REPORT BY THE

AUDITOR GENERAL

OF CALIFORNIA

A REVIEW OF LOCAL EMERGENCY MEDICAL SERVICES SYSTEMS

P-522

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Thomas W. Hayes
Auditor General

April 7, 1986

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Honorable Art Agnos, Chairman
Members, Joint Legislative
Audit Committee
State Capitol, Room 3151
Sacramento, California 95814

Dear Mr. Chairman and Members:

The Office of the Auditor General presents its report concerning delivery of emergency medical services. California does not have a standardized, coordinated system for delivering emergency medical services, but local Emergency Medical Services agencies are implementing systems in their areas.

Respectfully submitted,

THOMAS W. HAYES
Auditor General

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SUMMARY

Local emergency medical services (EMS) agencies have implemented EMS systems in their areas. The EMS systems that have been established vary in the quality and quantity of the services they provide and in the degree to which they can respond to emergencies, transport victims, relay information, and assess the EMS-related capabilities of their prehospital and hospital services. In addition, some hospitals in Alameda and Contra Costa counties have been issued statements of deficiencies by the Department of Health Services' Licensing and Certification Division (division) because they did not provide the EMS services required by their license.

In 1981, Division 2.5 of the Health and Safety Code established the State Emergency Medical Services Authority (authority) to coordinate and integrate all state activities concerning emergency medical services. While the State does not yet have a standardized, coordinated EMS system, the authority is establishing statewide standards for developing EMS systems and for training and certifying emergency medical technicians. The authority is also drafting regulations concerning the implementation of trauma care systems.

Neither the authority nor the local EMS agencies are adequately assessing the effectiveness of their hospital services or the effectiveness of their EMS systems in reducing incidents of death and disability. Most local agencies gather some data to analyze prehospital services and to assist them in decisions such as how to use ambulance and communications units. However, because hospitals are reluctant to provide information, the agencies have collected from the hospitals only limited data, if any, that could be used to assess EMS systems. Another barrier to the assessment of local EMS agencies is that the authority has not yet completed its development of a statewide data management system.

Furthermore, at least three hospitals in Alameda and Contra Costa counties have not provided the emergency medical services they were licensed to provide. The division's files on hospitals in Alameda and Contra Costa counties indicate that at least 20 potentially life-threatening incidents occurred between January 1984 and August 1985 when surgical treatment of some patients was delayed because emergency room neurosurgeons were not available. In some instances, patients were taken to three different hospitals before neurosurgical services could be obtained. One hospital requested and obtained the division's approval to downgrade its emergency medical services license from basic to standby because the hospital could not ensure that neurosurgical services would always be available.

INTRODUCTION

California currently has 28 emergency medical services (EMS) systems. The purpose of these systems is to provide a full range of emergency medical services to victims of serious illness or injury who require immediate medical treatment. Often, these are the victims of accidents, of violent acts, or of diseases of the circulatory system. To provide prompt treatment, the local EMS systems rely on the coordination of several organizations involved in providing emergency medical services, including police and fire departments, ambulance services, and hospitals. (See Appendix A for a schematic representation of how an EMS system works.)

Prehospital Emergency Medical Services

Prehospital EMS personnel include dispatch operators, fire departments, law enforcement agencies, and ambulance attendants. The dispatch operators relay calls for assistance to the appropriate agency. An ambulance is sent for when the need for one is identified, usually by fire department workers. Ambulance attendants are Emergency Medical Technician I's (EMT-I), Emergency Medical Technicians II's (EMT-II), or the more highly trained Emergency Medical Technician P's (paramedics). The ambulance attendants assess and monitor a victim's condition and relay this information to a "base station hospital," whose medical personnel advise the ambulance attendants on the appropriate treatment of the victim until the ambulance reaches a hospital.

EMS Hospitals

Title 22 of the California Administrative Code classifies hospitals according to the emergency medical services they provide. In hospitals that provide the lowest level of emergency medical care, classified as "standby," physicians for emergency services are on call. Hospitals classified as "basic" have an emergency room physician on duty continuously and have a specially designated area that is staffed and equipped at all times to provide immediate emergency treatment. Hospitals that provide the most sophisticated and complete emergency treatment are classified as "comprehensive." These hospitals are more extensively equipped and must be continuously staffed to perform a variety of functions, including dialysis, respiratory care, coronary care, cardiovascular surgery, and radiological and laboratory services. Hospitals classified as standby, basic, and comprehensive must be licensed as such by the Department of Health Services.

Trauma Care Facilities

One or more hospitals within an EMS system may be designated as a trauma care center. These centers are specially equipped and continuously staffed to treat severely injured and acutely ill persons at all times. The base station hospitals direct ambulance attendants to transport critically ill or injured patients to trauma care facilities; other patients are taken to the nearest appropriately equipped hospital in the system.

