THE SYSTEM THAT SAVES LIVES

OC EMS EMERGENCY MEDICAL SERVICE

EMERGENCY MEDICAL SERVICES PLAN

FOR ORANGE COUNTY

DECEMBER 1978

COUNTY OF ORANGE
HUMAN SERVICES AGENCY

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PUBLIC HEALTH AND MEDICAL SERVICES

December 20, 1978

Honorable Board of Supervisors
County of Orange
Santa Ana, California 92701

Subject: EMERGENCY MEDICAL SERVICES PLAN FOR ORANGE COUNTY

Gentlemen:

On behalf of the Orange County Emergency Medical Care Committee, I am pleased to present to you the Emergency Medical Services Plan for Orange County.

The plan, as proposed, is in response to your Resolution #68-676 (adopted June, 1968) in which your Board charged the Committee with the responsibility of planning and implementing an emergency medical services program for the County.

Over 100 voluntary members served on committees and task forces to actively engage in the planning process. Much time and effort have been expended in the development of this plan.

It is the desire of this committee that the adoption of this Plan will serve as a catalyst in promoting a systematic approach to EMS implementation in Orange County.

It should be recognized that this Plan is but the first step; the committee looks forward to a continued working relationship with your Board in implementing the recommendations as outlined in this Plan in an effort to provide the best emergency medical care system to the residents of Orange County. On behalf of the Emergency Medical Care Committee, I respectfully urge your approval of this plan.

Respectfully submitted:

Morton Nelson, M.D., MPH, Health Officer
Chairman, Orange County Emergency Medical Care Committee

MW/RH/sg

COUNTY OF ORANGE

EMERGENCY MEDICAL SERVICES

PLAN

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Emergency Medical Services
Michael Williams, Director

Supported by Grant from
Department of Health, Education and Welfare
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EMERGENCY MEDICAL SERVICES PLAN

FOR ORANGE COUNTY

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EMERGENCY MEDICAL SERVICES

DEFINITIONS

Advance Life Support (ALS) Services

Advanced medical care services which may be planned for an area-wide EMS System. In addition to all basic life support (BLS) services, ALS services include sophisticated transportation, with bio-medical communications, accompanied by EMT-Paramedics.

Basic Life Support (BLS) Services

Minimum acceptable level of medical services available in an area-wide EMS System including universal access and central dispatch of certified National standard level ambulances; with appropriate medical and communication equipment, operated by EMT-A personnel.

Critical Patients Categories

Patients requiring a high level of care who comprise approximately 5%* of all emergency trauma, cardiac, burns, high risk infant, alcoholism, drug overdoses, poisoning and acute psychiatric problems and must be treated at specialized facilities most appropriate for such patient's specific critical needs. Mortality rates of these patients are high. Typically they require long-term convalescence.

Emergency Medical Care Committee (EMCC)

A committee composed of members representing a variety of provider, consumer and governmental organizations responsible for planning and organizing emergency medical care within a defined geographical area, and acting in an advisory capacity to the appropriate governmental entity on all aspects of emergency medical care.

* National average based on D.H.E.W.

Emergency Patient

A person with a medical problem which needs immediate medical intervention to be provided at the nearest appropriate emergency care facility.

Emergency Medical Services Systems (EMSS)

A system administered by a public entity having the resources and authority to provide effective administration of an arrangement of personnel, facilities, and equipment which assures an effective and coordinated delivery of emergency health services.

EMSS Act - PL 93-154-573 (1976 Amendments)

A Federal mandate which promotes the development of a comprehensive regional Emergency Medical Services System, and authorizes the Department of Health, Education and Welfare to provide grants for this purpose.

First Responders

EMS System personnel who have the responsibility to initially respond to accidents (California Highway Patrol, police, firemen, lifeguards, forest rangers, and other public safety personnel). (In some areas private ambulance personnel are included in this category). California law requires such persons to complete a first aid course and to be trained in cardiopulmonary resuscitation (CPR).

EMT-A- (Ambulance)

Persons trained and certified in basic life support (BLS) in accordance with standards developed by the Department of Transportation.

EMT-P- (Paramedic)

Persons trained for Advanced Life Support (ALS) to include sophisticated trauma, cardiac care, and other critical care elements for interventive treatment, shock therapy, drug administration and cardiac rhythm control.

Horizontal Categorization

A mechanism to organize hospital facilities to meet the needs of the non-emergency and non-critical emergency patients (95%)*.

Mobile Intensive Care Nurse (MIC Nurse)

A registered nurse who has been certified by a County Health Officer as qualified in the provision of emergency cardiac care and non-cardiac care and in the issuance of emergency instructions to EMT-Paramedics.

Mobile Intensive Care Unit (MICU)

Emergency vehicles which are specially equipped and staffed by EMT-Paramedics or MIC nurses to provide intensive care or cardiac care (ALS) to the sick or injured at the scene of a medical emergency or during transport to a general acute care hospital.

Non-emergency Patient

A group of patients (80%)* which present non-life threatening medical problems and may seek treatment at home, at a clinic, hospital outpatient department or emergency room.

Office of Emergency Medical Services (OEMS)

An agency within a particular defined geographical region which has been designated by the appropriate governmental authority to plan, organize, direct, coordinate and act as a lead agency for a comprehensive regional EMS System.

Vertical Categorization

A mechanism to organize critical care facilities according to their capabilities to meet the needs of specific critical patient groups (5%)*. These groups include: burn (40% or greater), trauma (i.e., multi-system injury), high risk infant (premature with respiratory difficulty), poison, etc.

*National averages based on DHEW.

Standards are developed to meet the needs of specific critical patients. Specific vertical (regionalized) facilities will have the collective capability to care for that critical patient group.

Health Systems Agency (HSA)

Federally designated agency for planning, review, implementation and data gathering for health care delivery services and facilities. In Orange County, the agency is the Orange County Health Planning Council.

OTS/DOT

State of California Office of Traffic Safety, which is a division of the State Department of Transportation.

OES

Office of Emergency Services. The County Office designated by the Board of Supervisors as the County Disaster Services Office.

9-1-1

A central access number for all types of emergency calls. The State has mandated implementation of the 9-1-1 system by 1985.

CCU

Specialized medical care units or centers available for diagnosis and care of specific patient problems, including: trauma intensive care units (multiple injuries), burn centers, poison control centers, spinal cord centers, coronary care units, high-risk infant centers (neonatal intensive care centers), drug over-dose centers, psychiatric emergency centers, and others specific to the region.

Base Station Hospitals (BSH)

A hospital, contracted with and certified by the County Health Officer to provide medical direction to paramedics, via radio or phone mode. All Base Station Hospitals qualify as Paramedic Receiving Centers. (See below).

Paramedic Receiving Hospital

A hospital contracted with and certified by the County Health Officer to provide a high level of care to all patients serviced by paramedics and transported to its emergency room. (Paramedics may transport patients only to Paramedic Receiving Centers).

Medical Control

The provision, in an EMS System, for responsible physician guidance of all medical decisions.

Categorization

The classification of hospitals based on their ability to provide certain, specific, medical care. See vertical categorization.

Public Involvement (Consumer Participation)

One of the elements of an EMS System. The public (consumer) must be made aware of the existence of the System, what it can provide him and the methods of accessing it.

Transfer Agreements

Written agreements between hospitals. These agreements provide for the transfer of patients to hospitals having certain, specific medical capabilities.

Triage

A system by which patients are sorted and transferred to various critical care institutions based on their medical needs.

CPR

Cardiopulmonary resuscitation. The method used to sustain life in a victim whose heart has stopped. See Basic Life Support.

OVERVIEW

Introduction

The Orange County Board of Supervisors, their constituents, physicians and other health care providers have a long history of dedication to the improvement of community emergency medical services.

In 1968* the Board of Supervisors appointed a committee (EMCC) to advise them on actions needed to protect the public welfare during a medical emergency. Since then, this committee has consistently made recommendations to the Board which have resulted in:

1) 1973 - Adoption and implementation of a paramedic program which is one of the most sophisticated and highest quality programs in the United States.
2) An emergency medical communications system that is now being used as a National model.
3) A paramedic training program of the highest quality assuring competence of paramedics to the physicians and public.
4) Categorization of hospital facilities to care for general emergency patients by adoption of Paramedic Receiving Center criteria.
5) Medical control by designating six medical control facilities (Base Station Hospitals).

Experience in the Viet Nam war and in other emergency medical service programs across the country however, showed that significantly greater improvements in preventing death and disability from medical emergencies could be accomplished by establishing a system that:

1) Provided for field triage of the critically ill or injured patients.

*See Appendix I - expanded in 1976 from 8 members to 23 which include health providers, community organization representatives, consumers, etc.

2) Field resuscitation of these specific critical patient groups and

3) Rapid evacuation to definitive specialized care centers.

This experience resulted in the passage by Congress in 1973 of the EMSS Act, establishing a National strategy to develop regional EMS Systems across the country that would impact unnecessary death and disability.

In 1976, in recognition of the need to establish a comprehensive EMS System in Orange County, the Board of Supervisors designated and funded an Office of Emergency Medical Services to plan, organize and direct the development of a comprehensive regional Emergency Medical Services System. The planning process has included the participation and input of all EMS provider agencies, the medical community, the local Health Systems Agency, educational institutions and the public, thus insuring that this Plan will meet the needs of all emergency patients; critical, emergent and non-emergent, from initial entry into the system through definitive critical care and rehabilitation.

In order to develop a comprehensive, regional EMS System, Orange County applied for and received an HEW/EMS 1202 Planning Grant in July 1977. To assure proper medical input the OEMS hired a medical director and eight physician experts in the various critical care areas. (See Table 1)

During the past planning year with the assistance of local and HEW/EMS planning funds, the following were accomplished:

1. Resource inventories have been completed in each manpower category.
2. Needs statements have been developed for each manpower category.

TABLE 1

CRITICAL CARE PATIENT

PHYSICIAN ADVISORY PANEL

	DIRECTOR
BURNS:	ROBERT BARTLETT, M.D. Burn Unit University of California, Irvine, Medical Center
TRAUMA:	JOHN WEST, M.D. American College of Surgeons
CARDIAC:	JAMES M. PAGANO, M.D. American College of Cardiology
POISON:	DAVIS SCHAPIRO, PHARM.D. Director, Poison Control Center University of California, Irvine, Medical Center
BEHAVIORAL:	ROBERT DRURY, M.D. Orange County Mental Health MARTIN BRENNER, M.D. Psychiatry Association Orange County
HIGH RISK INFANT:	RALPH RUCKER, M.D. Director, Neonatal ICU Children's Hospital
SPINAL CORD:	JOHN C. KENNADY, M.D. MARC A. MORIN, M.D. Society of Neurosurgeons
GENERAL EMERGENCY:	RICHARD CALES, M.D. Emergency Room Physician

3. Training levels have been assigned to each category of manpower.

4. Thirty-two EMT-Ps have been trained, ninety-eight EMT-Ps were recertified.

5. Planning was completed for training programs for:

   a. Emergency Department Nurses

   b. Emergency Department Physicians

   c. Critical Care Nurses

   d. Mobile Intensive Care Nurses

   e. Mobile Intensive Care Physicians

6. A Department of Transportation ambulance radio grant in the amount of $100,000. was applied for and received.

7. A County Ambulance Ordinance was developed and adopted by the Board of Supervisors.

8. An E.M.S. Medical Director was hired and eight physician critical care consultants are now under contract.

9. A standardized hospital transfer agreement was developed.

10. Critical Care Plans were developed for patients in the following areas:

    a. Trauma (draft)

    b. Burn (approved)

    c. High Risk Infants (approved)

    d. Poison (draft)

    e. Spinal Cord (draft)

    f. Cardiac (approved)

11. Transfer agreements and treatment protocols have been developed in the aboye mentioned six critical patient categories.

12. A patient tracer form, capable of tracing patient care from onset of clinical condition through discharge was developed.
13. A Public Information/Education Subcommittee was formed.
14. Five CETA-funded personnel were hired and have trained over 5,000 individuals in CPR and EMS System access.
15. A revised Health Annex to the Emergency (Disaster) Plan was developed and adopted.
16. Mutual aid agreements were developed with Los Angeles, San Bernardino and Riverside Counties.

BROAD GOAL

The broad goal of this plan is to decrease death and disability from emergency conditions by establishing a totally coordinated system of care for emergency patients, that is accessible and available to an educated public throughout Orange County.

Overview of Components

An EMS System, as any system, consists of numerous components to operate effectively, these components must be integrated and work in a coordinated fashion. There are 15 components of an EMS System. They are:

1. Manpower
2. Training
3. Communications
4. Transportation
5. Facilities
6. Critical Care Units
7. Public Safety Agencies
8. Mutual Aid
9. Consumer Participation
10. Accessibility to Care
11. Transfer of Patients
12. Compatible Record Keeping
13. Consumer Information/Education
14. Evaluation
15. Disaster Linkage

To save duplication in some areas, we have combined some of these components. The following is a brief breakdown of the components:

1. Manpower and Training

One of the most important components of an EMS System is its manpower and training capabilities. In an effort to determine the current status and training levels of Orange County's emergency medical manpower groups the OEMS surveyed these groups. (See Appendix II)

Based on the present training levels of these personnel and the availability of training programs, the EMS Office in their application for federal funds, requested monies to conduct several training programs. These training programs will be specifically in the areas of; first responder training, inter-disciplinary training for E.D. nurses, paramedics and E.D. physicians. The OEMS proposes to hire a manpower training coordinator

to coordinate existing programs and to aid in the establishment of new programs. In addition, as each of the critical care plans are completed and approved, a symposium will be offered to help educate those EMS providers in the changes that will occur as a result of this specific plan.

2. Communications

There are three components in the EMS System that must be coordinated: the Basic Life Support System (BLS), the Advanced Life Support System (ALS), and the dispatch system.

At present OEMS is in the process of integrating the BLS system with the existing ALS system. Financial help has been received from a DOT/OTS Grant to fund the purchase and installation of radios in all ambulances operated in the County. These radios will provide the needed link between the BLS and the ALS system. The current ALS communicating system is an excellent system and has no need for improvement. The third component is a coordinated dispatch system. The ultimate goal will be a 9-1-1 system for the entire County. The 9-1-1 system in the area has had funding difficulties as well as equipment and mechanical problems. Some conflict appears to exist between the requirements of existing State legislation and the system to be utilized in Orange County. A system where the dispatcher originally receives the call, will not be available here until early 1985. Prior to this time, OEMS will encourage the Fire Chiefs to develop joint powers agreements for a coordinated area dispatch system. Currently, two such areas exist now: in the Huntington Beach, Fountain Valley, Seal Beach, Westminster fire areas and the Garden Grove and Orange system.

Medical Control for the ALS system is provided by the six Base Station Hospitals.

3. TRANSPORTATION

In Orange County, ambulances transport patients who have been treated by the paramedics, provide routine transportation and intra-facility transportation. The role of the ambulance has been recognized as an integral part of the EMS system. Likewise, the ambulance technician has been recognized as having a major place in the EMS manpower pool.

Recent State legislation and County ordinances have set high standards for both vehicles and personnel operating in the emergency transportation system.

The Orange County Board of Supervisors recently adopted an ordinance that will provide the means of assuring quality equipment and personnel to staff ambulances in the County. The Board has also directed the OEMS to supervise and oversee this ordinance, thus assuring integration with the other EMS System efforts.

The ordinance also provides a means of integrating this component of the system into the entire system, thus providing a coordinated system from first responder's arrival at the emergency scene to the patient's arrival at the appropriate receiving center.

4. Facilities and Critical Care Units

While providing a well working pre-hospital Advanced Life Support System to patients is important, it is also important that the hospital emergency rooms be able to carry on this high level of care. Since the inception of the paramedic system in Orange County, hospitals have been requested to meet high standards in order to carry on the care initiated by the paramedics. The designation of Paramedic Receiving Center has been adopted by the Emergency Medical Care Committee to identify those hospitals who meet the committee's criteria. Currently, 30 of the County's 39 hospitals have this designation. This designation carries, as a minimum, Title 22 requirements for a Basic Emergency Service; there are requirements above this which are specific to Orange County. In addition to emergency room requirements, there are requirements of the entire hospital as well. Other factors considered are laboratory and ICU/CCU capabilities. Recognizing that emergency medicine is a rapidly changing field, the EMCC has made provisions for these standards to be periodically updated and hospitals re-surveyed.

National physician experts have recognized that certain groups of patients (cardiac, burn, high risk infants, poison, trauma, spinal cord injuries, and behavioral emergencies) have unique problems and requirements for specialized equipment, personnel and training. In an effort to address itself to these problems, OEMS has hired recognized Orange County medical experts in these areas (See Table II). Each of these experts had been asked to develop a plan that specifically addresses the critical needs

TABLE II

CRITICAL CARE PATIENT

PHYSICIAN ADVISORY PANEL

	DIRECTOR
BURNS:	ROBERT BARTLETT, M.D. Burn Unit University of California, Irvine, Medical Center
TRAUMA:	JOHN WEST, M.D. American College of Cardiology
CARDIAC:	JAMES M. PAGANO, M.D. American College of Cardiology
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SPINAL CORD:	JOHN C. KENNADY, M.D. MARC A. MORIN, M.D. Society of Surgeons
GENERAL EMERGENCY:	RICHARD CALES, M.D. Emergency Room Physician

of these patients (See Appendix III). As these plans are developed, they are reviewed by the medical community, hospital administrators and others as necessary. After comment and approval by all concerned parties the EMCC will approve the plan and adopt an implementation schedule for the plan. Prior to implementation of these plans, an education program will need to be established to assure that all personnel are familiar with any changes the Plan presents.

