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Department  
of Transportation  
National Highway  
Traffic Safety  
Administration

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**Emergency Medical Services and  
Trauma Care Systems:**  
Developing Better Approaches to  
Care for Life-Threatening Traumatic  
Injury in States and Communities,  
and Ideas for Federal Activity as  
Supporting Partner

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September 1986

United States.

Report to the Secretary of  
Transportation by the National  
Highway Safety Advisory  
Committee,



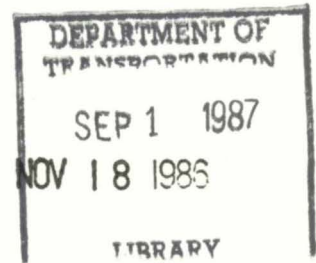
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## NATIONAL HIGHWAY SAFETY ADVISORY COMMITTEE

U.S. Department of Transportation  
Washington, D.C.

Honorable Elizabeth Hanford Dole  
Secretary of Transportation  
Washington, DC 20590



Dear Secretary Dole:

The National Highway Safety Advisory Committee is pleased to present this report on Emergency Medical Services and Trauma Care Systems in the United States. Emergency care is crucial when vehicle crashes and other life-threatening events occur. The National Highway Traffic Safety Administrator directed your Advisory Committee to review national trends in EMS and trauma care, and identify needs appropriate for Federal attention.

The Committee's major conclusion is: fast, effective trauma care must be available to every community in this country. When communities coordinate EMS with effective trauma care systems, trauma death and disability are reduced.

Initiatives for systematic trauma care must begin with local medical and governmental leadership. These local leaders are in the best position to match the community's health resources with its emergency care needs, and then initiate improvements. They can create community awareness of the value of EMS and trauma care, and persuade citizens to support new approaches.

The cost of an effective trauma system is substantial. The benefits may not be easily demonstrable in dollars and cents terms, but are nonetheless proven and can in fact be calculated. Communities willing to make this investment on behalf of their citizens stand to achieve health benefits and economic savings that far outweigh start-up costs. Even though many communities have made this commitment, we are at the beginning of what can be accomplished when prehospital and hospital care are better organized to treat the most severely injured.

We learned during our review that communities appreciate reasonable Federal "partnership" support for emergency response and care. There are a number of opportunities for your Department to be of direct assistance. You are able, for example, to survey efforts nationally and then advise communities on programs judged most effective. We found that components of particular EMS and trauma systems, with some adaptation to fit individual community needs and

assets, can serve as "models" to assist other communities in improving their own trauma care systems. When you communicate these new developments as part of a technical assistance initiative, you directly facilitate new program start-ups.

Your program is already on the right track in many areas. DOT serves as a partner in seeking national consensus standards to improve emergency care in all communities. You are also carrying out a demonstration to train EMS instructors in caring for pediatric trauma victims. And, you have begun to involve EMS and trauma specialists in promoting occupant restraints and alcohol and drug safety. These specialists are strong proponents of highway safety who can speak with firsthand knowledge of vehicle crash trauma. We endorse these and other efforts in your EMS and trauma program.

We were impressed throughout our review with the benefits of EMS and trauma care. We urge your continued support to States and communities trying to improve emergency care delivery. At the same time, we recognize that Federal assistance must be truly a supportive endeavor, and not one to supplant State and local responsibility.

Madam Secretary, the Executive Summary on Page 5 highlights our views and recommendations for your consideration.

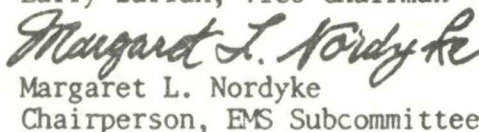
We look forward to your response, and as always, the Committee stands ready to work with you and the National Highway Traffic Safety Administration.

On behalf of our Members, we acknowledge your personal dedication to safety. We have appreciated the opportunity to serve.

