DEVELOPING EMERGENCY MEDICAL SERVICES
—Guidelines for Community Councils—

Commission on Emergency Medical Services
AMERICAN MEDICAL ASSOCIATION

COMMISSION ON EMERGENCY MEDICAL SERVICE

Irvin E. Hendryson, M.D., Chairman . . . . Albuquerque, New Mexico
A. I. Doktorsky, M.D. . . . . Chicago, Illinois
Oscar P. Hampton, Jr., M.D. . . . . St. Louis, Missouri
John C. Harvey, M.D. . . . . Baltimore, Maryland
John M. Howard, M.D. . . . . Philadelphia, Pennsylvania
Henry C. Huntley, M.D. . . . . Rockville, Maryland
Paul V. Joliet, M.D. . . . . Hagerstown, Maryland
Ralph H. Kunstadter, M.D. . . . . Chicago, Illinois
Eugene L. Nagel, M.D. . . . . Miami, Florida
J. Cuthbert Owens, M.D. . . . . Denver, Colorado
Charles A. Rockwood, Jr., M.D. . . . . San Antonio, Texas
Maurice Schnitker, M.D. . . . . Toledo, Ohio
William E. Burnette, MPH, Secretary . . . . Chicago, Illinois

AMA STAFF

Division of Medical Practice
Bernard P. Harrison, Director

Department of Health Care Financing
James Fleming, Staff Associate

Department of Community Health
William E. Burnette, Staff Associate

DEVELOPING
EMERGENCY MEDICAL SERVICES

Guidelines for Community Councils

. . . starting points for community action

Concerned community leaders need to know . . .

The American Medical Association, from the day-to-day experience of 200,000 physician members, is aware of the thousands of people who die from accidents each year. Since 1965, the Association's Commission on Emergency Medical Services has led a national effort to upgrade emergency medical care and reduce the number of needless accidental deaths.

What happens when a medical emergency occurs in your community?

Concerned community leaders need to know . . .

Is everything possible done to prevent needless death or disability? Is your home town's emergency care a real, solid link in the delivery of health care?

The Commission on Emergency Medical Services has reviewed the experience of communities with organized emergency medical services councils and has sought the opinions of experts from numerous groups. The consensus is that concerted community-wide action is essential to adequate emergency service.

The Commission, therefore, offers the following *guidelines* to aid in the formation of community programs.

Each community is, however, a separate entity; the agencies, the voluntary organizations, the resources available, the primary problem areas are seldom identical in two communities. These, therefore, are truly "guidelines", not hard-and-fast rules. They are starting points, subject to change to meet individual situations.

The Commission believes, however, that they will be of assistance in meeting a very real national problem.

I. E. Hendryson, M.D.
Chairman
Commission on Emergency Medical Services
American Medical Association

1

Let's define terms . . .

Webster's defines "emergency" as "an unforeseen combination of circumstances which calls for immediate action". In the context of medical services, the emergency can be of any magnitude, from the single traffic casualty or cardiac arrest to the mass victims of a fire, an explosion, or a hurricane.

A good emergency medical services system will be capable of marshalling the necessary health resources available in the community to meet such emergencies, whatever their magnitude. Once the basic system capable of meeting the smaller, day-to-day emergencies is established and operating, it is primarily a matter of phasing in more community resources when the number of casualties increases.

There are four basic components to a good emergency care system:
(1) Broad-scale training, for on-the-spot first aid;
(2) A communications system which assures prompt response to the need;
(3) Well-equipped emergency vehicles, staffed by emergency medical technicians—ambulance, trained and equipped to provide all necessary life support at the scene and during transportation;
(4) High quality emergency care facilities, staff and equipment at the hospital level.

In addition, these four basic components should be coordinated, working together toward the single goal of quality care for the emergency victim.

Obviously, many communities today fall short of these standards. The reasons are legion: failure in any one of the components, fragmented efforts, lack of coordination, public or private apathy.