With the implementation of the Critical Care Plans and the designation of Paramedic Receiving Centers, the facilities component will be completely integrated into the EMS System.

5. Public Information/Education

Public education in the areas of EMS resources, access, life support and preventive health care are of utmost importance for an effective EMS System. In the vast majority of cases, the effectiveness and lifesaving capacity of an EMS System depends on the knowledge and actions of citizens. No matter how well trained, equipped and staffed, an EMS System remains idle until activated by a citizen who either calls for emergency medical aid or presents himself/herself for treatment. Clearly, the citizen's knowledge of the resources available for EMSS, and how and when to access these resources is the starting point for operating the EMS System.

In addition, a citizen can help to reduce mortality and morbidity by providing basic life support until more highly trained help is available and by preventing illness through early detection of symptoms and understanding preventive health care.

In Seattle, Washington, where approximately 100,000 people are trained in CPR, they calculate that an additional 500 people per year survive complete heart stoppages (cardiac arrest) in the field.

6. Evaluation

In an effort to measure impact of a systems ability to save lives, a means to evaluate that system must be established. If the system fails to provide the emergency care intended, modifications must be made.

In order to assure that constant control of the system is maintained, an evaluation system needs to be developed during the beginning stages. This evaluation system will have the capability of tracing a patient through the entire system. That is, from the time of the medical emergency and response of the paramedic team to final discharge of the patient from the hospital. Through this type of evaluation system, all of the EMS system components may be analyzed to assure that efficient coordination of care is provided.

This evaluation system will also provide a means of assuring that the system advances in step with current medical practices, thus assuring that the patient always has the best care available.

7. Disaster/Mutual Aid

As in all other sections of this Country, Orange County is subject to disasters. In particular, Orange County is subject to earthquakes

which cannot be predicted with present technology. Therefore, we must be constantly prepared for a major disaster, such as an earthquake, an airplane accident, or other major catastrophy. Only through constant planning, practices and education based on other communities' experiences, can we be prepared for a large scale disaster.

The OEMS has developed a Health Annex to the County's disaster plan and will continue to work with the various disaster organizations at a State and County level. In Orange County, the Board of Supervisors has designated the Office of Emergency Disaster Services as the lead disaster planning agency. Through continued cooperation with this office, we will be assured that the medical component of a comprehensive disaster plan is adequate to provide care to victims of a disaster.

Southern California is unique in that there are large areas of contiguous population. That is, Orange County and Los Angeles County in particular, are not separated by any natural barrier. Because of this, there must be a plan for the two counties to interact or provide each other with back up services in the event of a disaster in one or the other counties.

The OEMS has developed mutual aid agreements with Los Angeles and San Bernardino Counties to assure that proper back-up help will be provided.

The OEMS will continue to work with the adjacent communities to assure that continued mutual aid agreements remain in effect.

SYSTEM NEEDS

Currently 30 of the 39 acute care hospitals in Orange County are certified as Paramedic Receiving Centers. There is a need to continue to work with those hospitals that do not qualify - either to help them upgrade their capabilities or remain current on changes in the system so that they are aware of the mechanisms of obtaining care for their patients.

Presently, State guidelines suggest that one "Basic Emergency Service" per service area population of 300,000 is sufficient. Using these guidelines, this would indicate a need for only 6 Receiving Centers in Orange County. Presently, 30 exist. At this time this criteria does not seem sufficient to meet Orange County needs. The Office of Emergency Medical Services intends to work with the local Health Planning Council to develop a number that is more appropriate for Orange County. Upon such determination, a petition will be made to the State for a revision of their criteria.

Although this plan is designed to establish a system of care for the emergent patient, it is recognized that a significant number, (approximately 80% by D.H.E.W. statistics) of patients are utilizing the emergency rooms for non-emergency services. There are numerous reasons for this misuse:

1. 24 hour a day access,
2. 100% insurance coverage,
3. No family physician,
4. Lack of information/education.

During the next five years, Orange County needs to complete the integration and coordination of the region's hospitals. When this is complete, a system of transfer agreements must be implemented to assure that patients are transferred to the appropriate critical care center.

The OEMS staff is currently working with a task force of local E.R. physicians, nurses, and hospital administrators to develop new Paramedic Receiving Center criteria. When these new criteria are adopted, the OEMS will develop survey teams to resurvey all of the region's hospitals. During the next five years, as needs in emergency Receiving Centers change, new criteria will be implemented.

One of the most important parts of an EMS System is medical control. The OEMS currently has under contract a part-time medical director and physician consultants in each of the critical care areas, including general emergencies. The OEMS will continue to contract with medical personnel for their direct input and will continue to work with the physicians in the community, seeking their input.

Special Needs

In addition to the above listed components, Orange County has special needs in other areas that must be considered. Among these are: care of the elderly; minority groups or non-English speaking residents; undocumented residents; and the care of rape victims.

Each of these groups presents specific problems to the system, i.e., language barriers, transportation problems and appropriate understanding of these individuals' problems.

The Office of Emergency Medical Services will work with the representative groups of those with special needs in an effort to incorporate their needs into future plans for the system.

OBSTACLES

This Plan is based on the premise that Orange County as a region will have adequate resources to complete the Plan as follows:

1. Funding
2. Community, political, and professional input
3. Community, political,and professional committment to program goals as a priority
4. Well organized and funded lead health agency

The lack of such resources will most certainly hinder development of the EMS System in Orange County during the next five years. However, with clear committment to the major goals these obstacles can and will be overcome to assure that Orange County residents have appropiate, high quality emergency medical care.

ORGANIZATION

ORGANIZATION

BROAD GOAL

The broad goal of this component is to assure that a lead agency exists to acquire appropriate governmental, medical, private and consumer input to plan, organize, coordinate and direct the Emergency Medical System in Orange County.

CURRENT STATUS

A. Board of Supervisors

The Board of Supervisors has taken the leadership role in developing emergency medical services within the region. During the past five years the Board has aggressively supported the development of advanced life support (paramedic) services. The Board additionally budgeted funds for EMS System development through the Office of Emergency Medical Services, Orange County Communications, and the Orange County Fire Department.

B. Office of Emergency Medical Services

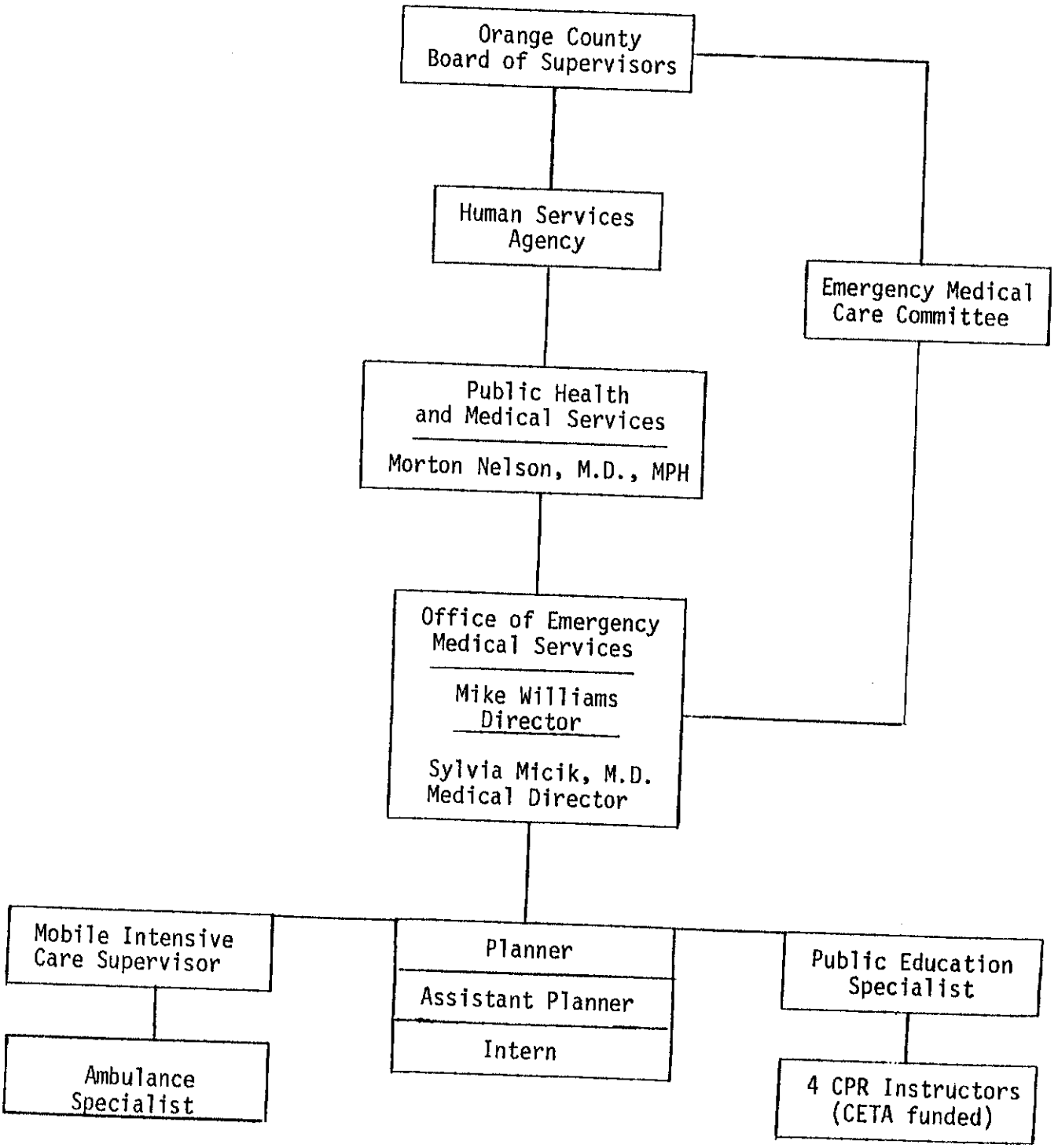
Emergency Medical Services system management has been a function of the Orange County Public Health and Medical Services for five years (see Table 3). During 1976, this management role was reaffirmed by the Board of Supervisors when the Office of Emergency Medical Services (OEMS) was established. EMS has now been accepted as an integral part of the County Health Program.

In July 1977, the OEMS was awarded a Department of Health, Education and Welfare - Emergency Medical Services Planning Grant under authority of the Emergency Medical Services System (EMSS) Act of 1973 (PL 93-154) and Amendments (PL 94-573), Section 1202, "Grants and Contracts for Feasibility Studies

TABLE 3

EMS PROGRAM

(EXISTING)



and Planning". It was this grant that supported the development of the EMS Plan. In April 1978, the Office of Emergency Medical Services took the next step in the federal EMS funding cycle and applied for an Implementation Grant under Section 1203 of the EMSS Act. In the following years Orange County will be eligible for grant funds as follows:

A.	Implementation	1203(2)	$500,000	(Approximately)
B.	Expansion	1204(1)	$600,000	(Approximately)
		1204(2)	$600,000	(Approximately)

The EMS management organization (OEMS) does not provide direct service in the operational emergency medical services system. Its role is to develop the system by working with provider and community groups to insure that emergency medical services are available and accessible to the total county (Table 4).

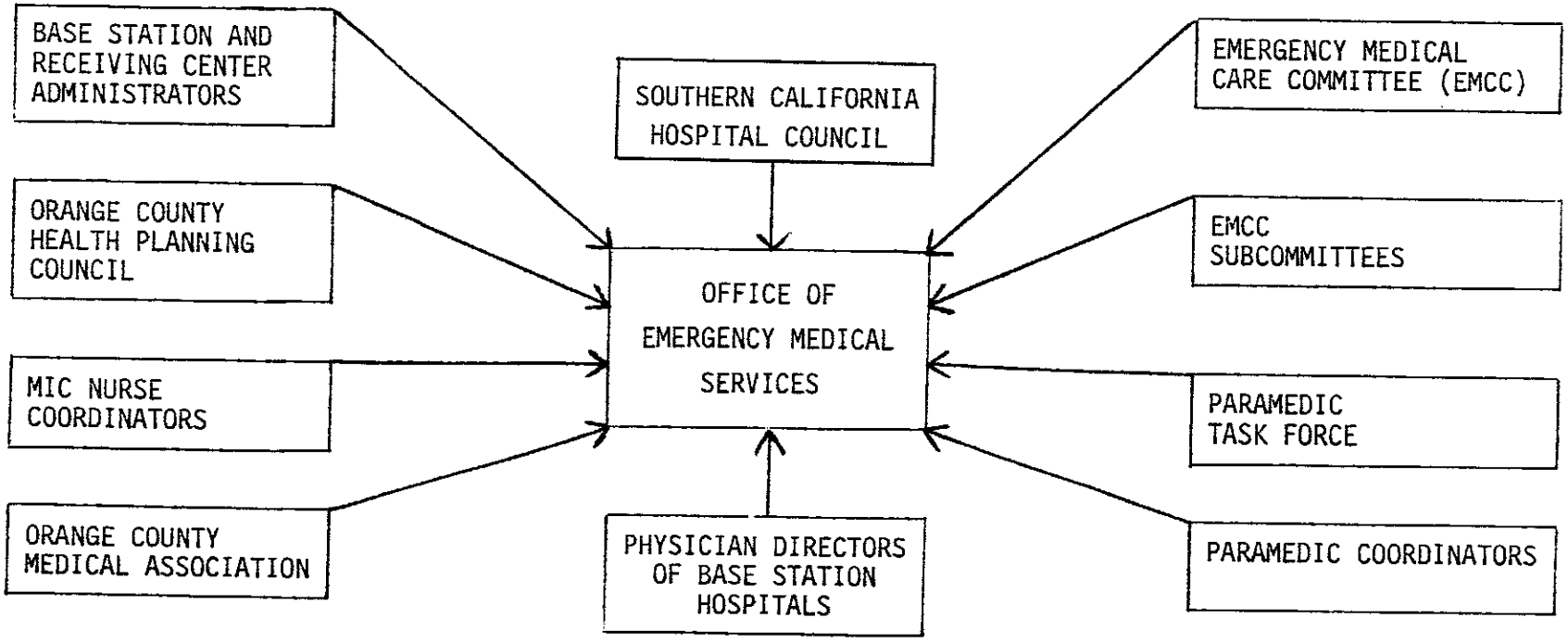
The major duties of the Office of Emergency Medical Services are:

1. Plan, develop and implement an emergency medical services system in the region.
2. Coordinate all aspects of emergency medical services with State and local governmental agencies, professional organizations and volunteer agencies involved in the delivery of emergency medical services.
3. Establish priorities for implementation of system components.
4. Provide technical assistance to community planners and providers of emergency medical services.
5. Develop standards and guidelines for quality assurances of emergency medical services.
6. Evaluate program achievements and impact on the system using process and outcome measures.

TABLE 4

EMS SOURCES

OF COMMITTEE INPUT



Management of the program will be based on the policy of the Board of Supervisors and guidelines which have been promulgated by DHEW/EMS, the State Office of EMS through the State EMS Plan and local mandates.

National and local EMS experience suggests the following staffing patterns for an EMS organization in a region of this size (see Table 5).

STAFFING

Medical Director (existing)

Medical direction for the EMS program is provided by the Health Officer and a program Medical Director. The program Medical Director needs to be a physician experienced in emergency medicine and administration. This physician will be responsible for working with the critical care physicians (see below) and assuring proper medical control to the entire system. The Medical Director will also provide day-to-day monitoring and recommend changes in medical aspects of the system. (See Appendix IV for C.V.)

Clinical Consultants (existing)

In order to assure proper medical guidance, the OEMS has contracted with local physician experts in the seven critical care areas. (See Table 6). These physicians have provided a great deal of assistance in the development of the various critical care plans. Working with the Medical Director, these physicians will be responsible for providing changes in the treatment protocols as changes occur in current practice.