With warmest personal regards,

  
Stuart Northrop, Chairman

  
Larry Zarian, Vice Chairman

  
Margaret L. Nordyke  
Chairperson, EMS Subcommittee

Enclosure

CONTENTS

NATIONAL HIGHWAY SAFETY ADVISORY COMMITTEE ..... v  
Description of Responsibilities

ACKNOWLEDGMENTS ..... v  
Participants in the Committee Review

INTRODUCTION TO THE REPORT .....1

OVERALL FINDINGS .....3

EXECUTIVE SUMMARY .....5  
An Appropriate Federal Role: Recommendations  
Highway Safety Grants  
Special Federal Demonstrations

COORDINATED EMERGENCY CARE .....8  
Community Support for Better Care  
An Early Assessment and Plan  
Designating Trauma Centers  
Funding Improved Care Systems  
Quality Assurance and Accountability

VOLUNTARY NATIONAL STANDARDS .....12

NETWORKS TO PROMOTE HIGHWAY SAFETY .....12

FURTHER INFORMATION .....13



## NATIONAL HIGHWAY SAFETY ADVISORY COMMITTEE

The Advisory Committee was created by Congress in 1966 to advise the Secretary of Transportation on highway safety programs conducted by the Department. The 35 Presidentially-appointed Members provide an independent forum in which issues, concepts, policies and programs are publicly addressed in order to develop a basis for reporting findings to the Secretary. These findings and recommendations present the Committee's views on appropriate Department responses to major highway safety problems. Through the years, Committee Members have reviewed and advised the Secretary on highway safety standards, research programs and other Departmental activities to foster improved highway safety.

It is essential as well to recognize the contributions Committee Members have made to improve highway safety through their individual capacities as concerned citizens. In this role, Members have been active in leading and supporting improved highway safety programs in their own communities and States, for example in promotion of safety belt usage and stronger alcohol safety laws. This valuable support is in the highest tradition of volunteerism by concerned citizens.

### ACKNOWLEDGMENTS

The Committee wishes to extend its appreciation to the NHTSA professional staff for their active support throughout the review of Emergency Medical Services and Trauma Care Systems. We especially thank CDR Thomas Scheib and Mr. Charles Glass of the Traffic Safety Programs Office of NHTSA.

We wish to thank Joseph Cameron for managing our review and preparing this report.

The following organizations offered the Committee the opportunity to review their programs and facilities, and to discuss current EMS and trauma care issues with their very knowledgeable staffs. The Committee extends a very appreciative thanks for your courtesy, information and the excellent programs being delivered to your citizenry; and specifically recognizes certain individuals who were especially instrumental in arranging and assisting the individual Committee reviews. These programs, and the many other excellent efforts underway around the country, offer an invaluable starting point and "model" for consideration by communities planning to upgrade their own EMS capabilities and coordinate their treatment of traumatic injury:

\* Dr. Paul R. Meyer, Jr., Professor of Orthopedic Surgery and Director, Spinal Cord Injury Program, Northwestern University, Chicago, former Member of the Advisory Committee and unpaid consultant who unselfishly contributed his time and expertise to the review and this report to the Secretary.

\* Emergency Medical Services Division of the San Diego County Department of Health Services (Gail F. Cooper, Chief).

\* Maryland Institute for Emergency Medical Services Systems (R Adams Cowley, Director).

\* Washington Hospital Center Shock-Trauma Services (Howard R. Champion, Director)

\* EMS Institute (Sue Roselle, Director) and EMS Division of State Department of Health for Pennsylvania (Matt Matthiesen, Director); and School of Engineering (Larry Shuman, Dean) and Department of Industrial Engineering (Harvey Wolfe, Acting Chairman) of the University of Pittsburgh.

## INTRODUCTION

In June 1985, the Secretary and the NHTSA Administrator directed the Committee to review new approaches that States and communities are designing and using to respond more effectively to life-threatening traumatic injuries, particularly those caused by motor vehicle crashes. Injury is this country's number one public health problem.