The Emergency Medical Services Authority

In 1981, Division 2.5 of the Health and Safety Code established the Emergency Medical Services Authority (authority) to coordinate a statewide system of emergency medical services. The Health and Safety Code also gives each county the authority to develop and implement an EMS system either by designating a local EMS agency within its county health department or by creating and administering a joint powers agency with other counties to provide emergency medical services within the counties' region. Presently, there are 28 EMS agencies within the State; 22 counties have independent EMS agencies, and 36 counties participate in 6 regional EMS agencies.

The authority is responsible for coordinating and integrating all activities in the State concerning emergency medical services. In addition to the activities of the 28 EMS agencies, other state and federal agencies and various civic, private, professional, and voluntary associations provide emergency medical services to California residents. (Appendix B lists the responsibilities of 16 state agencies in supporting emergency medical services.)

The authority is also responsible for developing guidelines for county and regional EMS systems, including trauma care centers. In addition, the authority regulates the education, training, and certification of EMS personnel and coordinates the State's medical response to disasters. To assist the authority, Chapter 8,

Division 2.5 of the Health and Safety Code established the 14-member Commission on Emergency Medical Services. This commission serves in an advisory role to the authority and reviews and approves all regulations, standards, and guidelines developed by the authority.

The Governor's Budget for fiscal year 1985-86 indicates that the authority will spend approximately $1.4 million from the State's General Fund and approximately $1.8 million from a federal Preventive Health Services Block Grant. The authority provides monies from the State's General Fund to multicounty EMS agencies that serve rural areas having extensive tourism. The counties must match these state funds with their own funds or with "in-kind" services, such as salaries for EMS personnel. In addition, the authority can use federal block grant funds to contract with local EMS agencies to develop and implement EMS systems and improve existing systems. For example, in fiscal year 1983-84, the authority provided approximately $27,000 in federal funds to the North Coast EMS agency for a study of rural trauma victims. In the same fiscal year, the authority provided $124,000 in federal funds to the Los Angeles EMS agency to design a data collection and evaluation system.

The Department of Health Services

The Department of Health Services' Licensing and Certification Division (division) is responsible for licensing and inspecting hospitals. To ensure that hospitals provide adequate care,

Section 1279 of the Health and Safety Code requires the division to inspect hospitals as frequently as necessary and at least once every three years. The three-year inspection cycle is governed by the federal Joint Commission on Accreditation of Hospitals, which contracts with the California Medical Association and the Department of Health Services to conduct accreditation and licensing surveys.

In addition to licensing and inspecting hospitals, the division is required to investigate complaints and incidents that appear to violate the State's general acute care hospital regulations. When the division confirms a violation, it can issue a statement of deficiencies and require the hospital to submit a plan of correction for the division's approval. Although the division cannot fine a hospital for a deficiency, it can revoke a hospital's license. When the division staff suspect that physicians have violated legal or ethical standards, the division provides pertinent evidence to the Board of Medical Quality Assurance, which conducts an investigation.

SCOPE AND METHODOLOGY

The purpose of this audit was to review the actions and responsibilities of the EMS authority, to evaluate the systems being implemented and evaluated by local EMS agencies, and to review the circumstances surrounding the deaths of certain individuals who were treated in the Alameda and Contra Costa EMS areas.

To determine the extent that EMS agencies have implemented local EMS systems, we interviewed administrators and reviewed records at 6 of the 28 EMS agencies in the State. We visited the EMS agencies in Orange, Alameda, and Contra Costa counties. We also visited the Northern California, North Coast, and Sierra-Sacramento Valley multicounty EMS agencies. We determined whether these EMS agencies were hindered from providing emergency medical services, and we determined the extent to which the agencies evaluated their systems.

To determine whether hospitals providing emergency medical services in the six EMS areas are providing these services, we reviewed files on selected hospitals at five district offices of the division. At the district offices, we identified the complaints against hospitals, reviewed the reports of unusual occurrences filed by these hospitals between January 1, 1984, and August 31, 1985, and reviewed the outcome of the investigations of the incidents by the district offices.

To determine the circumstances surrounding the deaths of certain individuals in Alameda and Contra Costa counties and to document the investigations of those deaths by the Berkeley Licensing and Certification District Office, we interviewed district administrators and investigators and reviewed pertinent licensing and certification files in the Berkeley district office. We also visited two hospitals in Contra Costa County to discuss these deaths with hospital administrators.