Program Director (existing)

The OEMS must be under the direction of an experienced EMS Administrator. This individual should be experienced in Federal, State and local EMS legislation as well as administrative procedure. The Program Director will be

TABLE 5

EMS PROGRAM

(PROPOSED)

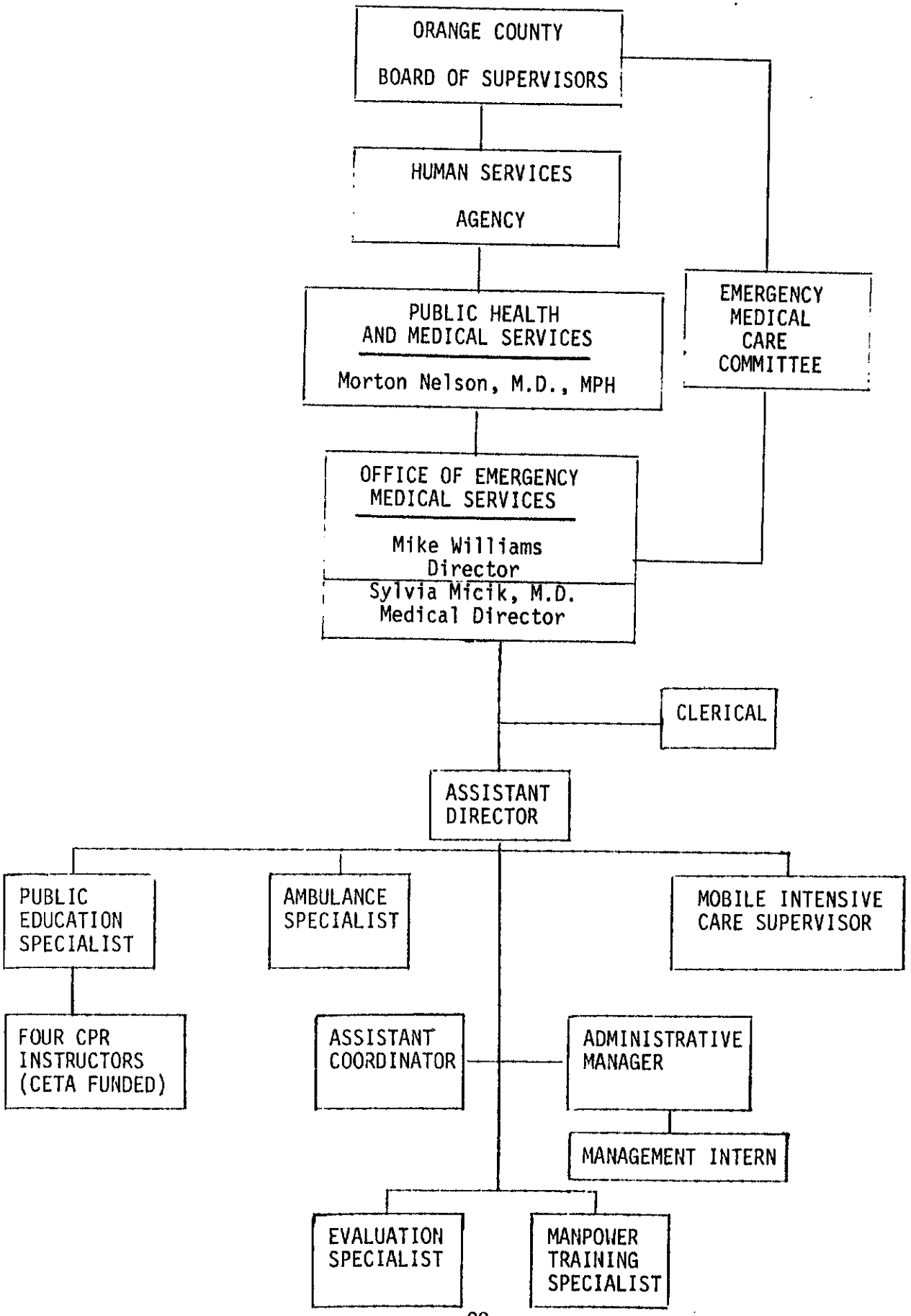


TABLE 6

CRITICAL CARE PATIENT

PHYSICIAN ADVISORY PANEL

DIRECTOR

BURNS:	ROBERT BARTLETT, M.D. Burn Unit University of California, Irvine, Medical Center
TRAUMA:	JOHN WEST, M.D. American College of Surgeons
CARDIAC:	JAMES M. PAGANO, M.D. American College of Cardiology
POISON:	DAVID SCHAPIRO, PHARM.D., Director, Poison Control Center University of California, Irvine, Medical Center
BEHAVIORAL:	ROBERT DRURY, M.D. Orange County Mental Health MARTIN BRENNER, M.D. Psychiatry Association Orange County
HIGH RISK INFANT:	RALPH RUCKER, M.D., Director, Neonatal ICU Children's Hospital
SPINAL CORD:	JOHN C. KENNADY, M.D. MARC A. MORIN, M.D. Society of Neurosurgeons
GENERAL EMERGENCY:	RICHARD CALES, M.D. Emergency Room Physician

responsible for the day-to-day management of the OEMS, fiscal management and act as a liaison to other community organizations involved in emergency medical activities. The Program Director will work with the Medical Director in the application of medical protocols. (See Appendix IV for C.V.)

Paramedic Program Specialist (existing)

This is a position for an individual experienced in paramedic procedures, both training programs and field treatment. This person will be responsible for monitoring the Paramedic Training Program and paramedic field performance. This individual will also be responsible for seeing that changes in paramedic procedure and protocols are carried out on a coordinated and integrated basis. (See Appendix IV for C.V.)

Public Information/Education Specialist (existing)

The duties of this position involve the development of public education systems and methods of mass public education. For an EMS System to be effective, the public must be aware of the methods of accessing it. This person is responsible for working with other agencies such as the American Heart Association and the American Red Cross in the development of public training programs in CPR and desseminating information on EMS system access. The duties of this position require a person who is familiar with methods of public education and public relations along with a knowledge of EMS Systems. (See Appendix IV for C.V.)

Implementation Coordinator (existing)

The duties of this position will include the coordination of all EMS activities. This will involve working with the Manpower Training Coordinator, the Evaluation Specialist, the Public Information/Education Specialist and the Program

Director. This individual must have a thorough working knowledge of the EMS System as well as administrative abilities. The Implementation Coordinator will also be responsible for determining other methods of funding as well as preparing grant applications on a timely basis. (See Appendix IV for C.V.)

Manpower Training Coordinator (proposed)

The duties of this position will include the coordination and supervision of the numerous proposed training programs and coordination with the training coordinators of the various provider agencies. It will be necessary for this individual to coordinate and work with the various EMS provider agencies to assure training programs are available to their personnel. (See Appendix V for Job Description).

Evaluation Specialist (proposed)

The duties of this position will include the development, implementation and coordination of a complete EMS System evaluation program. In this capacity, it will be necessary for this individual to coordinate with the various EMS providers in the development of the proper data collection forms. Comprehensive reports will be developed and used for system adjustment and reporting statistics. The Evaluation Specialist will have the assistance of other EMS program staff as needed for specific technical assistance. (See Appendix V for Job Description).

Administrative Services Assistant II (proposed)

The duties of this position will include gathering and analyzing information concerning grant work management problems, preparing reports showing time, space, personnel, equipment and material grant costs and recommended solutions.

Assist in the preparation and justification of the grant related contracts and in carrying out the budgetary monitoring and fiscal control programs related to these contracts. (See Appendix V for Job Description).

C. Emergency Medical Care Committee

The Emergency Medical Care Committee of Orange County is composed of representatives of a wide variety of provider organizations, comsumers and government officials who will work in advising the Office of Emergency Medical Services in the implementation of the region's emergency medical services system.

The Office of Emergency Medical Services relates to all sectors in the community engaged in system implementation. Those organizations directly represented on the Emergency Medical Care Committee or policy making groups are shown in Table 7. In addition tables 8 through 13 provide an organizational chart of the committee and description of its subcommittees.

SPECIFIC OBJECTIVES

Objective One

ACQUIRE OUTSIDE FINANCIAL RESOURCES TO RECRUIT AND HIRE THE APPROPRIATE STAFF MEMBERS FOR THE OFFICE OF EMERGENCY MEDICAL SERVICES AS NEEDED.

Implementation

The Office of Emergency Medical Services will acquire outside funding to support the personnel as needed (see Funding Chapter). The OEMS will attempt to recruit experienced EMS personnel to fill vacancies in the program as it expands and additional personnel as needed. Normal County recruiting and hiring practices will be followed.

TABLE 7

EMERGENCY MEDICAL CARE COMMITTEE

IS THE COMMITTEE MANDATED?	Yes - by State of California Health and Safety Code.
IS THE COMMITTEE REGULATORY?	Yes - Regulates Receiving Centers, Mobile Intensive Care Units, Medical Protocol for Paramedics.
IS THE COMMITTEE ADVISORY?	Yes - to Board of Supervisors and the Office of Emergency Medical Services.
WHAT ARE THE COMMITTEE'S ROLES AND RESPONSIBILITIES?	To monitor, evaluate and report its observations on first aid practices, ambulance services and emergency medical care.
WHEN DOES THE COMMITTEE MEET?	The third Friday of each month at 12:00 Noon at the Orange County Communications Center.

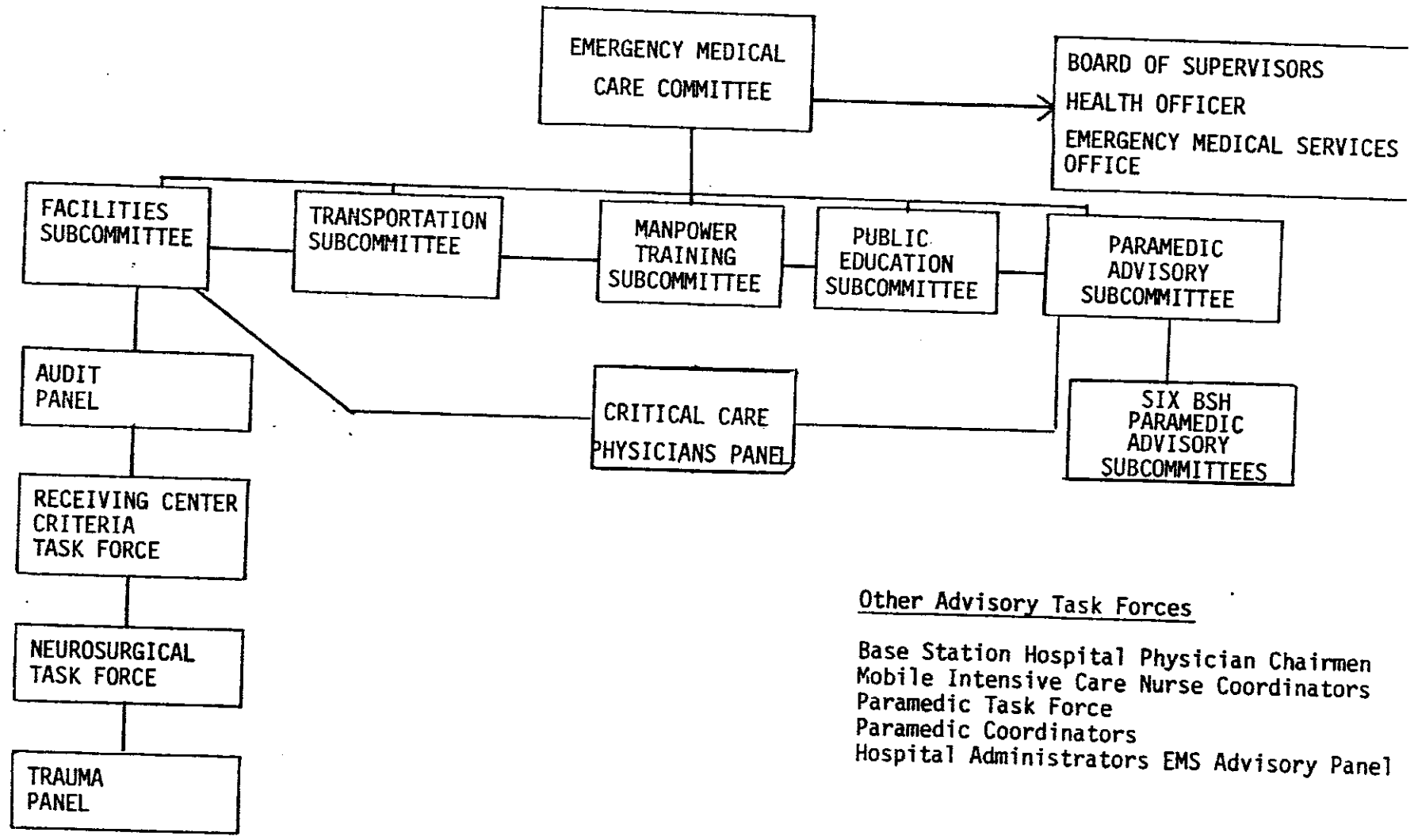
ORGANIZATIONS AND MANPOWER CATEGORIES

REPRESENTED ON THE EMERGENCY MEDICAL CARE COMMITTEE

Orange County Medical Association
American College of Emergency Physicians
Paramedic
Paramedic Training Instructor
Mobile Intensive Care Nurse
Hospital Council of Southern California
Orange County Communications
Orange County Chiefs of Police and Sheriff's Association
California Highway Patrol
Orange County Ambulance Association
Orange County Fire Chiefs Association
Orange County Health Planning Council
Orange County City Manager's Association
League of Women Voters
Orange County Human Relations Commission
Orange County Senior Citizens' Council
Orange County/Long Beach Health Consortium
League of California Cities

TABLE 8

EMERGENCY MEDICAL CARE COMMITTEE



Other Advisory Task Forces

Base Station Hospital Physician Chairmen
Mobile Intensive Care Nurse Coordinators
Paramedic Task Force
Paramedic Coordinators
Hospital Administrators EMS Advisory Panel

TABLE 9

PUBLIC EDUCATION SUBCOMMITTEE

IS THE COMMITTEE MANDATED?	No
IS THE COMMITTEE REGULATORY?	No
IS THE COMMITTEE ADVISORY?	Yes - To the Emergency Medical Care Committee (EMCC) and the Office of Emergency Medical Services (OEMS).
WHAT ARE THE COMMITTEE'S ROLES AND RESPONSIBILITIES?	Acts in an advisory capacity to the EMCC and the OEMS on Public Education Programs such as CPR Instruction and EMS System access.
WHEN DOES THE COMMITTEE MEET?	Usually once a month on a date agreeable to the committee members.

ORGANIZATIONS AND MANPOWER CATEGORIES
REPRESENTED ON THE PUBLIC EDUCATION SUBCOMMITTEE

Orange County Communications
Paramedic
Orange County Public Information Officer
Senior Citizens Council
American Heart Association
American Red Cross
Orange County Committee for Employment of the Handicapped
Emergency Department Physician Representative
Fire Department Representative
Community College Representative
UCI Student
KOCE-TV Channel 50

TABLE 10

MANPOWER TRAINING SUBCOMMITTEE

IS THE COMMITTEE MANDATED?	No
IS THE COMMITTEE REGULATORY?	Yes - Regulates Paramedic Training Programs through the Emergency Medical Care Committee
IS THE COMMITTEE ADVISORY?.	Yes - To Emergency Medical Care Committee (EMCC) and Office of Emergency Medical Services (OEMS).
WHAT ARE THE COMMITTEE'S ROLES AND RESPONSIBILITIES?	Acts in an advisory capacity to the EMCC and the OEMS on matters such as Paramedic Training and Mobile Intensive Care Nurse Training.
WHEN DOES THE COMMITTEE MEET?	Usually meets once a month on a date agreeable to the committee members.

ORGANIZATIONS AND MANPOWER CATEGORIES
REPRESENTED ON THE MANPOWER TRAINING SUBCOMMITTEE

Paramedic
Orange County/Long Beach Health Consortium
League of Women Voters
California Highway Patrol
Orange County Fire Chief's Association
Orange County Ambulance Association
Paramedic Training Instructor
Emergency Room Physician

TABLE 11

TRANSPORTATION SUBCOMMITTEE

IS THE COMMITTEE MANDATED?	No
IS THE COMMITTEE REGULATORY?	Yes - Regulates Ambulance Licensing through the Emergency Medical Care Committee
IS THE COMMITTEE ADVISORY?	Yes - To Emergency Medical Care Committee (EMCC) and Office of Emergency Medical Services (OEMS).
WHAT ARE THE COMMITTEE'S ROLES AND RESPONSIBILITIES?	Acts in an advisory capacity to the EMCC and the OEMS, making recommendations on matters related to ambulances and patient transport.
WHEN DOES THE COMMITTEE MEET?	Usually meets once a month on a date agreeable to the committee members at 9:00 A.M.

ORGANIZATIONS AND MANPOWER CATEGORIES

REPRESENTED ON THE TRANSPORTATION SUBCOMMITTEE

California Highway Patrol
Orange County Ambulance Association
Orange County Fire Chief's Association
Orange County Communications
Orange County Human Relations Commission

TABLE 12

PARAMEDIC ADVISORY COMMITTEE

IS THE COMMITTEE MANDATED?	No
IS THE COMMITTEE REGULATORY?	Yes, regulates paramedic practices.
IS THE COMMITTEE ADVISORY?	Yes, to the Office of Emergency Medical Services and Emergency Medical Care Committee
WHAT ARE THE COMMITTEE'S ROLES AND RESPONSIBILITIES?	To establish the medical protocol for the paramedic program
WHEN DOES THE COMMITTEE MEET?	Every other month on the fourth Wednesday at 1:00 p.m.

ORGANIZATIONS AND MANPOWER CATEGORIES
REPRESENTED ON THE PARAMEDIC ADVISORY COMMITTEE

Emergency Medical Care Committee

Pharmacist

Paramedic Instructor

Paramedic

Base Station Hospital Administrator

Anaheim Memorial Hospital

Huntington Intercommunity Hospital

St. Jude Hospital

UCI Medical Center

Hoag Memorial Hospital

Mission Community Hospital

TABLE 13

FACILITIES SUBCOMMITTEE

IS THE COMMITTEE MANDATED?	No
IS THE COMMITTEE REGULATORY?	Yes - Regulates Paramedic Receiving Centers through the Emergency Medical Care Committee
IS THE COMMITTEE ADVISORY?	Yes - to the Emergency Medical Care Committee (EMCC) and the Office of Emergency Medical Services (OEMS).
WHAT ARE THE COMMITTEE'S ROLES AND RESPONSIBILITIES?	Acts in an advisory capacity to the EMCC and the OEMS, making recommendations on matters related to critical care facilities and paramedic receiving centers.
WHEN DOES THE COMMITTEE MEET?	Typically meets once monthly on a date agreeable to the committee members.