States and communities recognize that improved Emergency Medical Services and Trauma Care Systems are indispensable tools in countering the effects of traumatic injury. Great strides have been made, but unfortunately not all areas of the United States offer their citizens the best emergency care. Preventable deaths continue to occur, and major injuries are turned into even more severe, lifelong disablements. The cost of failure to improve response and care for traumatic injuries is enormous, both in terms of needless suffering and sorrow for the victim and families, and the economic loss borne by all of us.

Improved approaches are now available to all communities, as this report describes. When effective EMS and trauma care are integrated, deaths decline, and disabling injuries are avoided or lessened in many instances. Scientific data banks and evaluative findings are available to substantiate the positive effects of integrated systems. The Committee was encouraged by improvements witnessed throughout the country. We urge communities without a full set of these new approaches in place, to contact areas that have completed the difficult process of implementing them, and then organize locally and regionally in order to create systems best suited for the unique needs of their locality and citizenry.

The Committee acknowledges the important assistance provided by the Federal Government, and encourages additional activities as a supporting partner to States and communities. The Committee presents recommendations for appropriate Federal actions to assist communities attempting to integrate trauma care systems. Our conclusions and recommendations are highlighted in the Executive Summary. We fully recognize your budget constraints, and have tailored our recommendations accordingly. Your trauma program is underway and helping. We believe it should be continued, and several new initiatives added.

Integrated trauma care can offer great benefits to all citizens of this country. Citizens can play an important role in actually receiving these benefits: they need to learn about trauma care available in their own community, and understand its quality. We encourage local medical and government leaders who would remain with the status quo, or delay in needed improvements, to consider the following results of the National Academy of Sciences 1985 Report, Injury in America:

- \* Injury is the principal public health problem in America today, and results in about 150,000 deaths and over 70 million injuries annually.
- \* Injury is the number one killer from birth to age 44, and the fourth leading cause of death for all ages combined, exceeded only by heart disease, cancer and stroke.
- \* Injury is our most costly health problem, resulting in economic loss of \$75 to \$100 billion each year.
- \* Injury strikes at younger ages, and thus leads to the loss of more years of productive working life than all forms of cancer and heart disease combined.
- \* Motor vehicle crashes are the major cause of death and severe disability from injury.

These trends are expected to continue. A 1966 landmark study by the National Academy of Sciences called accidental death and disability the "neglected disease of modern society". The 1985 update tell us that insufficient progress has been made in understanding and controlling these severe public health problems.

The Committee believes that effective response and definitive care for traumatic injury absolutely must be available for every community in this country. To provide this level of emergency care, regionalized programs will be needed in many instances, and in predominantly rural areas of the country, trauma victims may have to receive interstate aeromedical transport and care. In this vein, the Advisory Committee presents the following trends and recommendations for the Secretary's consideration.

## OVERALL FINDINGS

The field of integrated emergency response and care is changing throughout this country, and the changes are enormously complicated and rapid. Thus, to describe its overall status and needs at any given time is difficult if not impossible. Communities are in different stages of progress. Programs are often limited to current medical resources, or implement trauma services thought to be needed. But certain overall trends are evident, and encouraging. There is a convincing case for communities to begin improving delivery of trauma care services to their citizens:

\* When EMS and trauma care systems are upgraded and coordinated, communities can deliver fast, definitive and ultimately effective medical care to traumatic injuries. Quite simply, this will keep victims of vehicle crashes and other life-threatening occurrences alive who might otherwise die. Evidence clearly indicates that death and longterm, disabling injuries can be reduced, and patient recovery accelerated. Again, a key is an integrated program geared to actual injury patterns in the community being served.