Equally obviously, the first step in development of an adequate emergency medical services system is to secure the cooperation and involvement of all appropriate community agencies and health facilities.

To these four, therefore, must be added another:
(5) A community council or emergency medical services council to bring together the leaders providing such care, for planning, education, and funding.

The following guidelines, accordingly, deal first with the establishment of the emergency medical services council, and then with the various stages of developing the system or improving an existing one.

I. THE EMERGENCY MEDICAL SERVICES COUNCIL

In all action programs, there is an innovator, a missionary—an individual or group involved—the man or men who see the urgency of the program as a personal responsibility and devote their time and energy to getting it under way.

Whoever this initiating force may be, however, he must realize that an emergency care system will not work unless the organizations, agencies, and facilities which must contribute to the system are involved in the planning.

The primary role of this leadership group should, therefore, be the establishment of a fact-finding, planning, coordinating, and advisory council broadly based in the community.

THE COMMUNITY—There are no hard-and-fast rules for establishing the geographic boundaries of the emergency system. It may encompass a metropolitan area, a county or a region, depending on population density, trade and hospitalization patterns, political or natural boundaries.

Groups and agencies such as local medical societies, professional committees on trauma, on disaster medical care, or on automotive safety have long been active in the improvement of facets of emergency care.

Many existing government programs have potential or actual emergency care interests: comprehensive health planning; regional medical programs for heart, cancer and stroke; rural and migrant health programs; and others.

While it will be clear to the council organizers that many of these planning groups, professional committees, and programs should be involved in the council structure, it may be less clear at first that their respective geographic limits should also be explored.

Frequently, the "community" served differs with the organization or program involved and may encompass a neighborhood, a city, a county, or a larger region. A functional community, for the purposes of the emergency medical services system, can only be defined at the local level. Initially, its geographic boundaries need not be fully spelled out.

MEMBERSHIP OF COUNCIL—As already indicated, an effort should be made to include representation from existing planning groups, professional committees, or programs serving the community and involved in planning health services, particularly those with participating interests in the field of emergency care.

Essential to the success of almost any council, however, is representation of three main groups: the providers of health services; public agencies involved with health and safety; and community leaders.

A. Providers: Included in this group should be the local medical society or societies, hospital administrators, nursing groups, ambulance services, and local chapters of voluntary health organizations.

B. Public agencies: This would include fire and police departments, health departments, including the medical examiner or coroner, health planning agencies, and local government.
C. Community leaders: Here would include representatives of civic and service clubs, traffic and highway safety groups, telephone companies and public utilities, and generally, any groups which would have an interest in emergency care and which could strengthen the council or increase community support and involvement, including the news media.

It should be noted here (as elsewhere in these guidelines) that the listing is by no means all-inclusive, nor can it be the same for all communities. It is intended as a starting point or a check-list.

For example, the school system might have a role in the teaching of first aid; any major industry or employer in the community has a vital interest in adequate emergency care; insurance executives have an interest both in prevention of accidental injury and in the cost of emergency care. In rural areas, farm organizations may be involved. Some women's organizations can play a major role in "selling" the program to the community. The American National Red Cross has a definite role.

Since communication plays a major role in an effective emergency medical services system, it will also be important, to involve in the planning both technical experts and decision-making executives from the communications industry.

ORGANIZATION OF COUNCIL—The first question is whether the council is to be an independent organization or a committee of a pre-existing organization. There are advantages to each approach.

No specific pattern is recommended for organization of the council, but several different patterns have emerged. In some areas, the council itself is a comparatively small body, representing a limited number of agencies with primary responsibility in the emergency situation—e.g., the medical society, hospital administrators, police and fire departments, emergency medical technician-ambulance—with the remaining agencies (those with a less direct interest in actual provision of services) in an advisory capacity.

Sometimes the council itself is large, with twenty to thirty agencies represented, but with most action taken by subcommittees, perhaps one in each of the four basic components, established with council approval. Often there is a small committee or board of directors, which is responsible for day-to-day decisions.

