards that become "death traps" for errant vehicles -- for it is inevitable that a certain number will, for various reasons, stray off the traveled roadway at one time or another.

In short, much of the nation's new highway safety program is an accommodation of human failing.

It is an extension of this realistic philosophy that has caused much attention to be focused on the quality of emergency medical care in the United States. If we shall always have some accidents, it is incumbent to minimize the human losses resulting from them. This, simply stated, is the purpose of the new federal highway standard on "Emergency Medical Services."

After an accident, the quality of first-aid and other emergency treatment often is a matter of life or death. How good, how prompt is such care on a nationwide basis?

One expert has commented that American emergency care is in the "dark ages." The overwhelming weight of available evidence would tend to bear him out.

A recent study by the National Academy of Sciences noted that a soldier seriously wounded on the battlefields of Viet Nam stands a materially better chance of survival than does a similarly wounded individual on an American highway. In Viet Nam, a wounded soldier is in a hospital within an average of 30 minutes. This speed is the exception in the United States, especially in rural areas.

The U. S. Congress has found the present situation seriously inadequate. In the Highway Safety Act of 1966 it specified the states must improve their emergency services, and other safety programs, by December 31, 1968, or face certain penalties.

Accordingly, the National Highway Safety Bureau issued a standard on June 27, 1967, that requires a state's emergency program to include:

- . Quick identification and response to accidents.
- . Proper first-aid measures, both at the scene and in transit.
- . A transportation system to bring the injured and definitive medical care together in the shortest practicable time.

Here is the text of the standard (4.4.11):

"Each state, in cooperation with its local political subdivisions, shall have a program to ensure that persons involved in highway accidents receive prompt emergency medical care under the range of emergency conditions encountered. The program shall provide, as a minimum, that:

- "I. There are training, licensing, and related requirements (as appropriate) for ambulance and rescue vehicle operators, attendants, drivers, and dispatchers.
- "II. There are requirements for types and numbers of emergency vehicles including supplies and equipment to be carried.
- "III. There are requirements for the operation and coordination of ambulances and other emergency care systems.
- "IV. There are first aid training programs and refresher courses for emergency service personnel, and the general public is encouraged to take first aid courses.
- "V. There are criteria for the use of two-way communications.

- "VI. There are procedures for summoning and dispatching aid.
- "VII. There is an up-to-date, comprehensive plan for emergency medical services, including:
 - "A. Facilities and equipment
 - "B. Definition of areas of responsibility
 - "C. Agreements for mutual support
 - "D. Communications systems
- "VIII. This program shall be periodically evaluated by the State and the National Highway Safety Bureau shall be provided with an evaluation summary."

What the Congress had in mind when it asked for an Emergency Services Standard is summed up in an excerpt from Report No. 1700 of the House Public Works Committee:

"An essential part of the State safety program should be the development of an emergency facilities system. This will require the advice and services of experts and personnel in medicine, law, engineering, communications, and law enforcement, at a minimum.

"Techniques should be instituted to insure the fastest possible notification of an emergency -- call boxes, aerial surveillance, patrols, closed circuit television, and any other feasible system. Control centers should be established, manned, and equipped to send to the emergency scene people and equipment capable of providing medical care, transportation of the injured, prompt assessment of all the elements involved in the accident, and restoration of traffic movement.

"We can no longer be content with procedures that are directed at sweeping up the highway and deciding in that short interval only who was at fault."

SHORTCOMINGS

The three-year National Academy of Sciences study cited earlier concluded, among other things, that:

- . The general public is "insensitive" to the magnitude of the problem of accidental death and injury.

Techniques developed in Viet Nam and elsewhere for high-speed evacuation and treatment of the wounded will be used in the handling of traffic casualties.

These demonstration projects will also be concerned with such "closely related" post-accident activities as the investigation and documentation of the crash, removal of debris, and restoration of the normal traffic flow.

A concerted push for improved first-aid training is anticipated. Paramedical personnel may soon be required to take such training, and eventually professional drivers, such as truckers. It has been suggested that consideration be given to requiring the successful completion of a first-aid course as a prerequisite for a driver's license. Certainly, first-aid instruction would seem to be a logical corollary to high school driver education.

SUMMARY

The U. S. Department of Health, Education and Welfare has made a rough national estimate that effective emergency medical services for traffic accident victims could, over a four-year period:

- . Save 16,000 lives.
- . Reduce work-day losses by 8,180,000.
- . Reduce hospital days by 2,401,000.