\* When communities implement a coordinated system effectively, and employ a trauma center designation plan that uses medical facilities sensibly, persons with the most severe injuries are increasingly able to bypass the nearest hospital (which is often unprepared to treat severe traumas) and travel directly to a specialized trauma unit offering definitive care. Speeding patients to the right facility has required that communities decide which hospitals are best suited for designation as certified trauma centers. Bypassing is full of controversy. Local ordinances, agreements and behavior have required change. This demands commitment to better care. And strong leadership by medical and governmental officials in the community. As can be imagined, this always involves process of changing attitudes. Ultimately, changes must be backed up by support from the entire community, and an understanding of what is being attempted, i.e., delivery of better emergency care.

\* Many communities are improving medical data collection and evaluation practices to determine the effectiveness of coordinated approaches to trauma care. Emphasis is on the degree these new systems can improve patient outcome in a cost-effective manner. It is now possible for trauma and EMS authorities to judge the effectiveness of their community in comparison to national norms. The key is meaningful data which indicate when system and care modifications are needed. Medical audit of each trauma case would allow medical directors and trauma specialists to make improvements, and achieve better results from their resources. Certain communities have developed their own quality assurance and accountability procedures. These could serve as useful starting points for new efforts.

\* Communities are finding that higher grade, coordinated systems are very expensive. Patient charges and governmental and private insurance coverage are in the forefront of debate on how to maintain stable funding. Aeromedical transport of severe injuries adds substantial cost, and in most instances is probably unable to support itself from patient billings alone. Communities are finding, however, that investment in integrated systems more than pays for itself in the long run when all issues of private and public cost are considered. One has only to consider the expected cost of care and projected economic losses for patients with permanently disabling injuries. One trauma mechanism alone - motor vehicle crashes - can crystalize the issue: this is the number one health problem affecting ages 5 to 34, and a major one through 44. It spans much of our productive life. The true cost of trauma ought to be considered when communities make final decisions on upgrading and integrating EMS and trauma care.

## EXECUTIVE SUMMARY

The Advisory Committee presents these findings and recommendations for consideration by the Secretary, and encourages review by States and communities:

\* Deaths and disabling injuries from trauma are reduced when States and communities coordinate Emergency Medical Services and Trauma Care Systems: The Committee urges all areas of the country to recognize the effects of trauma, and begin these new services for their citizens. The National Academy of Sciences characterized trauma as the "neglected disease of modern society". EMS and trauma care are powerful, proven tools that should be coordinated and managed more effectively.

\* Citizens need to understand the effects of traumatic injury, and benefits of EMS and trauma care. We recommend local officials and health professionals build citizen commitment. We recommend a Federal initiative to increase this awareness: on a one-time basis, develop a multimedia presentation community leaders can use to inform citizens about traumatic injury, and benefits other communities have gained by coordinating EMS and trauma care. A nationally televised program in prime time could aid this process. We urge major networks and local stations to consider this service to their viewing public.

\* Communities considering new, coordinated approaches to emergency care should begin first with an assessment of injury patterns and medical resources in their area. The preparatory steps of successful systems in other jurisdictions ought to be reviewed early, and then adapted to satisfy any unique needs. We recommend DOT pinpoint the communities with these "model" assessments, and make this information available to other jurisdictions in the start-up stages of their own improvements.

### An Appropriate Federal Role: Additional Recommendations

The Committee recognizes the reality of growing Federal budget constraints. However, the Federal role can be an important one when limited Federal funds are focused in ways that offer States and communities valuable technical assistance:

\* Continue support to evaluation models that communities can employ to measure system effectiveness in reducing effects of traumatic injury.

\* Continue to support trauma registry development. Registries must collect meaningful data that can be used to modify system response and behavior. Communities should provide data to these registries, and then use them to compare their effectiveness locally with national norms of trauma treatment.

\* A rational system for designating trauma centers and instituting medical quality assurance is paramount. Encourage medical professionals and their organizations to work with State legislators and local government in developing legislation and ordinances to guide designation of centers and require medical audits in trauma injury cases.

\* Develop data showing the societal savings of improved response and care systems, including cost avoidance versus initial investment costs nationally.

\* Disseminate information on trauma care programs that work well in particular States, as technology assistance to communities considering improved response and treatment systems of their own.