AUDIT RESULTS

I

LOCAL EMERGENCY MEDICAL SERVICES SYSTEMS VARY IN THE SERVICES THEY PROVIDE

Local emergency medical services (EMS) agencies have implemented systems to meet their needs in cooperation with public and private agencies such as the California Highway Patrol, the California Ambulance Association, and local hospitals. Presently, these systems vary in the services they provide and the degree to which they can respond to emergencies, transport victims, relay information, train staff, and assess their effectiveness in reducing incidents of death and disability. Since its establishment in 1981, the Emergency Medical Services Authority (authority) has attempted to standardize emergency services in the State by developing regulations and guidelines for local EMS agencies to follow.

Activities of the Emergency Medical Services Authority

Division 2.5 of the Health and Safety Code requires the authority to draft and submit certain standards and guidelines to the Commission on Emergency Medical Services for approval, to publish standards governing EMS personnel such as ambulance attendants, and to review the plans that the local EMS agencies submit annually. In August 1984, the authority published some general standards and

guidelines that a local EMS agency must satisfy if it develops and submits an emergency medical services plan to the authority for approval.

The authority is also developing procedures to assess how well facilities provide emergency medical services, and it is drafting regulations specifying minimum standards for regional trauma care systems. Although the Health and Safety Code required the trauma care regulations to be implemented by July 1, 1985, as of March 7, 1986, the trauma care system regulations were still in draft form. The authority indicated in its 1985 annual report to the Legislature that regulations, standards, and guidelines will receive the authority's highest priority during the next year. Although the authority has responsibility for publishing regulations and standards and measuring an EMS system's effectiveness, it has no formal power to enforce its directives concerning emergency medical services.

Section 1797.121 of the Health and Safety Code requires the authority to report to the Legislature by January 1, 1984, and annually thereafter on the effectiveness of the EMS systems in reducing incidents of death and disability. Although the authority is still not assessing the effectiveness of each EMS system nor determining which systems are best, it is developing an automated data system, and it is defining its initial requirements to provide basic descriptive data on the local EMS systems and to evaluate the effectiveness of the EMS systems. The authority has provided federal funds to Los Angeles,

Marin, and San Diego County EMS agencies for pilot projects to compile data and evaluate the effectiveness of their EMS systems. The Sierra-Sacramento Valley EMS agency is also studying the effectiveness of its EMS system. The authority is currently reviewing each local EMS agency's annual plan to identify deficiencies that must be corrected and to make suggestions for future plans.

Local EMS Agencies

California has 28 local EMS agencies, serving over 99 percent of the State's population, that are either implementing or improving their EMS systems. These agencies prepare plans that include the public and private organizations that, in partnership, deliver the emergency medical services.

The six local EMS systems we reviewed differed significantly in their ability to provide emergency medical care. The systems vary because of financial resources, geographic location, and the availability of medical resources. For example, in one local EMS system, an extensive trauma care system is operating to serve patients needing emergency medical care; in another EMS system, only minimal emergency medical services exist.

The Orange County EMS System

The Orange County EMS system uses Emergency Medical Technician I's (EMT-I) and Emergency Medical Technician P's (paramedics) to provide prehospital services. Thirty-three hospitals in the EMS system are available for its resident population of approximately 2 million and an annual tourist and transient population estimated at 10 million. The Orange County EMS system includes an extensive trauma care system. Within Orange County's 728 square miles, trauma patients are sent to one of 12 designated neurotrauma receiving hospitals; 5 hospitals are specially equipped and staffed regional trauma care facilities. These trauma care facilities have the resources, equipment, and medical staff--including physicians, surgeons, and anesthesiologists--available at all times to treat trauma patients.

The Contra Costa County EMS System

The Contra Costa County EMS system uses EMT-I's and paramedics for its prehospital services. The system serves approximately 700,000 residents within the county's 733 square miles. The hospitals in the county's EMS system include nine that are licensed for basic emergency care and two that are licensed for standby emergency care. The Contra Costa EMS agency has not computed its average ambulance response time.

The Alameda County EMS System

Alameda County's EMS system uses EMT-I's and paramedics for its prehospital services. This system serves approximately 1,137,000 inhabitants within the county's 743 square miles. Fifteen of the hospitals in the county's EMS system are licensed for basic emergency care, and four are licensed for standby service. The Alameda County EMS agency estimated that in 1984 it took ambulances an average of 26 minutes to reach the victim and transport the victim to the hospital.