While it is essential that all interested agencies be drawn into the council's planning and operations, it also seems preferable that a full council representing all these agencies should not become involved in the minutiae of such operations. The logistical problem of gathering representatives from thirty or forty agencies together at one time and place, at regular intervals, and of obtaining agreement on agenda items

within the limits of usual meeting times militates against such a method and for some form of dividing up the work among smaller groups.

Many approaches are possible: technical advisory committees to the council or the appointment of certain representatives as consultants to the council, dealing only with specific areas. Here again, the needs and resources of the local community will tend to define the structure of the council.

In essence, two points are important: that all interested agencies have an opportunity to contribute to council deliberations; and that the council's operational structure not become too unwieldy for action.

The essential compromise may be to initiate the council with a small group of those people expert in the provision of emergency services and to subsequently enlarge the council from this.

STAFFING—The type of staffing needed, and the amount of staff time involved, will also depend on the community and the scope of the planning. The organizing members may perform staff functions themselves or, if the council is organized under the aegis of a community organization or a planning agency, some of the agency's staff may be delegated to perform clerical functions for the council.

The council organizers should recognize that there may come a point at which some full or part-time staff may become essential for such tasks as collecting data concerning the inventory of current emergency services or collating data provided by member organizations.

Such considerations should not delay initiating the council. The most important thing is to get started! If the council is initially organized as a committee of the county medical society, or of the mayor's office, or of the public health officer's office, or of a community service organization, much can be accomplished with no staff except for the members and their own offices.

FINANCING—Staffing questions lead to financing questions. Projects undertaken will cost money, even though cash outlay may be significantly reduced by donation of services and meeting space by members of the council.

A number of sources of financing are available. In addition to contributions from member organizations, some councils have received financial support from local civic or service organizations. Other community resources include local industry, labor organizations, foundations. Many services will be at least partially self-supporting, on a fee-for-service basis.

Government programs of the Department of Transportation's Highway Safety Bureau and of the Department of Health, Education, and Welfare's Community Health Service, Health Facilities Planning and Construction Service, and Regional Medical Programs are potential sources of funding, as are funds allocated for area-wide health planning. In some areas of Appalachia, redevelopment funds or OEO grants may apply. HEW's Division of Emergency Health Services has training materials and technical

assistance available. (It should be recognized that changing Federal budgetary pressures affect the amount of governmental funds available for the program.)

MEETINGS—A regularly scheduled meeting of the council is recommended, preferably on a set day in each month, especially during the organizational and planning stages, to preserve the impetus given by the founders. These should have planned agendas—perhaps proposed schedules for the community survey or progress reports from groups conducting the surveys. Subcommittees may meet more frequently, being smaller and better able to arrange this, depending on individual tasks set them.

II. COMMUNITY EVALUATION

With the emergency medical services council initiated, its first task should be to survey the current status of emergency medical care in the community, as a basis for identifying areas where improved coordination is needed, as well as areas where gaps in emergency resources exist.

In essence, this survey consists of two separate studies:

(1) A survey of the current need for emergency medical care; and
(2) A survey of the people, facilities, and equipment currently rendering such care.

1. *Survey of need for emergency care:* includes a statistical analysis of the number of people requiring emergency care in hospital emergency departments (and by private physicians, if the data is available) and the number requiring ambulance transportation. Not only is the number important, but also the ages (pediatric vs. adults), types of problems (injuries, psychiatric, heart attacks), and the time of day (day vs. night) and week (weekday vs. weekend) involved. How many emergency victims die before reaching the hospital?

2. *Survey of the current emergency system:* as noted in the introduction, the four basic components of a good emergency care system are:

   (1) Broad-based training for on-the-spot first aid;
   (2) A communications system which assures prompt response to the need;
   (3) Well equipped emergency vehicles, staffed by emergency medical technicians—ambulance, trained and equipped to provide all necessary life support at the scene and during transportation;
   (4) High quality emergency care facilities.