\* Support communities in their endeavor to educate citizens about the realities of EMS and trauma care and their potential value. For example, communities need to understand that the mere presence of emergency response systems does not guarantee good care for traumatic injuries. Citizens need to understand the quality of care they actually receive.

\* Continue to support development of voluntary national standards to guide emergency response and traumatic injury care; and further assist States and communities in becoming aware of this process and its merits.

\* Bring EMS personnel, trauma doctors and trauma nurses into a formal, national safety network to promote greater usage of all forms of vehicle occupant restraints. Use this network for stronger alcohol and drug laws. EMS and trauma professionals offer a powerful voice for highway safety.

### Highway Safety Grants

Communities need to be aware that your annual Section 402 State and Community Grants are available from their State for upgrading EMS and trauma care. DOT views EMS as a high payoff program. Under Federal rules, these grants can be used by communities as seed money to start new programs. Where outcomes are positive, communities must be prepared to invest their own money if they wish to continue the program. Here again, local leaders must build citizen support for this investment.

### Special Federal Demonstrations

In May 1985, your Department began a demonstration project to train EMS personnel in special methods of handling pediatric trauma cases. Graduates will return home to train others. We commend you for this program (which is jointly funded by the Department of Health and Human Services). We encourage your continued support, and ask that you consider a similar effort in geriatric trauma care. This is a prime opportunity to demonstrate the giant benefits that can occur when even small amounts of Federal money are focused in areas of critical need.

## COORDINATED EMERGENCY CARE

The Committee's main focus was on the trends, advantages and needs of new approaches which coordinate or integrate emergency response capabilities and effective trauma care management. Many communities and regions have undertaken a coordinated service, but in the view of many, this country contains a patchwork of various approaches, and a standard system has not yet fully emerged. There is a need for more sharing of information and experiences as various communities strive to coordinate their emergency response and treatment systems.

The advantages of a coordinated approach are generally accepted. Results such as greater survival rates for victims of traumatic injury, and more rational use of limited financial and medical resources are apparent. As the Committee reviewed the efforts by several communities to offer improved systems, we found a number of trends, as well as needs. These are covered in the balance of this report., along with recommendations for both local and Federal officials to consider.

This report has several overall themes: every community needs effective access to acute EMS and hospital care. Coordinated response and treatment systems are the most effective approach for communities to undertake. Many community systems do not always differentiate between traumatic and less threatening injuries, and hence fail to deliver the most effective treatments now available in this country.

### Community Support for Better Care

Citizens should become more aware of EMS and trauma care services in their respective communities. There is a need for learning how to access these in times of emergency, and how to understand the quality of care rendered versus the level of care required. Medical leadership has a responsibility to educate citizens.

In order to plan and implement integrated systems of emergency response and care, there must be strong citizen support, and an understanding of why such services should be offered. Local officials must assume strong leadership roles, with the support of the medical community. The Committee observed that where a strong, coordinated system was in operation and growing in capability, local support and key officials were heavily involved and supportive. One of their major responsibilities at the outset of planning integrated systems is to educate citizens on the effects and costs of trauma, and the manner in which new approaches to emergency care offer benefits to all persons in the community. Citizens must learn the true costs of disabling injuries, and how they affect the community.

The Committee believes that a possible Federal initiative might be a one-time funding of an effective means of promoting effective EMS and trauma care in all States and localities. For example, this might take the form of a multimedia presentation to demonstrate the experiences and achievements of communities with exceptionally fine and achievable integrated systems. It might include actual trauma

cases, and how the community's system responded and then treated the injured. There is very dramatic evidence available to demonstrate the effects of improved systems of care, and it should be employed to encourage communities to upgrade their own response and treatment.

We wish to emphasize that the support of all local officials is critical before new systems can be started. All local officials must be worked with, educated and enlisted: city council, mayor, city administrator or manager, fire, police, EMS authority and so forth. We cannot stress too strongly that the support of all key local officials is the critical starting point, and will in turn give new systems a local foundation and local identity from the start, and thus inject the support of the local political system.