The Northern California EMS System

In addition to visiting three independent county EMS agencies, we visited three multicounty EMS agencies. The Northern California EMS agency serves eight counties in the extreme northeast portion of the State. These counties encompass 29,576 square miles and support a population of 435,300. The Northern California EMS system uses EMT-I's, EMT-II's and paramedics to operate its life support systems in the field. In some remote areas, ambulances may take an hour to respond to injuries. However, the EMS agency estimates that 90 percent of the population is within 30 minutes of ambulance services. Although the EMS system includes 22 hospitals, more than half of these hospitals are licensed for standby emergency care only. The Northern California EMS agency has initiated a study to evaluate the effectiveness of its trial trauma care system. By May 1986, the agency will determine whether the trauma care system will be rejected, modified, or adopted.

The North Coast EMS System

The North Coast EMS system comprises four counties that encompass 9,365 square miles and support an estimated population of 229,835. The North Coast EMS system uses EMT-I's and EMT-II's for its prehospital services. Its EMS system consists of 13 small hospitals; 8 of these are licensed only for standby emergency care, and 5 are licensed as basic hospitals. The region's rugged terrain, its occasionally adverse weather conditions, and the long distances between population centers often make it difficult to transport victims to hospitals quickly and to establish or maintain communication between the hospitals and ambulance workers. It sometimes takes an ambulance over an hour to respond to an emergency call. The EMS agency does not plan to implement a trauma care system at this time because of the limited hospital facilities and the amount of time it takes to transport patients to the facilities.

The Sierra-Sacramento Valley EMS System

The Sierra-Sacramento Valley EMS system serves seven counties that encompass 6,744 square miles and support a population of approximately 1.2 million. Approximately 800,000 of the residents served by this system live in Sacramento County. This EMS system uses EMT-I's and EMT-II's for prehospital services. Of the 21 hospitals in this system, 2 are licensed for standby emergency care, and 19 are basic hospitals. One of the hospitals is designated as a regional

trauma care facility. Data from the region's 1983 records indicate that response time for emergencies was 10 minutes or less in 84 percent of the cases; in only 26 of 8,062 cases was the response time over 60 minutes.

II

THE EFFECTIVENESS OF SOME EMERGENCY MEDICAL SERVICES SYSTEMS HAS NOT BEEN ASSESSED

The authority and the local EMS agencies have not always been able to evaluate the effectiveness of emergency medical services in reducing incidents of death and disability because their data management systems are incomplete and because data from the hospitals are often difficult to obtain. The Department of Health Services, which also assesses hospitals' emergency services, conducts its survey only once in approximately every three years and does not always receive reports of unusual occurrences from hospitals. Agencies that have assessed their EMS systems have used the results to improve their services to the community.

Sections 1797.102 and 1797.121 of the Health and Safety Code require the authority to assess the effectiveness of each EMS system and report its findings to the Legislature annually. In its 1985 report to the Legislature, the authority stated that until its data management system is fully operational, it cannot determine if emergency medical services are effective in reducing incidents of death and disability. The authority is currently identifying the information it will need from the local EMS agencies to assess EMS systems, and it is developing a statewide data acquisition system.

The six local EMS agencies we visited assessed the effectiveness of their EMS systems to varying degrees. Each agency collected some prehospital data, usually from ambulance reports. The local agencies usually analyzed the prehospital data to ensure that ambulance personnel were complying with proper medical procedures and to identify problems in the system. For example, the Northern California EMS agency reported using its prehospital data to assist it in determining where to place ambulances and radio equipment.

Most of the EMS agencies we reviewed were collecting limited data, if any, from hospitals. Some agencies have contracts with hospitals stipulating that the hospitals will provide the agencies with data they need to assess their EMS systems. For example, the director of the Alameda County EMS agency stated that it collects data from the 4 hospitals it contracts with to assess the adequacy of their services but it does not collect data from the other 11 basic hospitals in its system. Documents from the Contra Costa, Los Angeles, and Marin EMS agencies also indicated that, unless the EMS agencies have contracts with hospitals requiring the hospitals to submit assessment data, the agencies have no authority to obtain information that could be used to assess the effectiveness of hospital services or the effect of EMS services on patients.

The Los Angeles County and Marin County EMS agencies reported that some hospitals are reluctant to provide assessment information to the EMS agencies for several reasons. The Marin County EMS agency

reported that hospital administrators in that county are reluctant to provide the agency with data because they are concerned with protecting patient confidentiality. According to a report issued by the Los Angeles County EMS agency, hospitals incur increased costs in compiling data for the EMS agencies and, therefore, are reluctant to provide information without reimbursement from the agencies. The Los Angeles County EMS agency also reported that hospitals may resist providing data to the agencies because the agencies could then evaluate the hospitals' performance.