Accordingly, these four also provide the basis for evaluation of current community efforts to handle emergency situations.

In general, the type of information which the council should acquire concerning these four components is as follows:

(1) *FIRST AID AT THE SCENE:* The extent to which American National Red Cross first aid training, or its equivalent, is made available to all segments of the public, through inclusion in the curriculum of elementary and secondary schools, in adult programs, and in industrial safety programs; the extent to which advanced first aid training is required of police and fire personnel, even though not directly involved in ambulance service; and the extent to which the public has actually acquired such training.

(2) *EMERGENCY COMMUNICATIONS:* The capability of present emergency communications systems to provide, on a 24-hour basis, two-way voice communication between emergency vehicles and facilities and between law enforcement agencies and other agencies involved in emergency services; to provide central dispatching for emergency vehicles and personnel; and to handle major as well as individual emergency situations. Alternate arrangements in case of power failure. In addition, the system through which the individual patient *seeks* help—such as, that provided through use of the single emergency telephone number (911)—should be reviewed.

(3) *TRANSPORTATION:* The equipment of ambulances, in comparison with standards specified by the American College of Surgeons and the National Research Council; the number of trained emergency medical technicians-ambulance available for each vehicle to provide emergency care at the scene and during transport, and the amount of training such technicians have received; the training in emergency driving required for drivers of such vehicles (all should avail themselves of the defensive driving courses of the National Safety Council); the number of such vehicles available for 24-hour emergency service and the number available only part-time, and their locations in the community to be served. The degree of cooperation between various agencies providing such service and their availability to the entire geographic community should also be reviewed. What records are kept? Of the above, *the most important facet is the training of the emergency medical technicians-ambulance to render life support at the scene of the emergency and in transit.*

(4) *EMERGENCY HOSPITAL FACILITIES, STAFF, EQUIPMENT:* Emergency departments should be evaluated in terms of facilities, staffing, equipment, and geographic location; the types of emergency the facility can handle; current community mechanisms for determining the facility to which an emergency case is taken; and arrangements for transfer of the patient to a more

appropriate facility. Within the facility, evaluation should be made of the methods used to distinguish nonurgent cases from true emergencies and for separating the two types of care so that the emergency facility remains available for emergencies: the availability of poison control data to the facility; the availability, in addition to customary emergency services, of psychiatric emergency care; and the adequacy of medical records on emergency care.

This survey of the current status of emergency care in the community is essential to any realistic planning for the future, and its importance should be clearly recognized by the council members since, in at least some instances, it will be the adequacy of their own services that the council members will be reviewing. One advantage of having all providers of emergency services represented on the council is that it facilitates the gathering of this information. For this reason, an intensive effort should be made to have all local community hospitals involved in the council's activities.

The importance of this survey should also be recognized because it can, depending on the size and complexity of the community and the number of services involved, be a process lasting several months.

Not only the size of the community affects the length of the study, but also the fact that, to be effective, it must concern itself with the handling of emergency situations as it actually exists in the community, not as it may appear "on paper". The community may have a seemingly adequate program which exists only in theory.

To give examples from evaluation of the four components: The schools may include first aid training for children and adults, but how many individuals have actually achieved certification? If there is a universal emergency telephone number, how well is it known; how often is it used in reporting emergencies in contrast to other methods? Ambulance services may have standards for attendants' training which are satisfactory, but how many of the attendants now on duty actually meet those standards? Hospital emergency rooms may be theoretically prepared to treat emergency cases, but how many are adequately staffed and equipped?

Regardless of the time involved, obtaining factual information in these four areas is the essential first step in council planning.

It should also be recognized that this type of survey is not a "one-time thing", but should be a continuing activity of the council. Once the initial community evaluation is completed, the situation in each of the four components should be reevaluated at regular intervals to identify both improvements and still-existing gaps or defects in the service. Such evaluations serve a double purpose: they provide the council with information needed to plan further improvement in the service; and serve as a stimulus to the various agencies providing the services to keep them at as high a level as possible.