ORGANIZATIONS AND MANPOWER CATEGORIES

REPRESENTED ON THE FACILITIES SUBCOMMITTEE

Orange County Medical Association
Hospital Council of Southern California
Orange County Fire Chief's Association
Orange County Health Planning Council
American College of Emergency Physicians
Paramedic

Objective Two

RECRUIT AND HIRE A LOCAL PHYSICIAN MEDICAL DIRECTOR.

Implementation

The OEMS, with the aid of their interim Medical Director, will seek out a local physician interested in EMS Administration. The interim Medical Director will work with this individual to help educate him/her to EMS System. OEMS will attempt to contract with this individual as a Medical Director.

Objective Three

ASSURE THAT THE CURRENT AND FUTURE MEMBERS OF THE EMS STAFF REMAIN CURRENT IN NATIONAL AND LOCAL EMS CHANGES.

Implementation

The OEMS will attempt to have staff members attend appropriate, pertinent National and regional EMS symposia. Funding for staff travel will be obtained from outside sources.

INTRODUCTION TO COMPONENTS

In 1973 the United States Congress passed Public Law 93-154, Emergency Medical Services Systems Act of 1973. This act stipulates 15 components that must be part of an EMS System. Those components are:

- Manpower
- Training
- Communications
- Transportation
- Facilities
- Critical Care Units
- Public Safety Agencies
- Consumer Participation
- Accessibility to Care
- Transfer of Patients
- Compatible Medical Records
- Consumer Information and Education
- System Evaluation
- Disaster Linkage
- Mutual Aid Agreements

In this Plan we have combined some of these components in an effort to prevent repetition. The Components have been combined into seven comprehensive sections which are:

- Manpower/Training
- Communications
- Transportation
- Facilities/Critical Care Units
- Public Education
- Evaluation
- Disaster/Mutual Aid

Each component deals with the current status, needs, specific objectives and an implementation approach for each objective.

COMPONENT I

MANPOWER/TRAINING

BROAD GOAL

The purpose of this componet is to provide the Emergency Medical Services System with an adequate number of persons trained to a level consistent with their roles and responsibilities to assure that the ill and injured receive safe and competent emergency medical care 24 hours a day, seven days a week.

During the past year, the following manpower categories have been identified as essential to the effective functioning of a total EMS system for Orange County. (See Appendix II for Manpower Inventories).

1. An educated and aware public
2. EMT - Dispatchers
3. First Responders (fire, police, lifeguards, and park and forest Rangers)
4. Emergency Medical Technician - Ambulance (EMT-A)
5. Emergency Medical Technician - Paramedic (EMT-P)
6. Registered Nurse - Emergency Department
7. Registered Nurse - Mobile Intensive Care Unit
8. Registered Nurse - Critical Care Unit
9. Physician - Emergency Department
10. Physician - Specialty (medical, surgical, pediatrics, etc.)
11. EMS Systems Medical Director
12. EMS Systems Administrator
13. EMS Systems Coordinator

During the past year, the above-mentioned groups were surveyed, roles and responsibilities were defined and training levels assessed. Projected needs for each manpower group, (excepting the educated public which is discussed in Component 5) and the percent trained to either National, local or professional standards are discussed in the following section. (Also see Table 14)

CURRENT STATUS AND NEEDS

1. EMT DISPATCHERS

Current Status

There are 394 public safety agency dispatchers in Orange County who have a responsibility to receive calls and dispatch vehicles for medical emergencies. No medical telephonic screening is done and units are dispatched to all declared emergencies. These communicators provide 24 hour a day, seven days a week coverage.

The National standard for dispatcher training is the Department of Transportation EMT Dispatcher course. At the present time, Orange County's 394 dispatchers have had no formal EMT-Dispatcher training.

Needs

In conjunction with the EMCC and other advisory committees, the OEMS needs to establish the role and responsibilities of dispatchers so that appropriate training programs can be developed in conjunction with their respective departments.

TABLE 14

NUMBER OF EMERGENCY MEDICAL SERVICES SYSTEM
PERSONNEL MEETING NATIONAL OR LOCAL TRAINING STANDARDS

CATEGORY	TOTAL NUMBER	% TRAINED TO NATIONAL,* LOCAL OR PROFESSIONAL STANDARDS	DEFINITION OF NATIONAL OR LOCAL TRAINING STANDARD
Public Safety (non-First Responders)	3455	97% (National and Local)	Training at the First Aid and CPR level is the National and Local standard.
First Responder	2341	51% (National and Local)	The National and Local standard is training at the EMT-A level.
Dispatcher	394	0 (National)	The National standard is completion of the Department of Transportation EMT-Dispatcher course.
Ambulance Attendant/ Driver	345	97% (National and Local)	Training at the EMT-A level is the National and local standard for this manpower group.
Paramedic	271	100% (National and Local)	EMT-P level training is both the National and the local standard.
MIC R.N.	120	100% (Local)	The local standard is training that enables passage of a test designed and administered by the Paramedic Program Instructors. Each BSH has its own training program.
E.D. R.N.	309	51% (Local)	Formal post-graduate E.D. training meeting Emergency Department of Nurses Association standard is the National Standard; the local is formal, postgraduate E.D. training.
Critical Care Unit R.N.	1020	82% (Local)	Formal, post-graduate critical care training is the local standard.
E.D. M.D.	228	(Survey in progress)	The National American College of Emergency Physicians standard for this manpower group is 5 years full time E.D. experience.

* Recommended by DHEW
** 1977 data indicates that of the 131 E.D. physicians in Orange County responding to an EMS survey: 27% had over 2 years E.D. training; 19% had 1-2 years E.D. training; 20% had less than 1 year E.R. training.

II. FIRST RESPONDERS

A. Law Enforcement - California Highway Patrol, Sheriff, Police

Current Status

The California Highway Patrol responds to all accidents occurring on 121 miles of freeways in Orange County. Of the 214 officers employed in the region, 210 have standard first aid and CPR training. They provide 24 hours a day, seven days a week coverage. The current National Training Standard, which has been adopted by the California Highway Patrol is training to the EMT-A level. This EMT-A training has been incorporated into the Highway Patrol training program in Sacramento.

The Sheriff normally does not respond to medical emergencies in the unincorporated areas of the County, but is sometimes the first responder in the case of a traffic accident, where medical aid is frequently needed. Of the 624 uniformed officers, 100% have standard first aid and CPR training meeting State of California Title 17 requirements and National standards. They provide 24 hours a day, seven days a week coverage.

There are 2,377 city police officers in Orange County who are required to meet medical training requirements. Of these, 2,156 (90.7%) have standard first aid training and 2,142 (90.1%) have CPR training, which is the National training standard. They provide 24 hours a day, seven days a week coverage.

Needs

Because the California Highway Patrol is responsible for responding to accidents on the County's 121 miles of freeways, they have adopted a policy of training all of their patrol persons to the EMT-A level. The OEMS will encourage the Highway Patrol to implement this goal as soon as possible.

In addition, the OEMS needs to assist local law enforcement agencies in obtaining standard first aid and CPR training required by State law, should there be any difficulty in obtaining such training.

B. FIREMEN

Current Status

There are 2,341 firemen employed in Orange County who act as primary first responders to medical emergencies. Of these, 2,107 (92%) have basic first aid training and 100% have CPR training. In addition, 1,194 (51%) are trained to the EMT-A level, which is the National standard, and it is anticipated that 100% will be EMT-A trained during the next year or two. There are numerous EMT-A training programs offered throughout the county. (See EMT - Ambulance.) They provide 24 hours a day, seven days a week coverage. Additionally, 271 (12%) of the County's firemen are trained to the EMT-P level. This group will be addressed in the EMT-P section.

Needs

The Orange County Fire Chiefs have set a goal of training 100% of the County firemen to to the EMT-A level. OEMS needs to continue to assure

that there are training programs available for these firemen.

C. LIFEGUARDS

Current Status

There are 459 lifeguards serving as first responders along the region's 42 miles of extensive ocean beaches. All 459 have standard first aid and CPR training which is the National standard for this manpower group. They provide 24 hours a day, seven days a week coverage.

Needs

The specific training needs of this manpower group need to be determined. The manpower group needs to be better integrated into the EMS System. This can be accomplished by meeting with lifeguard personnel to assess their current methods of patient treatment and define and implement more efficient and effective EMS System use by lifeguards. The Orange County Medical Association will work with the office of Emergency Medical Services to develop an Emergency Medical Care Program that will meet the needs of this Manpower group.

D. PARK AND FOREST EMPLOYEES

Current Status

There are 153 park and forest employees in the region of Orange County that act as first responders in the region's parks and forest. There are 100 (63%) who have standard first aid training and 110 (71%) who are trained in CPR which is the National standard for this manpower category. Additionally, 43 (28%) have EMT-A training.

Needs

The OEMS needs to assure that appropriate training and refresher courses are available for all park and forest employees. Additionally, this manpower group needs to be better integrated into the EMS System by representation on EMS committees and meetings with park and forest personnel to define patient flow and more effective ways of utilizing the EMS System.

III. EMT-A Ambulance

Current Status

There are 345 ambulance drivers/attendants in Orange County. There are 307 trained to the EMT-A level which is the National standard, seven EMT-Ps (who are not functioning as EMT-Ps), eight registered nurses, five licensed vocational nurses and 29 military corpsmen. The region has 22 ambulance agencies which operate a total of 77 vehicles. All zones of Orange County are covered with adequate staff 24 hours a day, seven days a week.

An ambulance ordinance was recently developed for the region to insure, among other things, that standardized training requirements are met by ambulance personnel. See Table 15 for a list of ambulance services and personnel.

Training programs are currently offered at Santa Ana Community College, Saddleback College, Orange Coast College, Capistrano Laguna Beach Regional Occupation Program, Southern California College of Medical and Dental Careers in Anaheim, and American College of Paramedical Arts and Sciences in Santa Ana.

TABLE 15

AMBULANCE SERVICES - ORANGE COUNTY

Agency Providing Ambulance Service	Number of Ambulance Personnel	Number of EMT - A	Number of Vehicles
Aids Medical Enterprises	4	4	1
Autonetics (Industrial)	N/A	N/A	1
Care Convalescent	12	12	6
Comfort Coach & Ambulance	12	11*	3
Conva-Care	14	12*	3
Doctor's Ambulance	14	14	2
Emergency	7	7	2
Golden West	27	27	3
Goodhew	12	11*	4
Hughes Aircraft (Industrial)	8	8	1
Huntington	35	14*	1
Infield	10	10	3
Medix	7	7	1
Morgan	13	12*	4
Schaefer	36	30*	9
Scudder	17	13*	4
Seals	25	23*	8
Southland	42	42	13
Speedway	7	7	3
City of San Clemente Fire	12	12	2
City of Stanton Fire	22	22	2
Orange County Fire	6	6	1
	342	304	77

*Other personnel are classifed as R.N., L.V.N. or ex-military-medic.

Needs

Two of the six EMT-A programs are taught by private institutions and five by community colleges. There is a large degree of variance in course requirements and length between the programs. The OEMS needs to meet with EMT-A training program directors to standardize the programs so that all EMT-As have uniform, quality training.

There is a projected increase in EMT-A program enrollments over the next year. The reason for this is twofold. Firstly, a recently adopted ambulance ordinance in our region requires all ambulance drivers and attendants to be trained to the EMT-A level. This will create an increase in EMT-A enrollments over the next six months. The Office of Emergency Medical Services needs to insure that adequate training slots and challenge exams are available. Secondly, the region's 19 fire departments are in the process of training all first responder personnel to the EMT-A level. This will also increase the enrollment in the region's training programs and challenge exams.

IV. EMT - PARAMEDIC

Current Status

There are currently 259 certified paramedics operating in the County under the authority of the Wedworth-Townsend Paramedic Legislation. This legislation gives the certifying and quality assurance responsibility

to the local Health Officer who has designated UCIMC as the training center. The Board of Supervisors approved a Paramedic Master Plan that originally called for 31 units staffed by 236 paramedics but due to increased awareness of the paramedic program and growth there has been a larger than expected demand for paramedic services. This has led to the Paramedic Master Plan being amended to 35 units with an optimum staffing of 296 paramedics. Presently, the paramedics provide 24 hours a day seven days a week coverage to 80% of the region's population within five minutes, 10% within an average of 15 minutes, and the remaining 10% uncovered. One hundred percent are trained to the National standard which is EMT-P. See Table 16 for a list of paramedic services and personnel.

Needs

More than 90% of the population in the region is served by paramedics. There is a need to train paramedics to serve the remaining 10%. There is also a need to provide interdisciplinary training to permit paramedics to function more effectively with their team members -- the MIC nurse and physician. There is also a need to maintain competency of the existing paramedics through ongoing monitoring, retraining and continuing education.

TABLE 16

NUMBER OF PARAMEDIC UNITS AND CERTIFIED PARAMEDICS

PROVIDING SERVICES IN ORANGE COUNTY - DECEMBER 1978

AGENCY	NUMBER OF PARAMEDIC UNITS	NUMBER OF CERTIFIED PARAMEDICS
Anaheim Fire Dept.	3	27
Buena Park Fire Dept.	1	9
Costa Mesa Fire Dept.	1	10
Fountain Valley Fire Dept.	1	10
Fullerton Fire Dept.	3	20
Garden Grove Fire Dept.	2	14
Huntington Beach Fire Dept.	2	22
La Habra Fire Eept.	1	8
Newport Beach Fire Dept.	2	14
Orange City Fire Dept.	1	10
Orange County Fire Dept.	10	62
San Clemente Fire Dept.	0	1
Santa Ana Fire Dept.	3	24
Seal Beach Fire Dept.	1	8
Westminster Fire Dept.	1	10
Santa Ana-Tustin Comm. Hosp.	2	18
TOTAL	34	259

V. REGISTERED NURSES

A. Emergency Department Nurse

Current Status

There are 309 registered nurses working in 38 hospital emergency departments. Of these 309 nurses, 158 (51%) have formal emergency post-graduate training which is the local standard. They provide staffing 24 hours a day, seven days a week. No formal training programs in emergency department nursing are presently available in Orange County. The National training standard for this manpower group is a course using post graduate training criteria meeting Emergency Department Nurses Association standards.

Needs

The Emergency Department Nurses without formal emergency department training (49%) need a local training program meeting National Emergency Department Nurses Association standards. For the remaining 51% of Emergency Department nurses knowledge and skills deficiencies must be determined so that appropriate continuing education courses can be developed.

Additionally, education on the EMS system, pre-hospital care, equipment and techniques are needed so that these nurses can play their appropriate roles in the rapid and expeditious care and movement of the emergency patient.

B. MOBILE INTENSIVE CARE NURSE

Current Status

There are 105 MIC nurses working in six Base Station Hospitals in the County, all of who are trained to local standards. These nurses provide medical direction to the paramedics in the field via two-way radio communications, under the supervision of the Emergency Department physician. Each Base Station Hospital has its own training program for MIC Nurses. A system of oral, written and practical testing is utilized to insure the competency of these nurses. Certification is provided by the Health Officer under the authority of the Wedworth-Townsend Paramedic Legislation. They provide staffing 24 hours a day, seven days a week.

Needs

Although the County has a responsibility for certification and recertification of MIC nurses, there is currently no standard curriculum for their training. The OEMS needs to insure the development of a standardized curriculum and assist Base Station Hospitals in utilizing the curriculum for new trainees. There is also a need to provide a continuing education program.

C. CRITICAL CARE UNIT NURSE

Current Status

There are 1020 registered critical care nurses employed in Orange County

working in a variety of settings, mostly in Coronary Care Units. Of these nurses, 82% have had formal critical care training which is the local standard, and 66% have obtained a variety of experience, including some continuing education in critical care. They provide staffing 24 hours a day, seven days a week.

Needs

Special symposiums on the management of critically ill and injured patients such as burn, poison, trauma, spinal cord, high risk infant, cardiac, and behavioral patients need to be conducted to further educate this manpower group.

VI. PHYSICIANS

A. Emergency Department Physicians

Current Status

There are 228 emergency department physicians employed in 38 hospital emergency departments. The National standard for emergency department physicians is five years full time E.D. experience (according to the American College of Emergency Physicians). A survey is currently in progress to determine levels of E.D. experience among Orange County physicians.

Needs

The majority of the emergency department physicans have obtained their expertise from their day-to-day practical experience, from other physicians in their small groups and from occasional State and National

American College of Emergency Physicians' Symposiums. There is a need to provide a relevant, accessible program of medical education which will remedy the specific deficiencies in each physician's knowledge, be appropriate for the most frequent emergency situations that he/she meets, and which defines and updates knowledge and skills that all emergency department physicians need. There is a need to resurvey the Emergency Room M.D.s to determine their training needs.

B. MOBILE INTENSIVE CARE PHYSICIANS (BASE STATION PHYSICIANS)

Current Status

Currently there are approximately 30 MIC physicians working in the six Base Station Hospitals. These physicians are responsible for providing medical direction to the paramedics while in the field. Presently, there are no designated qualifications for this status beyond being a licensed physician. However, the committee has proposed the following as criteria:

1. Advanced Cardiac Life Support trained.
2. Meet Title 22 requirements.
3. Obtain 50 hours per year of Continuing Medical Education - I in Emergency Medicine related topics.