#### An Early Assessment and Plan

Any community starting its planning toward integrated systems begins with a number of concerns: injury patterns, EMS capability, medical facility assets, geographical features and so forth. The Committee had an opportunity to see how an assessment plan was useful in guiding communities in the early planning stages for integrated systems. These plans analyzed prevailing injury patterns, and then assessed response and treatment being offered. Survival rates were determined from medical records, and individual hospital facilities were reviewed. Key officials in local government and the medical community were interviewed, and in this manner local leaders were involved at an early stage.

Thus, a community's existing level of service is the starting point, and from here officials must judge exactly what improvements are achievable. No two communities have exactly the same needs, and any "model" plan available for guidance from a community that has initiated an integration process must be viewed as potentially valuable guidance that can be tailored to accommodate unique local needs and capabilities.

#### Designating Trauma Centers

Perhaps the most difficult part of moving toward an integrated emergency care system is designating which existing medical facilities will receive and then treat the most critically injured. This is the designation process, and in effect it begins the process of bypassing the nearest medical facility in favor of a designated trauma center. In most if not all cases, this will require political and governmental decisions at the local level, and attitudes and behavior will have to be addressed.

Thus, the great advantage is the ability to transport the most severely injured to the specific unit where definitive care awaits, and ending the traditional practice of responding to the closest medical help, regardless of whether it is in the best immediate interests of the trauma victim.

Communities should designate only the appropriate number of trauma centers, and no more. Then, the investment that will be required can be concentrated rather than scattered among a large number of geographically bunched medical facilities. Problems of turf and politics have to be overcome, and fears eased that if one center is designated from among many, traditional patient patterns will be significantly disrupted. In reality, a sound designation procedure can make certain the most severely injured are transported to trauma centers.

To be successful, trauma centers must be community responsive, will demand education of the community and will need a continuing community commitment.

Medical facilities often mentioned that stable and adequate funding is a major, continuing problem. Upgrading and integrating care systems is a very expensive process, and to the degree placement of trauma centers can be rationally carried out, limited funds can be focused and not scattered. For many areas of the country, this will mean a move toward a "regional" system. This will be especially true for rural areas and small towns adjacent to one another. Unless all resources are concentrated, there will never be enough funding to equip trauma centers with the newest equipment and best personnel, and the entire trauma care system will be undercut, and positive effects reduced.

There is another major concern with proper designation and structuring of the so-called "catchment area" (i.e., the physical area that each trauma center will serve and receive traumatic injuries from): the appropriate patient case load in order to maintain medical skills at a proper level. What is termed the critical mass of trauma patients is of crucial importance, and must be a chief consideration when planning the designation process.

#### Funding Improved Care Systems

Adequate and permanent funding is a major stumbling block for many communities trying to move toward better, and often more expensive systems of care. In the final analysis, the bulk of the resources will have to be derived locally. This underscores the emphasis on local citizens understanding trauma costs, and the benefits they stand to gain from improved care. Local leaders have the responsibility to educate citizens about trauma incidence, and why its longterm effects demand improved response and treatment approaches. The final answer may be local funds and revenues dedicated to EMS and trauma care systems, and voted on by local citizenry, i.e., those served by the better care their money supports. A number of options were reviewed by the Committee, including a local tax surcharge on customer telephone bills, or on motor vehicle violations. This latter approach has been used successfully to support alcohol safety programs in a number of States. An additional fee might be applied to vehicle registrations at the State level. But, in the final analysis this funding strategy

will remain strictly a matter for State and local decision. This would of course heighten the need and value of community support and recognition of trauma care services.