Local EMS agencies are also experiencing other problems in analyzing the effectiveness of their systems. For example, in the Northern California EMS system, 87 percent of the ambulance reports were not annotated by hospital staff to indicate whether the prehospital services saved the patient, maintained the patient's condition, or improved the patient's condition. In addition, the Sierra-Sacramento Valley EMS agency had to curtail its analysis of the effectiveness of its trauma care system because it lacked personnel for data management and assessment functions. The Contra Costa County EMS agency was also limiting its analysis of hospital and prehospital services because the agency's medical director spent only one-fourth of his time on EMS activities. This agency collects information from the ambulance reports but does not analyze it because the agency has no one to enter the data into the computer.

Although no routine assessments have been made of EMS systems to determine their effectiveness in reducing incidents of death and disability, some studies of trauma care services have been conducted. The methods used in these studies were complex and time consuming, and the outcomes were sometimes controversial. However, the studies have been useful in identifying preventable deaths and weaknesses in the EMS systems. For example, in 1979, the Orange County Medical Association and the Orange County EMS agency studied deaths of patients requiring emergency medical services. This study suggested that one-third of the deaths were potentially preventable, and further study confirmed weaknesses in the system. The weaknesses included delays in transporting patients to hospitals in the EMS system and the unavailability of neurosurgeons and other specialists in the hospitals. These studies and the weaknesses they identified provided Orange County the basis for developing specific criteria for the county's trauma care system.

In a 1980 study of deaths of trauma patients in Sacramento County, the Sacramento-El Dorado County Medical Society concluded that 16 percent of the deaths were preventable. This study was a factor in the Sacramento County Board of Supervisors' decision to implement a trauma care system in Sacramento. In addition, the North Coast EMS agency completed a study of trauma deaths in rural areas that suggested that, from 1980 through 1982, 10 percent of the patients who arrived alive at the hospitals died unnecessarily. The report also stated that there were 24 prehospital deaths that were potentially preventable. A

study by the North Coast EMS agency also identified weaknesses such as delays in transporting victims and in the training of hospital emergency room staff.

The Department of Health Services' Licensing and Certification Division (division) is required to inspect hospitals. Section 1279 of the Health and Safety Code requires the division to visit hospitals as often as necessary and at least once every three years to ensure that they are providing quality care. The division is now routinely visiting hospitals every three years in conjunction with federal accreditation reviews. The three-year surveys are made under contract with the federal Joint Commission on Accreditation of Hospitals and the California Medical Association. The surveys are scheduled and conducted according to the number of beds in the hospital: the survey team spends one day in a hospital with fewer than 100 licensed beds, two days in a hospital with between 100 and 200 beds, and three days in a hospital with more than 200 beds. Because of the limited amount of time the division spends reviewing all hospital functions, its reviews of emergency room services are also limited. For example, the physician team member from the Joint Commission on Accreditation of Hospitals is responsible for reviewing emergency medical services and 11 other services within the hospitals, such as anesthesia, infection control, and medical records.

The division may also visit hospitals to ensure compliance with or to prevent a violation of the State's hospital regulations.

One source of information that the division uses to determine whether hospitals have complied with the regulations is the unusual occurrence report that Title 22, Section 70737, of the California Administrative Code requires hospitals to submit. According to this section, hospitals must report to the division and to a county health officer any unusual occurrence that threatens the welfare, safety, or health of patients. In our review of the files in five of the division's district offices, we found little or no evidence that hospitals are submitting reports of unusual incident involving their emergency services. The two hospital administrators we interviewed stated that, because the definition of an unusual occurrence that appears in the California Administrative Code is vague and confusing, they are not sure when a report is required. Staffs at both hospitals have attempted to obtain clarification from the division but are still not satisfied with the division's definition.

III

SOME HOSPITALS IN ALAMEDA AND CONTRA COSTA COUNTIES HAVE VIOLATED LICENSING REQUIREMENTS FOR BASIC EMERGENCY MEDICAL SERVICES HOSPITALS

The hospital files maintained by the Berkeley district office of the Department of Health Services' Licensing and Certification Division (division) show that at least 20 potentially life-threatening incidents occurred between January 1984 and August 1985 in Alameda and Contra Costa counties when surgical treatment of some trauma patients was delayed. Title 22, Section 70411, of the California Administrative Code requires hospitals licensed for basic emergency medical services to have a physician on duty at all times to provide prompt care for any patient with urgent medical problems. Prompt care includes surgical services for life-threatening situations. The district office investigated these incidents and issued statements noting 13 deficiencies to four of the hospitals. The division initiated these investigations because of complaints against hospitals in the two counties. None of the investigations was initiated as a result of local EMS assessments or routine assessments by the division.