Needs

There is a need to formally adopt the criteria for qualification as an MIC physician (BSH M.D.). Although the Mobile Intensive Care Physician, nurse and paramedic are expected to act as one in a team effort, their training has been primarily individual under separate training programs at the Base Hospitals and Paramedic Training Center.

The physicians have not had specific training for their role as medical director and leader of the MIC team. There is a need to provide interdisciplinary training on team work, communications and role responsibilities of each team member in order to create an effective mobile intensive care team. This training must be provided specifically at each Base Hospital so as to involve specific members of each team.

C. SPECIALTY PHYSICIANS - (MEDICAL, SURGICAL, PEDIATRIC AND PSYCHIATRIC)

Current Status

The region has critical care and specialty physicians available when needed to provide appropriate care to emergency patients. Each hospital maintains an up-to-date specialty panel of physicians in the emergency department which the emergency department physician can use to call the appropriate physician specialist to treat the emergency patient.

Needs

At present, a large number of specialty physicians are only vaguely aware of the entire EMS System. There is a need to provide seminars for these physicians to educate them about the system and specific critical care plans (addressed in Component 4) and to aid them in providing input to further the development of the system.

D. COMMUNITY PHYSICIANS

Current Status

The physicians practicing in the community are essential to the operations of the EMS System. Community physicians provide primary emergency care in their offices, and in the 37 hospital emergency department facilities in the County. They must participate in the development of the County's EMS System so that it is relevent to meet the medical needs of their patients. Presently, this participation should be via OCMA.

Needs

Meetings need to be held with community physicians to solicit their input on the development of Orange County's EMS System so that it can effectively meet the needs of all emergency patients.

VII. EMS ADMINISTRATORS

A. EMERGENCY MEDICAL SERVICES SYSTEM DIRECTOR

Current Status

The Office of Emergency Medical Services has a director experienced in emergency medical administration to provide the leadership for the implementation of this Plan. Medical direction is provided by the Health Officer of Orange County, who is also Chairman of the Emergency Medical Care Committee, and the EMS Medical Director (Dr. Sylvia Micik). Dr. Micik is providing medical direction for the program until a local physician is named to assume this position.

Needs

A permanent, local physician needs to be recruited to assume the position of Medical Director for the EMS Program.

B. EMERGENCY MEDICAL SERVICES SYSTEM SPECIALISTS

Current Status

The Emergency Medical Services existing staff is well trained and consists of a Paramedic Supervisor who is a registered nurse with experience in emergency and critical care nursing; an EMS Coordinator who is a veteran medic and a registered MIC nurse; an Assistant Planner, a Public Education/ Information Specialist; a Management Intern and clerical support.

Because Orange County is considered by the Department of Health, Education and Welfare to have a steadily progressing EMS System, it has been chosen as a site for a July 1979 National Conference. "Medical Control" in the EMS program is the intended topic. Staffing for the organization of the conference will be provided by both DHEW and OEMS. Total funding will be provided by DHEW.

Also, because Orange County has taken a leadership role in the area of EMS legislation, it will sponsor a State Conference on this topic. Staffing for the organization of the conference will be provided by OEMS and funded by the DHEW Implementation Grant.

Needs

The Emergency Medical Services staff has developed on-the-job experience in emergency medical services systems development and operation, including the relevant special medical and geopolitical situations of the region. Staff members have participated in conferences and seminars to become apprised of the latest developments in the emergency medical field.

There is a need to continue staff and consultant participation in these conferences and symposiums to assure program development consistent with national policy.

BROAD OBJECTIVE

The broad objective of this component is to assure that adequate numbers of EMS manpower groups exist and that there are sufficient training programs in the area to meet their needs.

OBJECTIVE NO. 1

CONDUCT CPR TRAINING COURSES THAT INCLUDE INFORMATION ON EMS SYSTEM ACCESS. (SEE PUBLIC EDUCATION COMPONENT, OBJECTIVE 8)

Implementation

The OEMS received a CETA grant in 1977 to establish a program that provides CPR instruction and EMS System information to the public at no charge. An aggressive, outreach CPR training campaign will utilize the four CETA funded CPR instructors to conduct CPR courses for special populations.

OBJECTIVE NO. 2

ASSURE THE AVAILABILITY OF TRAINING COURSES AND REFRESHER TRAINING COURSES IN FIRST AID AND CPR FOR PUBLIC SAFETY PERSONNEL AND FIRST RESPONDERS.

Implementation

The EMS training coordinator will work with local public safety training coordinators to assure that these personnel have adequate training programs available to maintain their proficiency in basic first aid and CPR.

OBJECTIVE NO. 3

ASSURE THE AVAILABILITY OF TRAINING FOR THE FIREMEN IN THE COUNTY THAT HAVE NOT YET BEEN TRAINED TO THE EMT-A LEVEL BY 1982.

Implementation

The EMS training coordinator will work with the Community College directors to insure that firemen have priority in receiving EMT-A training.

OBJECTIVE NO. 4

STANDARDIZE THE CURRICULUM, LENGTH AND INSTRUCTOR PERSONNEL FOR THE REGION'S SIX EMT-A COURSES OFFERED IN THE REGION.

Implementation

The EMS training coordinator will meet with the directors of the EMT-A training programs to review standardization of curriculum in addition to working with State offices to assure standardization of instructors, qualifications, personnel and course length. The training coordinator will also seek to link expertise in the paramedic training program to the EMT-A programs.

OBJECTIVE NO. 5

ASSURE THE AVAILABILITY OF AN ONGOING PARAMEDIC TRAINING PROGRAM TO PROVIDE BASIC PARAMEDIC TRAINING TO 24 STUDENTS PER YEAR TO REPLACE MANPOWER LOST DUE TO ATTRITION OR PROMOTION.

Implementation

The OEMS will provide for training of additional paramedics as needed by contracting with an institution in the region.

OBJECTIVE NO. 6

PROVIDE BI-ANNUAL 40-HOUR EMT-PARAMEDIC REFRESHER TRAINING TO MEET RECERTIFICATION REQUIREMENTS AND MAINTAIN PROFICIENCY FOR 150 PARAMEDICS PER YEAR.

Implementation

Contract with the designated training center to provide refresher training consisting of 20 hours of didactic training and observation of the paramedics on at least one field response by the Base Station MIC coordinator. Additionally, twenty hours of continuing education is required and is provided by the Base Station Hospital. These courses will be monitored on a continuing basis for continuity and quality.

OBJECTIVE NO. 7

ESTABLISH A TRAINING PROGRAM FOR EMERGENCY DEPARTMENT NURSES USING STANDARDS OF THE EMERGENCY DEPARTMENT NURSES ASSOCIATION. ONCE THE PROGRAM IS ESTABLISHED, 75 NURSES PER YEAR WILL BE TRAINED.

Implementation

a. EMS Training Coordinator working with the Manpower Training Committee, will develop an Emergency Department Nurse Training Advisory Committee consisting of representatives of EDNA,

emergency department physicians, one trauma surgeon, one cardiologist, and one pediatrician.

b. Advisory committee will review the EDNA course guide curriculum and adapt to local needs.

c. The principal instructor will develop learning objectives, and evaluation criteria and recruit faculty and acquaint them with the learning objectives.

OBJECTIVE NO. 8

ASSURE THE AVAILABILITY OF RETRAINING FOR 70 NURSES PER YEAR IN SPECIFIC EMERGENCY DEPARTMENT NURSING BY PROVIDING 40 HOURS OF CONTINUING EDUCATION AT CONTRACTED SITE BY JULY 1980.

Implementation

a. EMS Office Training Coordinator will survey E.D. nurses in Paramedic Receiving Centers. Utilizing a self-assessment examination, specific deficiencies in knowledge and skills will be determined.

b. Utilizing the same advisory committee as for the curriculum development, a curriculum will be developed based on these performance deficiencies.

c. The nurse coordinator will develop learning objectives, and evaluation criteria, recruit faculty, and acquaint them with learning objectives.

d. One class of 20 students will be held every three months consisting of 30 hours of classroom teaching and ten hours of skills training

at their own E.D. under the direction of the E.D. physicians beginning January 1980.

OBJECTIVE NO. 9

DEVELOP A STANDARDIZED CURRICULUM AND ASSURE THE AVAILABILITY OF INITIAL TRAINING FOR ALL MIC NURSES BY JULY 1981.

Implementation

A Mobile Intensive Care Nurse Educator will develop a curriculum based on the treatment protocols used by the Paramedics. This curriculum will be structured so as to properly educate these nurses, thus enabling them to pass the Orange County Mobile Intensive Care Nurse certification examination, both written and practical portions. It is anticipated that the curriculum will be developed and an initial 35 nurses trained by July 1979. The remaining MIC nurses will all be trained by 1981.

OBJECTIVE NO. 10

DEVELOP A STANDARDIZED CURRICULUM AND PROVIDE 20 HOURS CONTINUING EDUCATION FOR MIC NURSES TO CORRECT SPECIFIC DEFICIENCIES IN KNOWLEDGE AND SKILLS TO MAKE THEM ELIGIBLE AND COMPETENT FOR RECERTIFICATION.

Implementation

Using the curriculum developed in Objective No. 9 as a model, another separate curriculum will be developed to correct deficiencies in MIC nurses who are eligible for recertification. This curriculum will be developed to cover both written and practical areas of skills needed to pass the recertification

test. Completion of a course using the above developed curriculum will enable nurses to be competent in the skills required to pass the MIC Nurse recertification test.

OBJECTIVE NO. 11

CO-SPONSOR THREE SYMPOSIUMS PER YEAR FOR CRITICAL CARE NURSES AND PHYSICIANS IN THE MANAGEMENT OF CRITICALLY INJURED TRAUMA, BURN, CARDIAC, HIGH RISK INFANT, SPINAL CORD, POISON AND BEHAVIORAL PATIENTS.

Implementation

Each Critical Care Center should hold a two-day symposium and one-day skills workshop every third month. The OEMS Manpower Training Coordinator and nurse director of each unit will be responsible for coordinating the symposium. Speakers will consist of regional Critical Care experts and also guest faculty from other California Critical Care Centers.

The Symposium content will be divided into EMS System components stressing triage protocols, transfer agreements and vertical categorization and a critical care nursing component stressing treatment modalities.

OBJECTIVE NO. 12

ASSURE THAT THE REGION HAS ADEQUATE ADVANCED CARDIAC LIFE SUPPORT (ACLS) CLASSES AVAILABLE FOR ALL EMERGENCY DEPARTMENT NURSES AND PHYSICIANS IN THE COUNTY.

Implementation

The OEMS Training Coordinator will hold meetings with the American Heart

Association and community hospitals to assure that there are enough ACLS classes offered to enable all E.D. physicians and nurses to attend.

OBJECTIVE NO. 13

CONTRACT WITH THE PARAMEDIC TRAINING AGENCY TO ESTABLISH INTERDISCIPLINARY TRAINING AT THE SIX BASE HOSPITALS FOR PHYSICIAN, MIC NURSES AND PARAMEDICS.

Implementation

An interdisciplinary Mobile Intensive Care curriculum has been developed under a Title VII EMS Training Grant at the University of California, San Diego, School of Medicine. At the present time it is being tested and will be ready for utilization outside of San Diego by July 1978.

A half-time MIC Team Training Coordinator will be hired under the supervision of the Paramedic Training Director. He/she will be trained in utilization of the curriculum for training instructors and facilities, and will receive instructional direction from the developers of the curriculum at UCSD School of Medicine under direction of David Allan, M.D., Associate Dean of Continuing Education. Dr. Allan will consult with the Training Coordinator and Base (Resource) Hospital physician directors.

Training will take place at each Base Station involving the team of E.D. physicians, MIC nurses and the paramedics for which the hospital is responsible. During the 1978/79 fiscal year, it is expected that 20 physicians, 50 MIC nurses and 100 paramedics will participate in interdisciplinary training at their respective Base Hospitals.

The curriculum to be utilized is under development at UCSD and will be

available July 1, 1978. The curriculum stresses competence in communications skills, leadership, understanding of roles, protocols, patient assessment and performance of individual skills in a team effort. A strong evaluation component exists to determine success in meeting learning objectives and impacting patient care. Appropriate modifications of the curriculum will be made for Orange County.

It is expected that after the first year, this training program will be self-sustaining at each Base (Resource) Hospital as part of their individual continuing education programs.

OBJECTIVE NO. 14

INCREASE COMPETENCY OF EMS PROFESSIONAL STAFF BY ATTENDING NATIONAL AND STATE EDUCATIONAL MEETINGS AND SEMINARS.

Implementation

It is our intent to make training programs available for the professional staff to increase their competence and to send key staff persons to regional and national meetings on EMS.

OBJECTIVE NO. 15

SPONSOR A STATE SYMPOSIUM ON LEGISLATIVE REQUIREMENTS OF EMS TO REACH ALL EMS ADMINISTRATORS IN THE STATE.

Implementation

Orange County EMS will sponsor a State-wide symposium on EMS-related legislation to better educate EMS System professionals. Staffing for the organization of the symposium will be provided by the OEMS. Funding will be provided by DHEW.

OBJECTIVE NO. 16

SPONSOR AN EMS SYMPOSIUM ON COMMUNICATIONS AND MEDICAL CONTROL FOR LOCAL, STATE AND NATIONAL EMS ADMINISTRATORS, PHYSICIANS AND DIRECTORS.

Implementation

The OEMS will sponsor in conjunction with H.E.W., a symposium on communications and medical control. The symposium will be open to 500 local, State and National EMS administrators, directors and physicians. Staffing for organization of the symposium will be provided by OEMS and DHEW. Funding will be provided by DHEW.

OBJECTIVE NO. 17

INCLUDE A SECTION ON NON-ENGLISH COMMUNICATION FOR MEDICAL EMERGENCIES IN EACH MANPOWER TRAINING PROGRAM THAT THE OEMS COORDINATES.

Implementation

The OEMS will insure that each of the manpower training programs devote a portion of their program to communication in foreign languages that are of significance in that community.

COMPONENT II

COMMUNICATIONS

BROAD GOAL:

To provide for the linking of EMS System personnel, facilities and equipment to assure notification of the nearest, most appropriate emergency unit and assure continuous and proper medical control.

CURRENT STATUS AND NEEDS

1. Citizen Access

In Orange County, 55 different telephone numbers exist for public access to the EMS system through police and fire departments. In an attempt to modify this situation and provide for a single entry point, the State of California has mandated that the universal phone number "911" be implemented by 1985. The State also authorized the establishment of a telephone surcharge to pay for the implementation of this system.

The establishment has met with several delays, both mechanical and legislative. In addition there appears to be a conflict in State legislation. Current legislation calls for the original receiver of the emergency call to dispatch that call. Orange County does not envision a single 9-1-1 center, but rather, a system of 9-1-1 areas with a coordinated dispatch system for that area.

2. Coordinated Dispatch

As mentioned above (9-1-1 section) Orange County does not envision a single, County-wide dispatch center. Instead, the County has planned a series of "nets" or local areas where the public safety agencies will group together to form a single dispatch center. This will reduce the number of dispatch centers in the County, thus reducing cost and confusion.

Two areas of coordinated dispatch currently exist within the county: Net 6 (Huntington Beach, Fountain Valley, Seal Beach, Westminster) and the Garden Grove - Orange network.

3. Telephone Screening

When a call is received by an emergency dispatching agency, no screening "for need" is done, since the axiom "what the patient feels is an emergency is an emergency" is used.

The OEMS needs to assess the possibility of a future need for telephonic screening in Orange County to more efficiently utilize its resources.

4. Paramedic Communications

The County of Orange operates a centrally coordinated communications system. This Paramedic Coordinated Communication System (PCCS) links not only the paramedic team and the Base Station (Resource) Hospital (BSH) but also fire departments, police agencies and receiving hospitals. This complex radio system and emergency medical console is manned continuously by an Emergency Medical Care Coordinator. The

coordinator monitors the eight bio-medical telemetry radio channels, determines which channels are free of interference and usable in any geographical area and assigns the best available channel to any Base Station Hospital (BSH) to allow a physician or MIC Nurse to provide medical direction to the paramedics.

A hotline telephone provides direct access to fire dispatch headquarters, while a private intercom system links the six Base Station Hospitals.

A complete Operating Manual for the Paramedic Coordinated Communication System has been developed and is utilized by all components of the communications system.

The elements of an Advanced Life Support communications system are in place and operating in a very efficient manner. There is a need, however, to intergrate the Basic Life Support communications system into the existing system. Orange County has received a State grant to install 75 radios in all ambulances in the County. This will then provide the needed link between the ALS and the BLS system.

There is also a need to provide the means for an out-of-county paramedic to continue radio communications with his established, designated medical control center.

5. Medical Control

A physician is required to assume direct medical control for all care rendered in an emergency at the scene of an incident and enroute to

the hospital. Medical control for the paramedic system is organized as follows. (See Table 17). There are six Base Station Hospitals as listed below:

Hospital	Medical Director
Hoag Memorial Hospital	Michael Bear, M.D.
Anaheim Memorial Hospital	Raymond Colfax, M.D.
St. Jude Hospital	Lew Moss, M.D.
Huntington Intercommunity Hospital	Robert Fayer, M.D.
Mission Intercommunity Hospital	John Coon, M.D.
UCI Medical Center	Alan Gazzaniga, M.D.