EVALUATION REPORTS: As indicated in the section on organizing a council, it is recommended that council subcommittees for the four components be given responsibility for actually conducting these surveys and that reports on their progress be presented at the council's monthly meetings. In this way, not only will the subcommittees be encouraged to keep the review under way more than if they are given a set deadline for presentation of a final report, but also the council will be able to identify more rapidly the problem areas both in the current emergency care system and in the survey questions, including data previously omitted and methods for obtaining better cooperation from those surveyed.

These suggested areas of investigation are given primarily to indicate the need for continuing investigative activity in the four components after the initial review is completed. Both the initiation of suggested areas of study and the gathering of data, once the council approves such a study, should be a regularly scheduled subcommittee activity.

III. PLANNING FOR BETTER EMERGENCY CARE

The surveys provide the basis for planning and might well be compiled with overall plans for the future in a "White Paper" on the present and proposed future of emergency medical services in the community.

As noted in the introduction, a good emergency medical services system is capable of marshalling the health resources essential to meet the medical emergency, whatever its magnitude.

Ideally, when an emergency—a traffic accident, for example—occurs, the sequence of events should be:

1. Appropriate first-aid measures are initiated and an observer calls the universal emergency number (911) for help;
2. The call is transmitted to the emergency medical services dispatcher, who gets the essential data concerning the accident;
3. The dispatcher calls the nearest available emergency vehicle station to render emergency care and transport the accident victim, calls the police for traffic control, and the fire station in case of fire;
4. The ambulance arrives promptly and its trained personnel evaluate the injuries, provide necessary on-site care, including all essential life support, and radio the dispatcher to find out the nearest hospital with space and appropriate facilities; records of injuries and treatment are begun;
5. As the ambulance leaves the scene, the dispatcher notifies the hospital that it is on the way;
6. En route, if not earlier, the emergency medical technician-ambulance makes radio contact with the hospital emergency physician on duty, reporting on the patient's condition and receiving further instructions for care during the trip;
7. At the hospital, the ambulance is met by a physician, the patient

and the records are transferred to the hospital, and all the staff, supplies and equipment necessary for optimal support of the patient are mobilized in his behalf. Such a staff and services should be available 24 hours a day—seven days a week.

The community evaluation should indicate to the council where its own community services fall short of this ideal. The planning process then begins with the identification of short-range and long-range improvements: those which can be initiated simply by better coordination and use of existing resources, and those which require creation of some new resource.

Again, the areas for improvement come under the four basic components previously listed. How can youngsters and adults be better trained in basic first aid, and how can emergency medical technicians-ambulance be trained to give better on-the-scene emergency care? How can the communications network be improved to provide quicker notification of emergency situations, quicker dispatch of emergency vehicles, quicker assignment of the patient to the most appropriate hospital, and adequate communication with the hospital emergency department physician while the patient is en route? How can standards for ambulance services be improved, both as to the equipment of the vehicles and as to the training of emergency medical technicians-ambulance? How can hospital emergency department services be improved?

The following recommendations, based largely on the American Medical Association's *1967 Conference on Emergency Medical Services**, but updated in the light of later information, provide general planning guidelines for the four components of the emergency system. To some extent, these recommendations also form the basis for the earlier suggestions for evaluation of the community's current system.

A. FIRST AID AT THE SCENE
   1. All segments of the public should be trained in American National Red Cross standard first aid, or its equivalent.
      a. Training should be part of the curriculum of elementary and secondary schools.
      b. First aid training should be encouraged for adult programs.
      c. Management and labor should include Red Cross or equivalent standards as part of its industrial safety training program.
   2. Review of first aid, the fundamentals of emergency medical treatment and the appropriate role of allied health professionals should be an early part of medical, dental, and nursing school curricula.
   3. Advanced first aid training should be required for all police and fire personnel.