Contra Costa County Hospital in Martinez, a basic hospital, admitted patients who needed emergency neurological medical services, but had to transfer the patients to other hospitals because neurosurgeons were not available. In one case, a 30-year-old male with a gunshot wound in his head was initially admitted to Brookside

Hospital on New Year's Eve, 1984. Because Brookside Hospital in San Pablo did not have a neurosurgeon available, the patient was transferred to Contra Costa County Hospital. However, Contra Costa County Hospital was also unable to provide a neurosurgeon, and approximately two hours after being admitted to Contra Costa County Hospital, the patient was transferred to a third hospital. On that same evening, Contra Costa County Hospital admitted a 24-year-old who needed neurological services because of a head injury. After keeping the patient under observation for 19 hours, the hospital staff decided that the patient required a neurosurgeon. Since a neurosurgeon was not available at Contra County Costa Hospital, the patient was transferred to another hospital.

As a result of these two incidents, Contra Costa County Hospital was investigated by the division, which issued a statement of deficiencies. The deficiencies included, among other things, not having surgical services immediately available for life-threatening situations and not reporting life-threatening occurrences.

The division also investigated other incidents that occurred in 1984 when emergency room back-up physicians were not available at Providence Hospital in Oakland. For example, the division investigated one complaint against the hospital, which is licensed for basic emergency care, and found that, in September 1984, the hospital had to transfer eight patients who required neurological services that the hospital could not provide. The division noted in its report on the

investigation that, as of February 20, 1985, Providence Hospital had contracted for two on-call neurosurgeons from San Francisco. The division did not issue a statement of deficiencies to Providence Hospital after its investigation.

In another incident, a news reporter called the division's district office in Berkeley on February 1, 1985, to report that a patient with a stab wound in his head was unnecessarily detained at Brookside Hospital in San Pablo. As a result of the reporter's inquiry and subsequent publicity, the Berkeley district office investigated the incident and found that the patient arrived at Brookside Hospital at 5:11 p.m. on January 28, 1985. The emergency room staff called three neurosurgeons; each refused to accept the case. After failing to obtain a neurosurgeon with staff privileges at Brookside Hospital, the Brookside Hospital doctors decided to transfer the patient to another hospital. They contacted Contra Costa County Hospital in Martinez, Herrick Hospital in Berkeley, and Highland Hospital in Oakland. All three hospitals refused to accept the transfer. San Francisco General Hospital agreed to accept the patient, and he was transferred to that hospital at approximately 8:00 p.m. The patient underwent surgery but died two days later.

During the investigation of this incident, the district office found that Brookside Hospital had not been able to provide adequate emergency medical care in other instances and issued a statement of five deficiencies to the hospital for violating Title 22 of the

California Administrative Code. The deficiencies included not having surgical services immediately available for life-threatening situations and not reporting to the division any unusual life-threatening occurrences. The other three deficiencies were related to a failure to conduct periodic evaluations and quality control procedures.

In April 1985, Brookside Hospital requested that its license be downgraded, effective September 1, 1985, from basic emergency medical service to standby emergency medical service because of its problems in providing emergency room services. In August 1985, the division again issued a statement of deficiencies to Brookside Hospital because of its inability to provide emergency medical services. On September 1, 1985, the division granted Brookside Hospital's request to be downgraded to a standby hospital.

The division also requested that the Board of Medical Quality Assurance investigate the actions of the three neurosurgeons who would not accept the case at Brookside Hospital. The board determined that none of the three surgeons had violated the Medical Practices Act.

These incidents in Alameda and Contra Costa counties were noted and investigated by the division because of complaints and news publicity, not because of routine assessments by local EMS agencies, surveys conducted by the division, or unusual occurrence reports filed by hospitals. Problems similar to those in Alameda and Contra Costa counties may exist in other EMS systems and go undetected because

hospitals have had few independent assessments of their emergency medical services. As we noted earlier, most of the EMS agencies that we reviewed were not assessing the effectiveness of hospital emergency services or the effects of EMS systems on reducing incidents of death and disability. The files we reviewed in the district offices of the division contained very few complaints about services in hospital emergency rooms and virtually no reports of life-threatening occurrences from hospitals. For example, the North Coast EMS agency studied patients in its trauma care system and identified preventable deaths in hospital emergency rooms. The study also identified poorly equipped hospitals and inadequately trained emergency room physicians. Despite these findings, there were no reports of unusual occurrences at the hospitals in this system on file at the division's district office.

IV

CONCLUSION AND RECOMMENDATIONS

Local agencies in cooperation with public service organizations, have implemented local emergency medical services (EMS) systems. These EMS systems vary in the services they provide and the degree to which they can respond to the need for emergency medical services, transport victims, relay information, and assess the EMS-related capabilities of their prehospital and hospital services.