These Base hospitals have the following responsibilities:

1. Provide medical direction to paramedics.
2. Provide continuing education and review for paramedics and mobile intensive care nurses.
3. Continually monitor the paramedics within their region.
4. Conduct training programs for MIC Nurses.

There are 24 associated Receiving Hospitals which are specially certified to meet the standards to accept paramedic patients. While they are linked to the Base Hospital by a designated telephone line they do not communicate with paramedics. Physicians at the Base Hospitals communicate patient status and patient care data to a physician or nurse at the Receiving Hospital via telephone. The paramedics bring EKG strips and patient record forms to the Receiving Hospital.

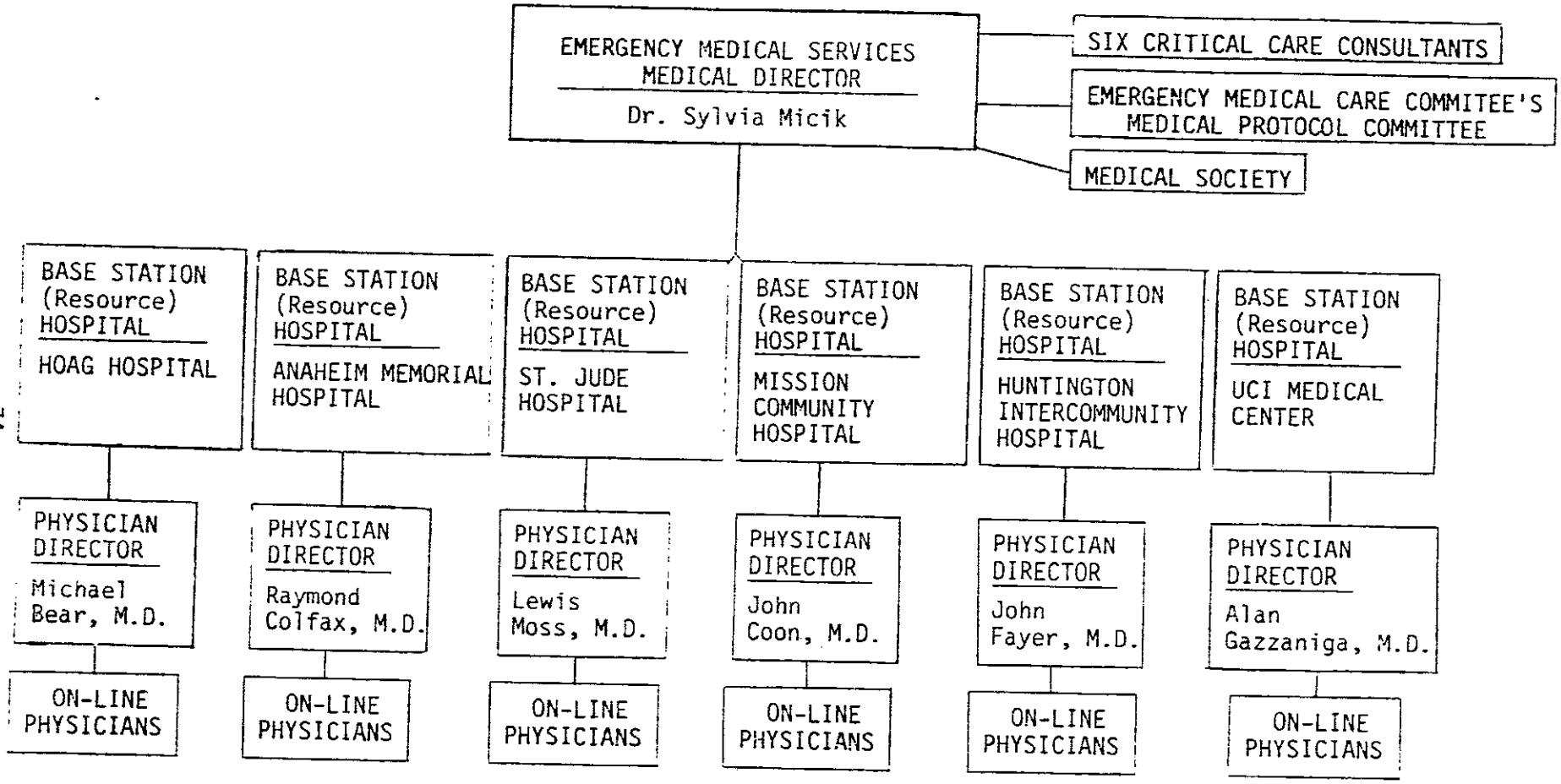
6. Hospital to Hospital

In Orange County, 34 hospitals and Orange County Communications have

TABLE 17

MEDICAL CONTROL

ORGANIZATION CHART



radio base stations on a communications system known as the Hospital Emergency Administrative Radio (HEAR) Network. Established by the Hospital Council of Southern California in 1972, the HEAR system links hospitals and other agencies from Santa Barbara to the Mexican border. This system provides day-to-day coordination of emergency medical resources and can be used for coordination in a disaster. Using the HEAR frequency, qualified operators are able to determine immediate availability of area medical specialists, rare blood types, additional blood supplies and special equipment.

BROAD OBJECTIVE

To assure that a coordinated communications system is effectively providing both notification of emergencies to the most appropriate unit and proper medical control.

SPECIFIC OBJECTIVES

OBJECTIVE NO. 1

PROVIDE THE MEANS FOR AN OUT-OF-COUNTY PARAMEDIC TO CONTINUE RADIO COMMUNICATIONS WITH HIS ESTABLISHED, DESIGNATED MEDICAL CONTROL CENTER.

Implementation

Funds have been granted by the Federal Office of HEW to install the appropriate equipment at the communications center to provide continuous medical control for out-of-county paramedics.

OBJECTIVE NO. 2

INTERFACE THE BASIC LIFE SUPPORT SYSTEM WITH THE EXISTING ADVANCED LIFE SUPPORT SYSTEM.

Implementation

The OEMS has received a grant from DOT/OTS to install UHF radios in all ambulances in Orange County. During the next year the OEMS will work on developing a policy and procedures manual for the use of these radios as well as arranging for the purchase and installation of them.

OBJECTIVE NO. 3

CONTINUE TO ENCOURAGE LOCAL COMMUNITIES TO COMBINE EFFORTS AND FACILITIES FOR THE DISPATCHING OF EMERGENCY RESPONSE UNITS.

Implementation

If there is to be an effective 9-1-1 system, Orange County needs to consolidate its present local communication system. The OEMS will continue to work with and encourage the consolidation of resources for the dispatching of emergency first responders in the County. It is hoped that this consolidation will immediately reduce the public confusion and number of misplaced emergency calls. This will make the ultimate implementation of the 9-1-1 system more expeditious in Orange County.

OBJECTIVE NO. 4

PARTICIPATE WITH THE STATE IN THE IMPLEMENTATION OF THE 9-1-1 SYSTEM IN ORANGE COUNTY.

Implementation

The OEMS will continue to encourage the timely implementation of the 9-1-1 system and will participate in the implementation to assure appropriate numbers of emergency lines are connec ed to the system.

TRANSPORTATION

COMPONENT IV

TRANSPORTATION

BROAD GOAL

Develop a complete EMS transportation system including adequate numbers of trained personnel and equipment, transfer protocols and agreements, and the establishment of a zoning sytem for ambulances to assure that emergency medical patients are provided transportation to the nearest appropriate facility, 24 hours a day, seven days a week.

Basic Ambulance Services - Current Status

South County is experiencing tremendous population growth and development which contributes to the shortage of available ambulance service. In addition, much of the South County is covered by mountain ranges which inhibits easy ambulance access to the entire area. Together, these factors explain the lack of adequate basic ambulance coverage in this area.

Basic ambulance services in the Orange County program provide transportation services for paramedic patients. There are 18 commercial ambulance companies with vehicles in general services throughout the county. In addition, two industries maintain ambulance services for their own use, and three cities -- Irvine, Stanton, and San Clemente -- operate ambulances in their respective communities. (See Table 18). Only the commercial companies require reimbursement from the patient, and this is by direct billing or through third party payment.

In December, 1977, Orange County Board of Supervisors adopted an ordinance which standardized ambulance rates for Orange County and set the rules, regulations and fees for all ambulance companies operating in the county area.

TABLE 18

AMBULANCE SERVICES - ORANGE COUNTY

Agency Providing Ambulance Service	Number of Ambulance Personnel	Number of EMT - A	Number of Vehicles
Aids Medical Enterprises	4	4	1
Autonetics (Industrial)	N/A	N/A	1
Care Convalescent	12	12	6
Comfort Coach & Ambulance	12	11*	3
Conva-Care	14	12*	3
Doctor's Ambulance	14	14	2
Emergency	7	7	2
Golden West	27	27	3
Goodhew	12	11*	4
Hughes Aircraft (Industrial)	8	8	1
Huntington	35	14*	1
Infield	10	10	3
Medix	7	7	1
Morgan	13	12*	4
Schaefer	36	30*	9
Scudder	17	13*	4
Seals	25	23*	8
Southland	42	42	13
Speedway	7	7	3
City of San Clemente Fire	12	12	2
City of Stanton Fire	22	22	2
Orange County Fire	6	6	1
	342	304	77

*Other personnel are classifed as R.N., L.V.N. or ex-military-medic.

Recent survey results indicated that there are 342 ambulance attendants/drivers in the county. These personnel are required to be trained to the EMT-A level by State regulations, and those operating in the county areas must be licensed by the County.

These 22 companies maintain some 77 vehicles. The vehicles must pass Orange County and California Highway Patrol inspections. The OEMS, through the Health Department, licenses all attendants/drivers and vehicles. OEMS inspects the vehicles for medical equipment meeting American College of Surgeon's standards. The California Highway Patrol is responsible for inspecting the ambulances for vehicle safety.

In Orange County the fire services are responsible for providing first response to medical emergencies when requested. The fire departments are also responsible for responding a heavy rescue vehicle to emergencies involving trapped victims. At present, these fire services are capable of responding to 90% of all medical emergencies within four minutes. Transportation is in most cases provided by private ambulance companies following paramedic treatment. Presently, there is no standardized patient form in use by the private ambulance companies. In critical cases the paramedics accompany the patient in the ambulance. These patients are transported to the nearest Paramedic Receiving Center.

In order to provide a high quality integrated EMS transport system the following needs must be met:

Basic Ambulance Services - Needs

1. Continue implementation of the new County Ambulance Ordinance.

2. Develop a system of zoning for ambulance services, thus assuring proper allocation of resources and 24-hour availability. Table 19 illustrates the proposed zones for Orange County.
3. Place all ambulances on the County Communications network.
4. Develop written policies and procedures for the operation of this radio net.
5. Develop and implement a uniform pre-hospital data reporting form for basic ambulance transports, completing the patient information link in the data system.

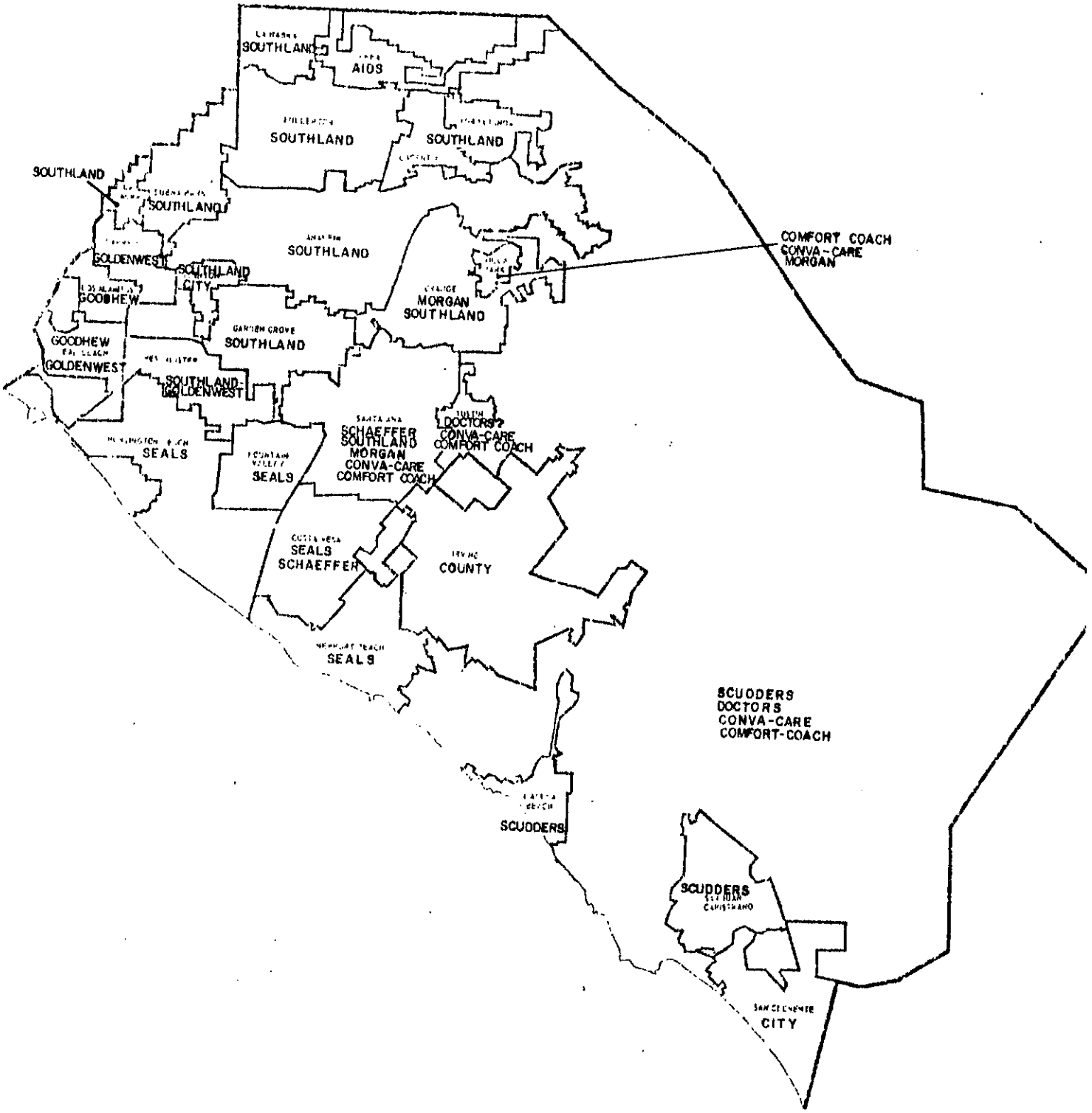
Water Transportation -- Current Status

There are 42 miles of coastline and beaches in the region. These beaches provide a major attraction for watersports during all 12 months of each year. Coverage of the beaches and bays is provided by fixed stations, roving vehicles and high speed boats. Emergency medical care in the ocean and open waters is provided by the Coast Guard Service. Several small patrol boats are stationed in Orange County and will respond to medical emergencies. Larger patrol boats and helicopters with a primary mission of search and rescue are available in Los Angeles County for response to medical emergencies. The helicopters can be manned by physicians as needed.

The lifeguards on duty at the beaches are first responders to drowning victims and other aquatic emergencies. The 459 beach lifeguards are all trained to the Red Cross Advanced First Aid level (according to State law). Few, however, are trained beyond this level. Lifeguards fall under numerous jurisdictions including County, State, city and private organizations, thus making coordination difficult.

TABLE 19

AMBULANCE SERVICE AREAS PRIMARY COVERAGE



Water Transportation - Needs

1. There is a need to integrate the various lifeguard systems into the EMS system in order to provide the most efficient and effective emergency medical care on the County's coastline and beaches.
2. Because lifeguards are first responders on the County's 42 miles of beaches and coastline, there is a need to train them to the EMT-A level.

Air Transportation - Current Status

Emergency air transportation is provided by El Toro Marine Corps Air Station, located in central Orange County. A working agreement and protocol has been developed between the OEMS and El Toro Marine Corps Air Station under the MAST system. For ocean rescues a Coast Guard helicopter is available for evacuations of patients or transportation of medical personnel to the scene of the emergency. This helicopter is based in Los Angeles County at Long Beach.

Air Transportation - Needs

The County's air resources are not completely integrated into the Emergency Medical Services System. Currently there is a need to accumulate sufficient data to identify these resources and to establish a better communication link to integrate these resources into the EMS System so that they can be dispatched expeditiously, according to need.

Secondary Transportation - Current Status

Secondary transportation within the region occurs in two situations;

1. Transfer of patients from State licensed hospitals to Basic emergency facilities.
2. Transfer from State licensed Standby or Basic emergency facilities to regional critical care units, e.g., burn and high risk infant.

Some secondary transports are performed by a specialized team of physicians and nurses using ground mobile intensive care units and occasionally by helicopter or fixed wing air ambulances for the following critical conditions:

1. High-risk infants
2. Drug overdose
3. Severe burns
4. Spinal cord injuries
5. Cardiac injuries
6. Trauma
7. Poisonings

Selective medical cases are also accompanied by a physician or nurse on ground mobile intensive care units from basic emergency facilities to regional critical care units.