*Conference proceedings available from Department of Community Health, AMA, 535 N. Dearborn Street, Chicago, Illinois 60610.

   4. Local medical societies should offer advice to local Red Cross chapters, police and fire academies, and any other parties involved in teaching first aid.

B. COMMUNICATIONS
   1. A study should be made of available information on existing emergency communication systems relating to urban and rural areas. Information should include:
      a. Data on cost
      b. Distances involved
      c. Installation time and cost
      d. Controls
      e. Equipment
      f. Periodic investigation
   2. Emergency communications should include, but not be limited to, the following 24-hour capability:
      a. To provide the availability of a single emergency telephone number (the 911 concept);
      b. To provide central dispatching;
      c. To direct two-way communication between emergency vehicles and emergency facilities;
      d. To have flexibility to handle emergencies of any magnitude;
      e. To provide two-way communication between physicians and emergency facilities;
      f. To provide two-way communication with law enforcement agencies and other agencies charged with emergency services.

C. TRANSPORTATION
   1. Specifications of the American College of Surgeons and the National Research Council for minimum equipment for ambulances should be accepted, with certain additions, including antidotes for poison;
   2. Every ambulance should have at least two emergency medical technicians-ambulance available for on the scene care and care en route to the hospital. Technicians should be given basic emergency care training in courses taught by physicians at the community level, with advanced first aid training required as a prerequisite. Annual refresher courses should be given.
   3. Courses in defensive driving, such as those being conducted nationwide, should be required for all personnel driving emergency vehicles.

4. The model ambulance ordinance should be endorsed and promoted.

5. Occupation of emergency medical technician-ambulance should be developed to a "career status" to enhance effectiveness, recruitment, and stability.

6. Study should be made of the feasibility of using a multipurpose helicopter service in transporting the ill and injured, both in urban and rural areas, especially in moving emergency patients from primary to specialty hospitals.

D. EMERGENCY FACILITIES

1. The community's emergency departments should be evaluated in terms of facilities, services, and personnel, with emphasis on the importance of the immediate availability in the emergency department of skilled physician care. Consideration should be given to the concept of emergency classification or categorization at a community level, based on the type of medical care that can be rendered. Standards should be established governing the transfer of patients to other emergency facilities when necessary.

2. New patterns of medical care, especially in the emergency department, emphasize the need for separation of the non-urgent patient from the true emergency. Alternative facilities for the care of the non-urgent patient should be developed, whether it be in hospital outpatient clinics, group practice clinics, industrial clinics, private physicians' offices, or other. The design of emergency departments and services should be such that they could be rapidly augmented for mass casualties.

3. Every emergency department should have a poison control center or immediate access to one operating under the standards of the American Association of Poison Control Centers.

4. More emphasis should be placed on recognition of psychiatric emergencies and the role of the psychiatrist in the emergency department.

5. Emergency department records should become a part of the unit record system of the hospital and evaluated using the same standards employed elsewhere in the hospital.

6. A committee of the hospital medical staff should be responsible for the continuous review of the emergency department services—equipment, facilities, procedures and records—so

as to assure optimal medical care."

7. A mechanism should exist to permit periodic review, by physicians, nurses, and medical technicians-ambulance, of the complications and fatalities experienced during the previous week or month.

SHORT RANGE PLANNING

Essential to effective health care planning, because of the cost of constructing and equipping completely new facilities, is full and efficient use of existing facilities as preliminary to adding new resources.

In emergency care, deficiencies are often due to lack of planning, lack of coordination, and lack of any central point to provide the coordination. Many communities already have the facilities, the personnel to provide improved care; the council's first role is to provide the focus for coordination of these resources.

While improvements are usually possible within all four areas, it remains a truism in emergency care that "deliberate speed is essential" —speed in reporting the emergency, speed in getting an emergency vehicle to the patient, and speed in providing the appropriate emergency treatment.