The Emergency Medical Services Authority is responsible for reviewing local emergency medical services systems and for establishing statewide standards for training and certifying prehospital personnel classified as paramedics and emergency medical technicians. The authority is also responsible for developing regulations and guidelines for local EMS agencies and regulations for trauma care systems. The authority has partially fulfilled these responsibilities; as it completes these tasks, its role will be that of reviewing local EMS agencies for compliance with the regulations. However, the authority has no formal authority to enforce compliance with the regulations.

The effectiveness of some emergency medical services has not been studied because the agencies are limited in their ability to collect data on hospital services and on the effect of EMS systems on reducing incidents of death and disability. Most local EMS agencies

gather some data to analyze their prehospital services. However, these agencies collect from the hospitals limited, if any, data that could be used to assess the quality of care that patients receive.

Finally, life-threatening situations occurred in at least three hospitals in Alameda and Contra Costa counties because hospitals did not have surgical services immediately available. In some instances, patients were taken to three different hospitals before neurosurgical services could be provided. In several other instances, emergency room back-up physicians, such as neurosurgeons, were not available, and patients were detained or transferred to other hospitals.

RECOMMENDATIONS

To ensure the most effective and efficient emergency medical services and to comply with the Health and Safety Code requirements, the Emergency Medical Services Authority should complete its development of a statewide data management system that includes data compiled at both the state and local levels and develop a plan that will ensure that hospitals provide EMS agencies with assessment data. The authority should also publish and implement its trauma care regulations as soon as possible.

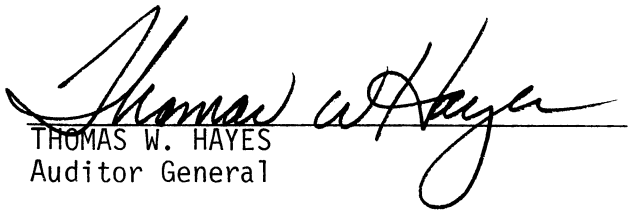
The Alameda County and Contra Costa County EMS agencies should proceed with the implementation of trauma care systems within their

counties to improve EMS systems and to reduce incidents of death and disability among seriously ill or injured patients.

Finally, the Department of Health Services' Licensing and Certification Division should clarify the definition of "unusual occurrences" as it appears in Section 70737(a) of the California Administrative Code. This section requires hospitals to report incidents that threaten the welfare, safety, or health of patients. The division should also ensure that hospitals comply with this requirement.

We conducted this review under the authority vested in the Auditor General by Section 10500 et seq. of the California Government Code and according to generally accepted governmental auditing standards. We limited our review to those areas specified in the audit scope section of this report.