Improvement of emergency services is going to require a great deal more money and personnel than is now available. One government official estimates that expanded U. S. health services such as these will require the creation of 10,000 new jobs every month.

Long-term solution of the accident injury problem obviously cannot ignore prevention. But any truly effective state or community highway safety program must focus attention on the problem that exists when the system with all its safeguards fails, and accidents with their potential for death and disability, do occur -- as they will.

Some Selected References

1. Accidental Death and Disability: The Neglected Disease of Modern Society. Division of Medical Sciences, National Academy of Sciences--National Research Council. Washington, D. C. 1966. 37 pp.
2. "The Current Status of Emergency Treatment in Automobile Accidents." J. C. Loughreed, M. D. Southern Medical Journal, September 1965.
3. "Emergency Medical Services." Highway Safety Program Standard 4.4.11, National Highway Safety Bureau, June 27, 1967.
4. Health, Medical Care and Transportation of the Injured. President's Committee for Traffic Safety. 1965. 26 pp.

- . Millions (including many ambulance and rescue squad attendants and other emergency personnel) lack instruction in basic first-aid.
- . Local authorities have neglected their responsibility to provide the best possible emergency medical services.
- . Research on trauma has not been supported or identified on a level consistent with its importance as the fourth leading cause of death in the United States today.

A Memphis hospital reported after a five-year survey that virtually none of the seriously injured auto accident victims admitted to its emergency room during the period "had received adequate or effective pre-admission first-aid treatment."

The NHSB says "recent research evidence indicates that deficiencies in emergency medical care and transportation of the injured, and in other aspects of the post-accident response, underlie substantial fractions of our overall highway fatality totals and may be the single most important factor accounting for the great differences between state traffic death rates."

Dr. William Haddon, Jr., the Bureau's Director, said:

"...There has been in most areas of the United States no adequate advance planning of emergency communications and transportation facilities. Ambulance attendants are for the most part not required to be expert in first-aid nor are they required in most parts of the country to carry adequate equipment in their vehicles. The presence of physicians or nurses in ambulances is rare indeed. Hospitals and ambulances seldom have radio links either to each other or to police radio systems. Helicopters are scarcely employed and landing pads are present at only a small number of hospitals...."

WHAT CAN BE DONE?

The emergency services standard by the federal government is backed up by studies such as the one made by the National Academy of Sciences. Recommendations based on the studies fall in three major categories: Communications, first-aid, and transportation. Needed:

Communications

-- More efficient cross-communication among all emergency facilities, including medical response units, hospitals, police, fire departments, public utilities, civil defense, and others.

-- Better voice communication between the accident site and the ambulance and hospital emergency rooms.

-- More and improved ways of summoning help from the accident site, including more public telephones or other devices along our highway network, especially in remote rural areas. It has been suggested that a nationwide, easily remembered number for all dial telephones be established for emergencies of all kinds.

First-Aid

-- Extension of basic and advanced first-aid training to more laymen.

-- Advanced first-aid training by qualified instructors should be universally required of all emergency service personnel. (In 1965, only two states, Louisiana and Massachusetts, required by law a certificate of such proficiency by ambulance attendants.)

-- Preparation of nationally acceptable first-aid texts, training aids, and courses of instruction for the special requirements of different types of emergency service personnel, including rescue squads, firemen, policemen, and ambulance attendants.

Transportation

-- More adequate standards for ambulance design and construction, for ambulance equipment and supplies, and for the qualifications and supervision of ambulance personnel. (Approximately 50 per cent of the nation's "ambulance" services are provided by 12,000 morticians, almost solely because their vehicles can accommodate litters.)

-- Pilot programs to determine the effectiveness of providing physician-staffed ambulances at the injury site and during transit.

-- Programs to evaluate the use of helicopters to move physicians and medical equipment to the accident site and to evacuate casualties from major highways, remote areas, or from a community hospital to a more specialized center. Landing pads should be considered for selected hospitals on a regional basis.

-- Reconsideration of the need for ambulances to speed and to be granted special traffic privileges. All evidence indicates that secondary accidents result in the loss of more lives and cause additional morbidity to others than is avoided by a speeding ambulance arriving at a hospital a few minutes earlier. (A recent California Department of Health study revealed that the average time saved by speeding and violating other traffic laws was only 2.7 minutes in an average of 8 miles.

LOOKING AHEAD!

The NHSB and certain states are planning a number of "demonstration projects" in all areas of highway safety to "translate into practice research and newly developed techniques." Emergency medical care is one major project area and "optimum models" will be set up in several different geographic environments.

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