Clearly, this speed will be dependent upon the communications network, and particularly upon the existence of a control center for all emergency situations. Lack of a single agency to which all emergency medical calls can be routed, with the capability of selecting the emergency vehicle nearest to the scene of the accident and routing it to the nearest emergency facility with the necessary equipment, personnel, and space— this can be the single greatest factor in delaying care.

Accordingly, establishment of such a dispatching center may well be the first major addition to be contemplated in the community's emergency medical service system.

LONG RANGE PLANNING

Under the head of long-range planning will come such matters as increased ambulance service, helicopter use where justified, improved communication equipment, new training programs for ambulance personnel, the public, and health professionals generally, improved ordinances governing emergency vehicles and other facets of the emergency system, and preparation for large-scale emergencies. Some hospitals may desire

---

*Standard I, Emergency Services, of the revised "Standards for Accreditation of Hospitals" (Joint Commission on Accreditation of Hospitals, specifies that "A well-defined plan for providing emergency care, based on community need and the capability of the hospital staff shall exist within every hospital." This standard is further interpreted, "The degree to which a hospital provides emergency care should be guided by a community based plan. If such a plan exists, the hospital and its medical staff should demonstrate evidence of participation in the development and implementation." This standard and its interpretation should provide substantial support to council efforts to bring all hospitals in the community within the community-wide plan, and to foster establishment of an ongoing medical staff committee for review of emergency department operations in each hospital.

to close their emergency departments, others to upgrade theirs as part of a community-based plan.

"Short-range" and "long-range" are only relative terms. The "short-range" planning outlined here is "short-range" only in the sense that it takes priority in planning, and consists primarily in making better use of existing resources; it may take months, or even years to bring to fruition. The "long-range" planning has no terminal point—there is unlikely to be any point of time at which the council can say its work is complete and the system is now perfectly capable of meeting any and all emergencies.

The community changes, the health facilities change, the emergencies change, and the council must be prepared to change the emergency system accordingly. The first step—bringing the interested parties together in a council to attack this unending problem—may well be the most important.

∽ ∽

REFERENCES:

This selective list of references supports the statements contained in this document. It is not intended as a all-inclusive bibliography of publications in this field.

1. AMERICAN HEART ASSOCIATION. *Cardiopulmonary Resuscitation: A Guide for Community Organization.* New York, New York, 1967.

2. AMERICAN MEDICAL ASSOCIATION. *Proceedings, Conference on Emergency Medical Services.* Chicago, Illinois, 1967.

3. AMERICAN SOCIETY OF ANESTHESIOLOGISTS. *Recommendations for Community Wide Emergency Medical Services Resuscitation and Intensive Care.* Park Ridge, Illinois, 1967.

4. DIVISION OF MEDICAL SCIENCES, NATIONAL ACADEMY OF SCIENCES/NATIONAL RESEARCH COUNCIL. *Accidental Death and Disability: The Neglected Disease of Modern Society:* Washington, D. C., 1966.

5. DIVISION OF MEDICAL SCIENCES, NATIONAL ACADEMY OF SCIENCES/NATIONAL RESEARCH COUNCIL. *Medical Requirements for Ambulance Design and Equipment.* Washington, D. C., 1969.

6. DIVISION OF MEDICAL SCIENCES, NATIONAL ACADEMY OF SCIENCES/NATIONAL RESEARCH COUNCIL. *Training of Ambulance Personnel and Others Responsible for Emergency Care of the Sick and Injured at the Scene and During Transport.* Washington, D. C., 1968.

7. HAMPTON, OSCAR P., JR., M.D. *The Systematic Approach to Emergency Medical Services.* Bulletin, American College of Surgeons, Chicago, Illinois, 1968.

8. STANFORD RESEARCH INSTITUTE. *Emergency Medical Services Survey and Plan Development.* Menlo Park, California, 1968.

9. U. S. DEPARTMENT OF TRANSPORTATION. *Highway Safety Program Standards 4.4.11, Emergency Medical Services.* Washington, D. C., 1967.