Respectfully submitted,

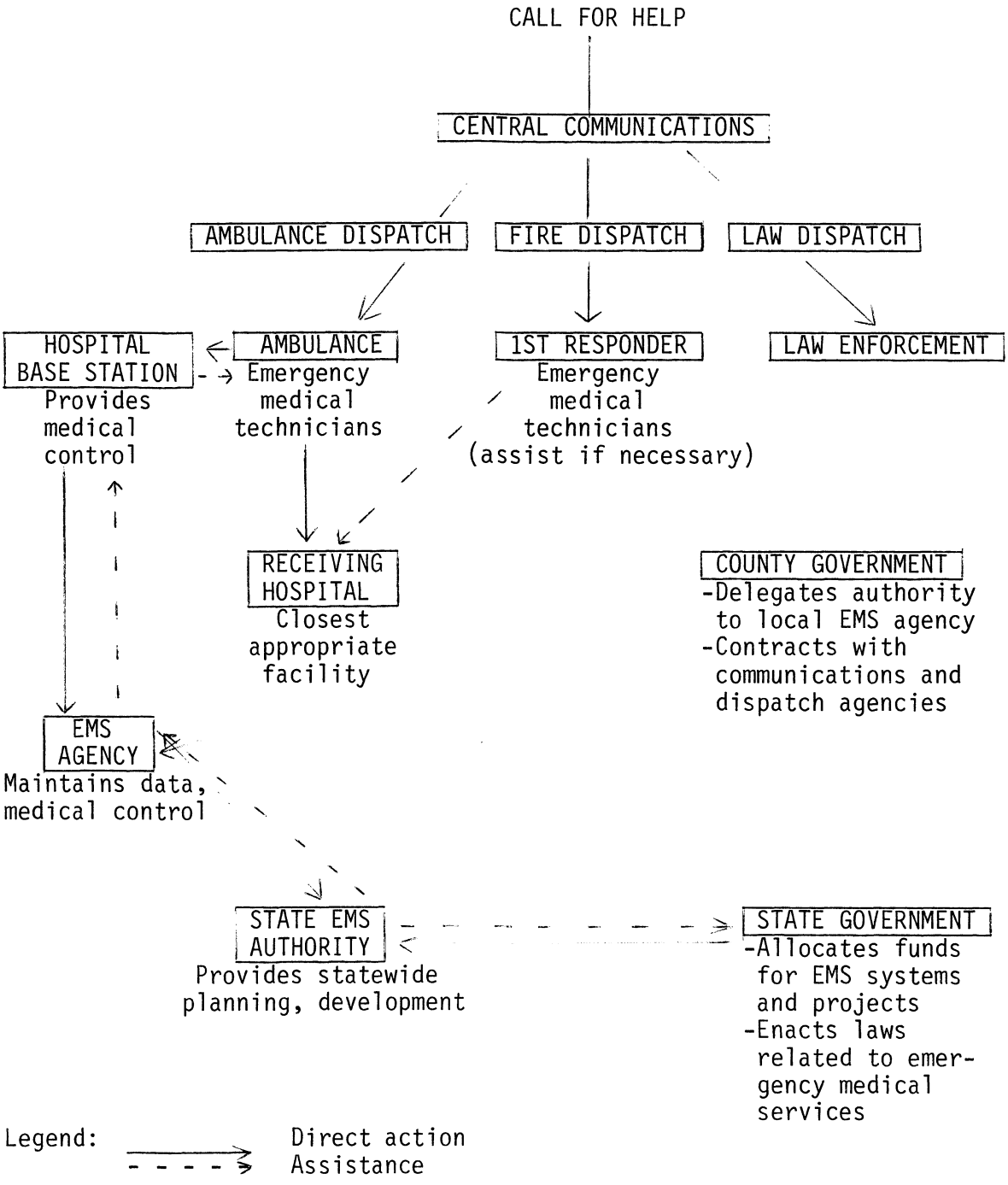


THOMAS W. HAYES
Auditor General

Date: March 31, 1986

Staff: Eugene T. Potter, Audit Manager
Murray Edwards

A TYPICAL EMERGENCY MEDICAL SERVICES SYSTEM



Source: Sierra-Sacramento Valley Emergency Medical Services Agency's 1985 Annual EMS Plan.

SUMMARY OF ACTIVITIES
RELATED TO EMERGENCY MEDICAL SERVICES
OF 16 STATE ENTITIES

	Activities								
	Manpower and Training	Communi-cations	Response and Transpor-tation	Assessment	Organization and Management	Data Collection and Evaluation	Public Information and Education	Disaster Medical Response	Support and Equipment
Office of Emergency Services		X						X	
State Fire Marshal	X		X						
California Highway Patrol	X	X	X			X		X	X
Department of Motor Vehicles	X		X						
Office of Statewide Health Planning and Development	X			X	X	X			
Office of Traffic Safety	X	X	X						
Board of Medical Quality Assurance	X					X			
Board of Registered Nursing	X								
Department of Education	X						X	X	
California National Guard	X	X	X					X	
California Conference of Local Health Officers	X				X			X	
Department of Health Services	X			X		X		X	X
General Services Communication Division		X						X	
Department of Forestry	X								
Emergency Medical Services Authority	X			X	X	X		X	
Chancellor's Office, California Community Colleges	X						X		

Source: Emergency Medical Services Authority's 1985 Report to the Legislature entitled "Emergency Medical Services Systems Development in California."

STATE OF CALIFORNIA

GEORGE DEUKMEJIAN, *Governor*

EMERGENCY MEDICAL SERVICES AUTHORITY
1600 9TH STREET
ROOM 400
SACRAMENTO, CA 95814

March 19, 1986

Mr. Thomas W. Hayes
Auditor General
State of California
PHAYES of the Auditor General
660 J Street, Suite 300
Sacramento, CA 95814

Dear Mr. Hayes:

On March 18, 1986 staff members from the Emergency Medical Services Authority and the Department of Health Services Licensing and Certification Division met with Murray Edwards and Gene Potter of your office to discuss the draft report which reviewed local emergency medical services systems.

Both Departments concurred with your findings and recommendations.

The EMS Authority suggested some minor wording changes to clarify the relationship between State and Local EMS agencies which were agreed to by your staff.

It was further stated that each Department was aware of the problems sited in your report and were working towards their resolution.

Sincerely,

George V. Moorhead
Interim Director

cc: Members of the Legislature
Office of the Governor
Office of the Lieutenant Governor
State Controller
Legislative Analyst
Assembly Office of Research
Senate Office of Research
Assembly Majority/Minority Consultants
Senate Majority/Minority Consultants
Capitol Press Corps