Secondary Transportation - Needs

Secondary transport vehicles are presently being provided by the commercial ambulance industry. There is a need to develop specific transport staff, either critical care personnel or specially trained transport personnel to insure that critical patients receive the optimum care enroute to the critical care center. There is also a need to develop transfer protocols, transfer equipment and communications with critical care centers to insure that critical patients arrive at the facility best equipped to provide the specialty care required.

Secondary transport by helicopter is also available, but it will be essential to establish a heliport at each critical care center if this mode of

transport is to be thoroughly integrated into the EMS system.

Advanced Life Support Services - Current Status

There are currently 36 mobile intensive care (MIC) paramedic units in operation in the region. The vehicles utilized are one-ton vans, equipped to meet county specifications which are consistent with DOT ambulance specifications. MIC vehicles can be used to transfer patients, however, commercial ambulances are most often used to transport the ill and injured from the scene of an emergency to the emergency receiving center and for inter-hospital transfer of patients. During 1977, paramedics treated a total of 36,692 patients of which 20,987 (53%) received some level of advanced life support. (See Tables 20 - 23). Currently the local (city) fire departments are in the process of developing mutual aid agreements and boundary drops. Two formal agreements exist currently, thus assuring that paramedic services would not be affected by political boundaries.

Advanced Life Support Services - Needs

There is a need to identify hospitals with specific critical care capabilities so that critical patients can be transported to the nearest, most appropriate facility.

BROAD OBJECTIVE

The broad objective of this component is to insure that adequate transport capabilities for the basic, advanced and critical care systems are available region-wide.

Specific Objectives

1. DEVELOP A RESOURCE ALLOCATION PLAN FOR EMERGENCY AMBULANCE SERVICES, INSURING 24-HOUR AVAILABILITY BY JULY 1978.

TABLE 20

PARAMEDIC OPERATIONAL AREAS

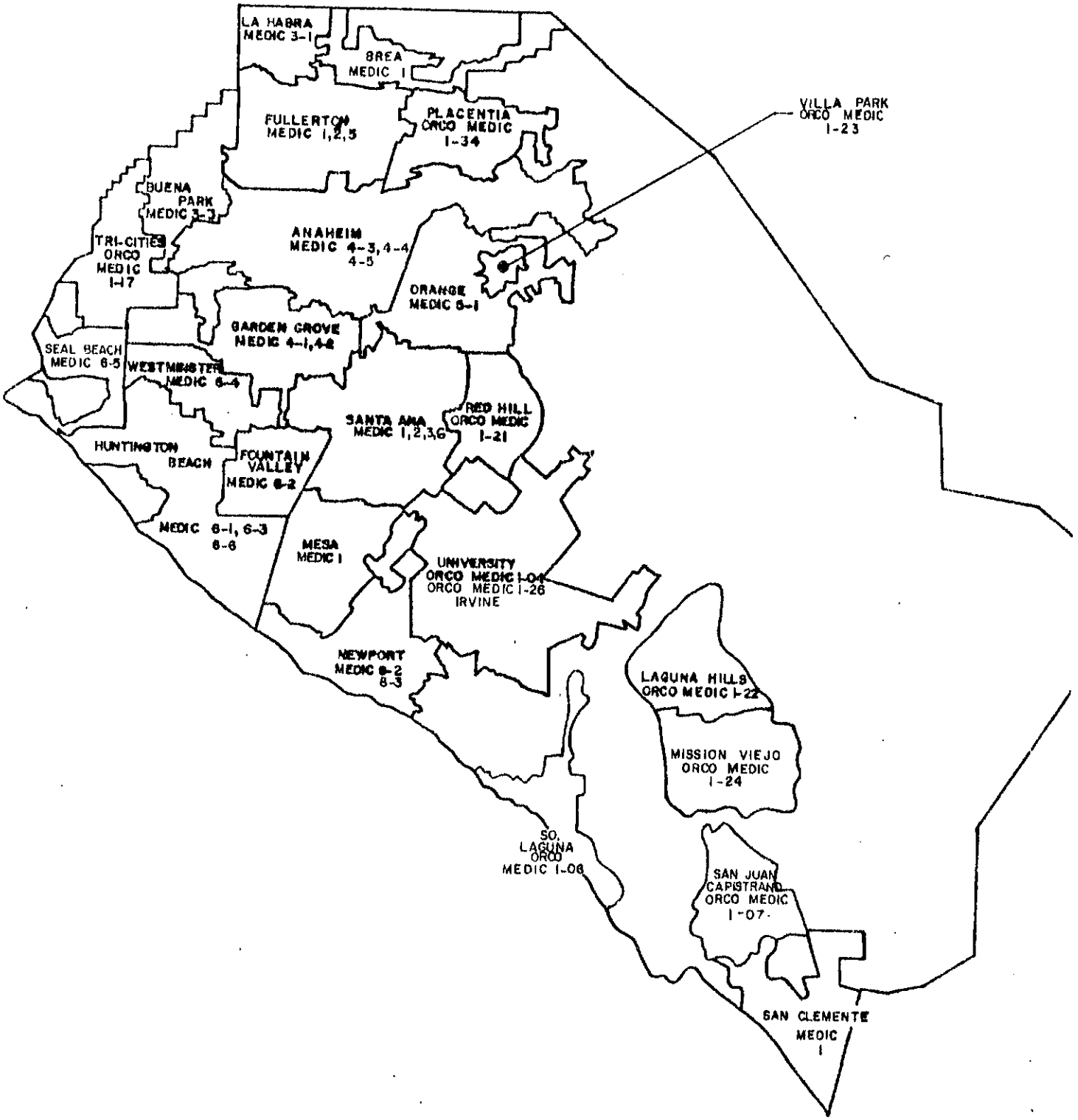


TABLE 21

COMPARISON OF PARAMEDIC UNITS WITH POPULATION SERVED IN INCORPORATED AREAS - April 1977

Cities	Sq. Mi.	1976	1981(Proj)	No. MIC Units	MIC Service Provider	Date MIC Unit Oper.	Transport Policy	Service Charge
Anaheim	39.9	198,576	225,947	3	AFD	5/76-1/77	MICU or Pvt.	0
Brea	9.6	22,591	32,165	0	0			
Buena Park	10.5	65,812	71,019	1	BPFD	1/76	Pvt. Am.	0
Costa Mesa	15.1	82,423	90,814	1	CMFD	9/75	" "	0
Cypress	6.3	45,549	47,396	1	CFD	3/75	" "	0
Fountain Valley	9.6	50,069	54,328	1	FVFD	3/75	" "	0
Fullerton	22.1	98,961	109,878	2 (1)	FFD	8/74	" "	0
Garden Grove	17.7	129,672	133,245	2	GGFD	3/75-1/76	" "	0
Huntington Bch	26.8	158,085	174,868	2	HBFD	7/73-6/75	" "	0
Irvine	40.5	42,354	90,339	2	CFD	1/76-5/77	" "	0
Laguna Beach	5.2	18,053	19,170	0	CFD	1/77	" "	0
La Habra	6.3	38,873	42,731	1	LHFD	7/73	MIC Unit	$25
La Palma	1.6	11,809	12,749	0	CFD	3/75	Pvt. Am.	0
Los Alamitos	4.3	16,668	18,416	0	CFD	3/75	" "	0
Newport Beach	15.4	63,165	72,628	2	NBFD	9/75-5/77	MICU or Pvt.	0
Orange	17.0	87,083	108,475	1	OFD	7/73	Pvt. Am.	0

TABLE 21

Comparison of Paramedic Units with Population
served in Incorporated areas - April 1977 (cont.)

Cities	Sq.Mi.	1976	1981(Proj)	No.MIC Units	MIC Service Provider	Date MIC Unit. Oper.	Transport Policy	Service Charge
Placentia	6.6	29,294	32,214	1	CFD	6/75	Pvt. Am.	0
San Clemente	14.6	19,967	27,350	0 (2)	0	1979	City	0
San Juan Capis.	13.0	17,644	22,895	1	CFD	9/76	Pvt. Am.	0
Santa Ana	27.1	183,296	193,759	4	SAFD	2/74	MIC Unit	$24-35-50
Seal Beach	11.9	26,036	28,096	1	SBFD	4/77	Pvt. Am.	0
Stanton	3.0	19,596	20,481	0	GFD/GGFD	7/1/77	City & Pvt.	$100 - nonresidents
Tustin	4.5	60,844	65,150	1	CFD	3/75	" "	0
Villa Park	2.8	7,403	7,975	1	CFD	5/76	" "	0
Westminster	10.7	69,073	69,765	1	WFD	6/75	" "	0
Yorba Linda	6.6	26,746	44,747	0	CFD	6/75	" "	0

Total 348.7 Sq. Mi.

1. Primary or additional unit in training
2. Planned - not yet in training

TABLE 22

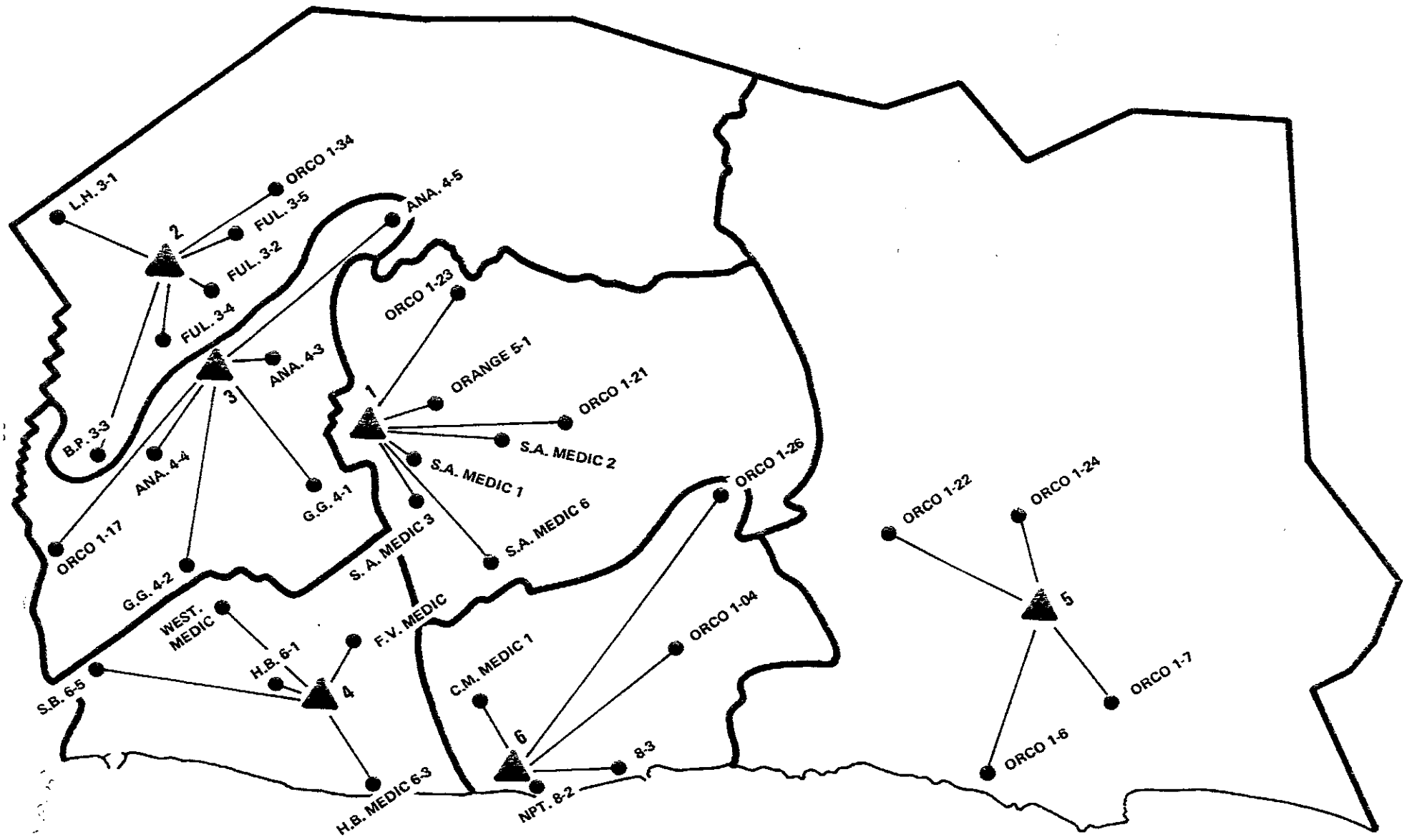
COMPARISON OF PARAMEDIC UNITS WITH POPULATION SERVED
IN UNINCORPORATED AREAS OF ORANGE COUNTY - April 1977

Unincorp. Areas	1976 POP.	1981(Proj)	No. MIC Units	MIC Service Provider	Date MICU Operational	Transport Policy	Service Charge
Capistrano Beach	3,949	4,069		OCFD	9/76	Pvt. Am.	0
Dana Point	4,474	8,030		OCFD	1/77	" "	0
El Toro	12,942	17,902		OCFD	7/73	" "	0
Laguna Hills	25,668	29,084	1	OCFD	7/73	" "	0
Laguna Niguel	14,184	19,439		OCFD	9/76	" "	0
MCAS	3,799	3,799		OCFD	7/73	" "	0
Mission Viejo	42,279	65,054	1	OCFD	9/76	" "	0
Moulton	8	10,841		OCFD	9/76	" "	0
Ortega	468	1,681		OCFD	9/76	" "	0
Rossmoor	13,371	13,843		OCFD	3/75	" "	0
Saddleback	22	9,970		OCFD	9/76	" "	0
Silvarado	1,138	2,321		OCFD	5/76	" "	0
South Laguna	2,817	3,192	1	OCFD	1/77	" "	0
S. County Canyons	1,333	2,678		OCFD	7/73	" "	0
County Total	1,722,094	2,008,500					

Total Area 437.3 Square Miles

TABLE 23

ORANGE COUNTY BASE STATION HOSPITALS WITH PARAMEDIC UNITS



1. University of California Irvine, Medical Center
2. St. Jude Hospital
3. Anaheim Memorial Hospital
4. Huntington Intercommunity Hospital
5. Mission Community Hospital
6. Hoag Memorial Hospital

Implementation

Within the scope of the new County Ambulance Ordinance, OEMS will work with the Ambulance Association and the Transportation Subcommittee of the Emergency Medical Care Committee, to develop rules and regulations for zoning of emergency response ambulances. The Transportation Subcommittee will meet to designate geographical boundaries which will be designed to insure adequate response times. Staff will assist in developing dispatching protocols. These recommendations will become part of the Ambulance Ordinance.

2 IMPLEMENT THE ADOPTED COUNTY AMBULANCE ORDINANCE INSURING PROPER OPERATING REGULATIONS AND EQUIPMENT REQUIREMENTS ARE MET.

Implementation

Regulations establishing standards meeting the standards of the American College of Surgeons and other federal agencies will be developed by the Transportation Subcommittee of the Emergency Medical Care Committee and adopted by the Board of Supervisors.

3. PURCHASE AND INSTALL 75 RADIOS IN ALL AMBULANCES OPERATING IN THE COUNTY BY FEBRUARY 1979.

Implementation

A grant from the Office of Traffic and Safety for the funding of UHF radios for ambulances in the County has been applied for and approved. Operating protocols for the use of these radios will be developed in cooperation with Orange County Communications in 1978.

4. DEVELOP A PRE-HOSPITAL PATIENT INFORMATION-GATHERING FORM THAT IS UNIFORM THROUGHOUT THE COUNTY.

Implementation

By January 1979, the Evaluation Specialist, working with Ambulance companies will design a standard patient care form that is compatible for all private ambulance companies in the County. This form will be compatible with the ALS patient form so that a complete system of gathering is in place for the pre-hospital phase.

5. DEVELOP A MECHANISM FOR SPECIALIZED CRITICAL CARE TRANSPORT OF PATIENTS FROM RECEIVING CENTERS TO THE APPROPRIATE TERTIARY CARE CENTER.

Implementation

The EMS Coordinator, working with the Critical Care Consultants and the Medical Director will assess and develop a system for inter-hospital transfer of critical care patients to appropriate treatment centers, (i.e., Burn Center, Neonate ICUs, etc.). Treatment protocols will be established and will include:

a) Sending staff from the appropriate specialty center to accompany the patient

b) Listing of proper equipment on the transfer vehicle.

c) Treatment protocols during transportation.

d) Treatment protocols for preparation of the transfer patient.

These protocols will be made part of the specific Critical Care Plans so that total medical input is received during the reviewing process.

FACILITIES AND CRITICAL CARE FACILITIES

Broad Goal

Provide access to emergency medical facilities and specialized critical care facilities which provide service on a 24 hour per day, seven day per week basis and meet appropriate standards relating to capacity, location, personnel, and equipment and are coordinated with other health care facilities in the system.