Communities initiating an integrated system may often charge trauma units a designation fee, and this income can help support overall management by the local authority. However, these fees may be slated to decline over a period of time, and must be replaced by another form of support. The Federal role will not include large grants to maintain these efforts; local support must be available. Both State and Federal assistance will be of aid, but in most instances communities realize that Federal seed funds to plan and evaluate cannot become subsidy to operate their systems. There is the realistic acceptance that local support and citizen knowledge of the value of these systems must be in place for new approaches to survive. Data on patient outcome and survivability as a result of better treatment of traumatic injuries can demonstrate to citizens that the local investment paid off.

#### Quality Assurance and Accountability

Quality assurance must be built into any EMS and trauma care system, and as one Committee Member noted, a good system demands a "medical review body with teeth". The key is two-part: establishment of standardized and meaningful medical data collection; and use of formal medical review groups with the authority to institute change when patient outcome is not at expected levels. A good medical audit system can produce the data convince citizens the investment in new systems was sound. It will also provide preventable death data that other localities will find persuasive when considering their own system upgrades.

A system to track and measure both prehospital and trauma unit performance is able to set standards for performance, measure compliance with these standards, and then identify and correct the deficiencies found. State legislation establishing minimum standards might be in order, and in certain States this has already been enacted. For example, it has been suggested by some medical personnel that autopsies might be required for all trauma deaths.

The generation of data on patient outcome provides another benefit. Communities with this information can participate in the ongoing development of trauma registries, i.e., national data files that measure many aspects of trauma care including rates of survivability. These are valuable innovations that permit national norms to be developed, and in turn allow community trauma centers to assess their performance against prevailing trends. Registry data also permit national studies to ascertain the degree of success against injury patterns reported by the National Academy of Sciences. This has a major implication for planning health delivery systems, and for programmatic decisions by individual communities. Finally, registry data allow safety planners to pinpoint highrisk situations that produce large levels of injury - for example, alcohol-involved accidents by various age groups and vehicle types such as motorcycles - and then to educate the public on ways to prevent further death and injury.

## VOLUNTARY NATIONAL STANDARDS

The Committee endorses the current development of voluntary national emergency care standards by a broad representation of EMS, trauma care and State/local government interests. We encourage continued participation and support by your Department.

This process of developing guidance for urban and rural EMS services represents a healthy change toward national consensus, and a move away from Federal mandatory standards that governed your EMS program in the 1960's and 1970's. This consensus approach can be effective in promoting broad acceptance of more productive procedures for emergency response and treatment.

We encourage States and communities to become involved in this endeavor, and to use these valuable standards when each is published. These consensus standards can bring new developments to national attention, and represent the most efficient means presently available for assuring that guidance is based on broad experience, and reflective of the latest thinking and practices.

The Committee offers these recommendations: Federal support of the voluntary standards process should continue; and State and local EMS authorities should become aware of this process, and then consider the feasibility of implementing these recommended practices into their own emergency care system. Please contact the National Highway Traffic Safety Administration for further details.

## NETWORKS TO PROMOTE HIGHWAY SAFETY

EMS and trauma care professionals should be used to focus public attention on motor vehicle crashes as a major public health problem. The Department has taken steps to accomplish this, but more needs to be done.

Nothing less than a formal, nationally recognized safety network, composed in part of EMS personnel and trauma doctors and nurses, is needed. These dedicated professionals witness daily the results of alcohol and drug impaired driving, and failure to use vehicle occupant restraints. They are strong proponents of highway safety.

The Committee therefore offers these recommendations: formalize a national safety network, and to enlist the people who deliver EMS and trauma care, and then enlist the people who deliver EMS and trauma care to promote occupant restraint use, and work for more consistent application of laws to deter alcohol and drug use, especially as it affects safe driving.

EMS and trauma professionals constitute a largely untapped reservoir of credible spokespersons who can get across the real meaning of pain, sorrow and lifelong disabilities caused by vehicle crashes. They offer you an eloquent and powerful voice on behalf of highway safety initiatives in their own communities.

FOR FURTHER INFORMATION

You may obtain additional copies of this report by the National Highway Safety Advisory Committee, and background information on the review conducted by the Emergency Medical Services Subcommittee, by contacting:

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