Current Status

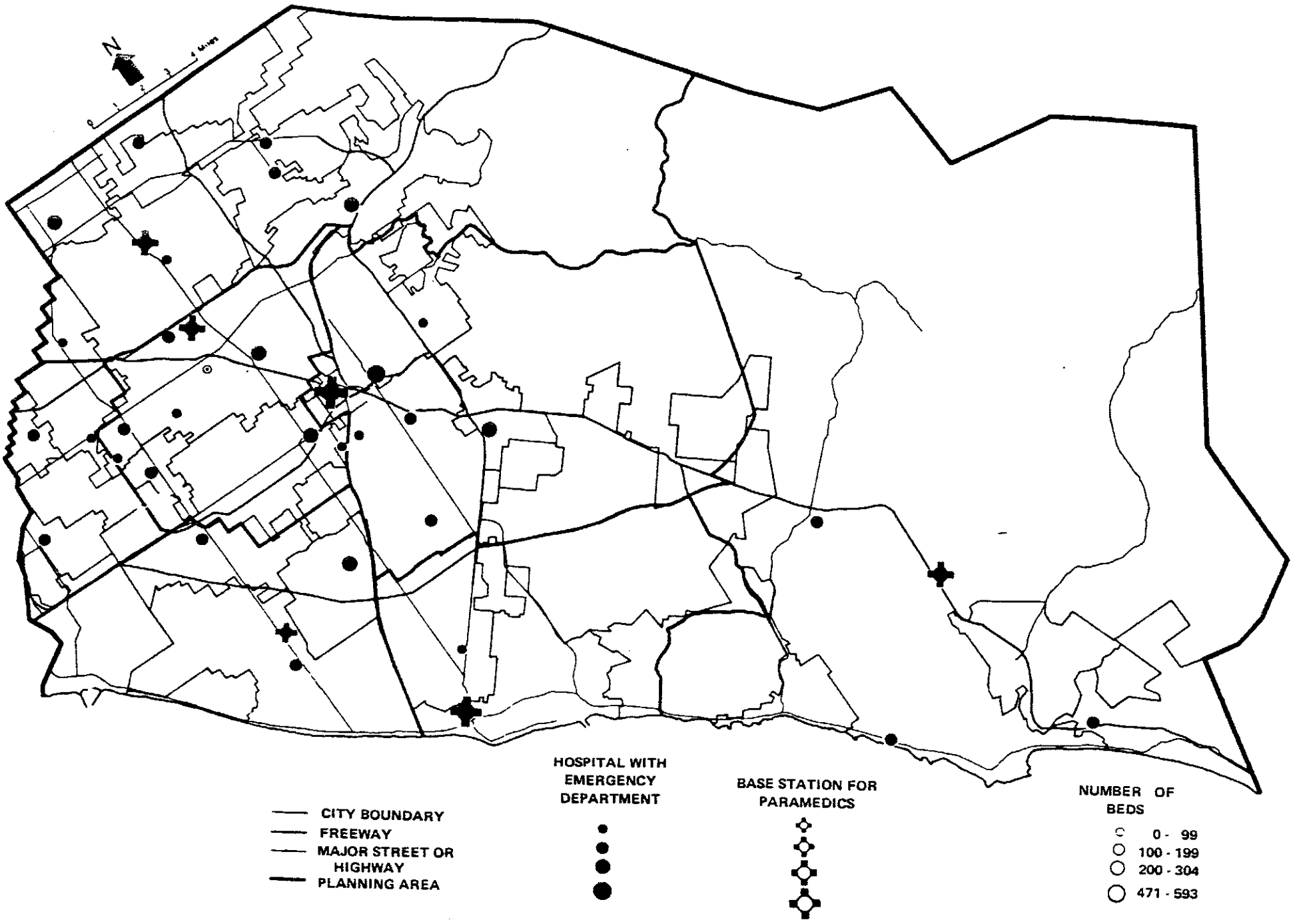
At present the region appears to have an adequate number of hospital facilities to meet the needs of its residents and the seasonal tourist population. There are 39 General Acute Care Hospitals with an average occupancy rate of 54%. The existing hospitals in the region are well dispersed throughout the County and it appears that no additional ones are needed. (See Table 24).

There are two broad methods of categorizing hospitals, horizontal and vertical. Horizontal categorization is the identification of hospitals based on their ability to meet the needs of the emergent and the non-emergent patient. Vertical categorization is the identification of hospitals' specific ability to meet the needs of patients with specific critical emergency problems; i.e., burn, poison, cardiac, trauma, high risk infants, psychiatric, etc.

Hospitals in Orange County have been categorized horizontally according to their ability to provide emergency medical care. This method of categorization is based on the provisions of the California Administrative

TABLE 24

HOSPITAL EMERGENCY SERVICES



Code - Title 22. Title 22 provides for a three-level classification system: Comprehensive Emergency Facility, Basic Emergency Facility and Standby Emergency Facility. In Orange County, hospitals meeting the Basic Emergency Facility criteria have been designated as Paramedic Receiving Centers. These hospitals meet the following criteria, in addition to other requirements:

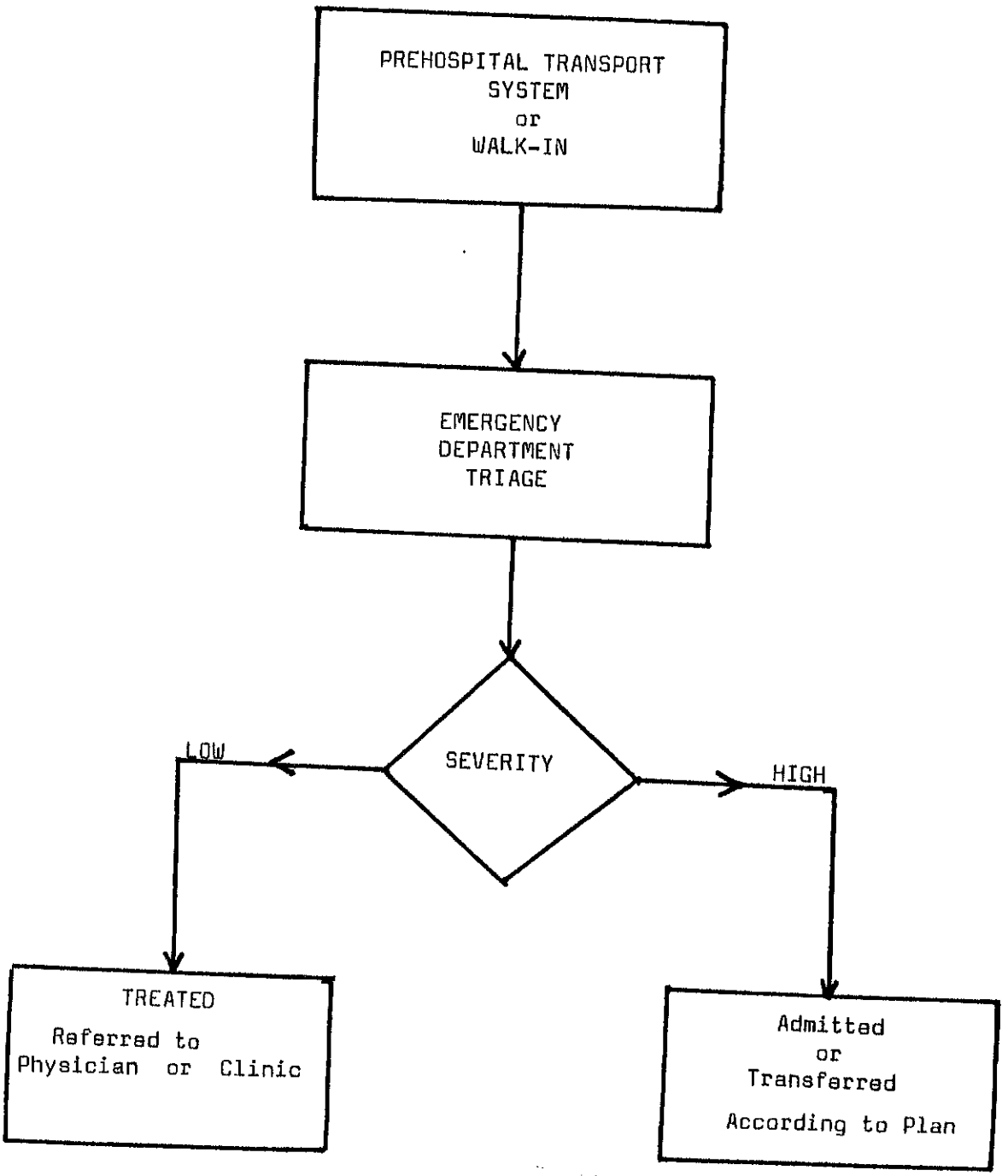
1. 24-hour emergency room physician coverage and a registered nurse present in the emergency department at all times.
2. A specialty panel of on-call physicians.
3. An Intensive Care Unit staffed 24 hours per day.
4. A Coronary Care Unit staffed 24 hours per day.
5. 24-hour laboratory, blood and x-ray capabilities.
6. Participation in the Hospital Emergency Administration Radio (HEAR) Net, linking all hospitals.

In the pre-hospital phase of emergency care, patients arrive at hospitals by using the pre-hospital's emergency transport system or their own means of transportation (See Table 25). A recent survey shows that 11% of the emergency room patients arrive by ambulance, 8% by paramedics, and 81% arrive by their own transportation. In the case of persons arriving by ambulance, the system operates as follows:

1. If the patient's condition requires paramedic services from the scene of the emergency, the Base Station Hospital provides medical direction and the patient is transported to the nearest hospital Receiving Center (Basic Hospital Services) where his needs are immediately assessed. If the patient requires

TABLE 25

GENERAL EMERGENT & NONEMERGENT PATIENT



a higher level of care not available at the Receiving Hospital, the patient is stabilized and transferred to a referral center, using the existing secondary inter-hospital transport resources.

2. For emergency patients arriving independently at hospitals in the region, the treatment procedure is essentially the same. Most patients, 95%, can be effectively treated at the Receiving Center Hospital, all of which are categorized as Basic. For the small percentage of critical care patients requiring treatment at specialized critical care centers, they are stabilized and transported, sometimes by a specialized medical team (Neonates) who come from the regional care center, to provide care enroute.

Vertical Categorization

Medical emergencies happen in very specific ways, i.e., heart attack, severe burn, spinal cord injury, poisoning, etc. These critically ill patients have very specific clinical needs and therefore need specialized personnel and resources to meet these needs. "horizontal" categorization as described (Basic Emergency Facility, Standby, etc.) does not identify a hospital's specific capability to deal with these critical patient groups. "Vertical" categorization will identify the specific capabilities a hospital has to care for critical patients.

Orange County, in conjunction with critical care consultants, physicians, and advisory committees, is currently developing a process for categorization.

There are a number of cirtical care units in the region. These include a Regional Burn Center with 13 beds, two high-risk infant special care centers with 30 beds, a Poison Information Center and several acute alco-

hol and psychiatric facilities. During the next five years this component will receive the highest priority in implementing a system of care for all critical care patients with a special focus on cardiacs, burn, trauma, poisonings, CNS injury, psychiatric, and infant and small child emergencies. Physician advisory panels for each of the above conditions have been organized and a critical care consultant is under contract to assist in the development and implementation of each of the individual plans for the management of critical care patients. (See Table 26.)

The status and needs of each of these critical care areas are as follows:

POISON

Current Status

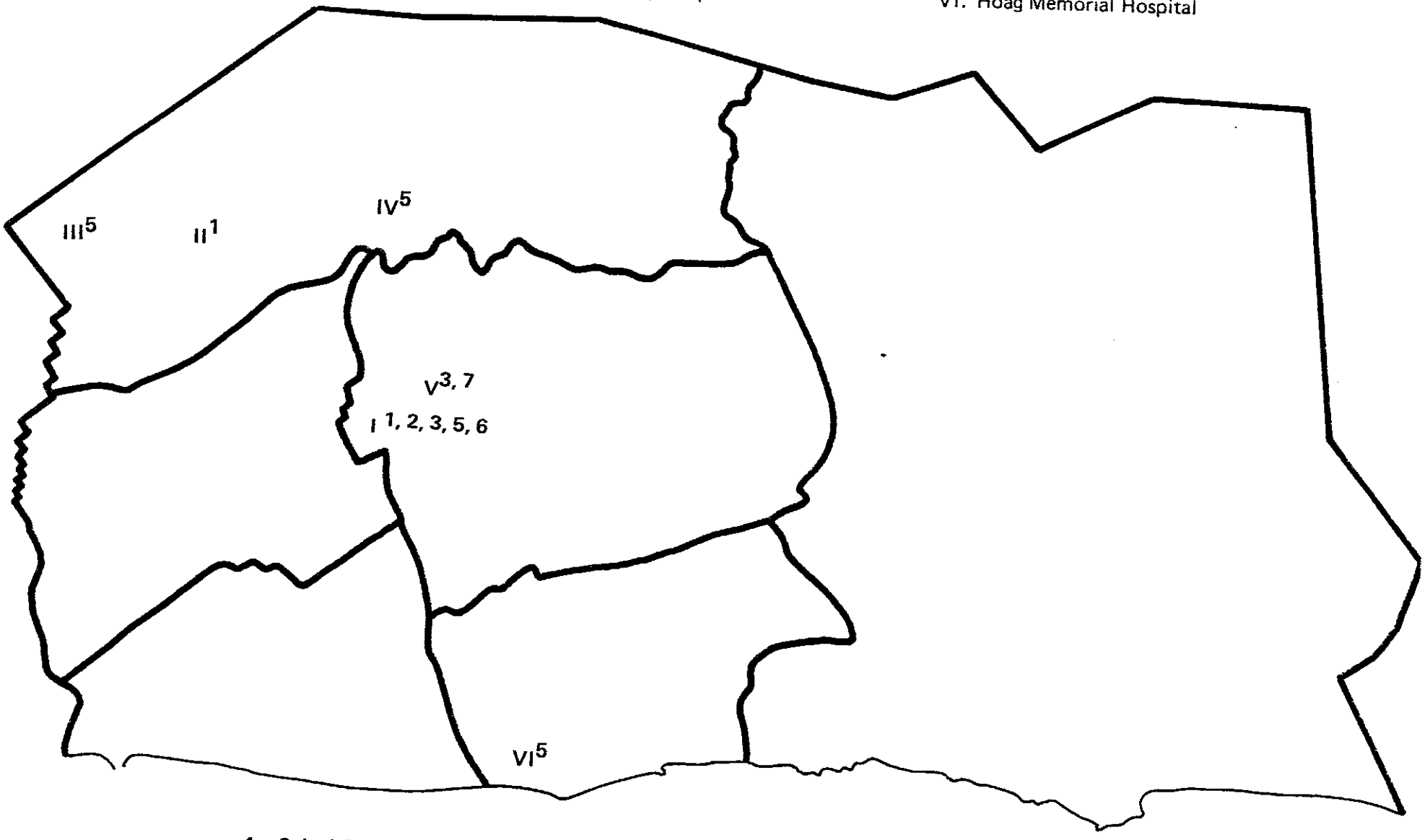
Orange County has a Poison Information Center at UCI Medical Center which has been operational for six years and has provided an excellent quality of service within its limited scope of operations and funding. It is directed by David Schapiro, Pharm.D., and is a program of the Pharmacy Department. This Poison Center is the only public information source in Orange, Los Angeles, San Bernardino and Riverside Counties.

The center is located in an area of the outpatient pharmacy. Calls are handled on a 24-hour basis by well trained pharmacists whose primary role is to perform other pharmacy duties between calls. At present there is no medical director nor is there a specific medical department (internal medicine or pediatrics) that has responsibility for the center.

TABLE 26

ORANGE COUNTY CRITICAL CARE CENTERS

I. University of California Irvine, Medical Center
II. St. Jude Hospital
III. La Habra Community Hospital
IV. Canyon General Hospital
V. Childrens Hospital - St. Joseph
VI. Hoag Memorial Hospital



1. Spinal Cord Injury Center
2. Burn Care Center
3. Neonatal Intensive Care Center
4. Trauma Center
5. Psychiatric Center
6. Poison Center
7. Alcohol Detoxification Center

Critically ill poisoned patients are admitted to adult or pediatric intensive care units. There are no specifically operational protocols for consultation on these poisoned patients. The full range of quantitive toxicology is not yet available at UCI.

During 1977 the Center received approximately 14,000 calls, 40% of which were from professionals and 60% were from the public. Approximately 50% were classified as emergency calls and 50% were informational calls from the public.

Experience from newly developed regional poison centers serving the same population base indicate that approximately 35,000 calls should be received by the center. Approximately 70% of these calls are from the public. An effective poison center can provide this non-critical but potentially ill category of patient with immediate interventive first aid with removal of the toxic substances before symptoms appear.

Critical Care Center

UCIMC - Poison Control Center

Needs

There is a need to expand the existing Poison Information Service to a Regional Poison Care System which includes a Regional Poison Center meeting National standards.

1. Specialized medical consultation capability needs to be developed on a 24-hour basis at the Poison Center. The need for and the availability of this consultation service to all professionals treating poison patients must be disseminated.

2. National experience from implemented regional poison systems indicates that a fully operational poison center receives

approximately 30,000 calls/million population per year. 85% of these calls can be managed over the telephone with appropriate medical consultation and appropriate staffing. The University of California Irvine Poison Information Center presently receives between 14 and 15 thousand calls/year. There is a need to develop the necessary staffing, medical direction and public information to bridge this gap and meet the needs of this category of patient.

3. There is a need to categorize poison patients according to severity, define their clinical needs and the resources to meet those needs.

4. Specialized care capabilities (renal dialysis, charcoal hemoperfusion, pediatric intensive care, endoscopy, comprehensive quantitative toxicology, laboratory) need to be identifed so that appropriate referrals can be made by the Regional Poison Center to these resources.

5. Operational protocols for patient assessment, management and referral need to be developed for use at the regional Poison Center.

6. Education in the assessment and initial management of the poisoned patient for all manpower groups (prehospital, emergency department and hospital) is needed.

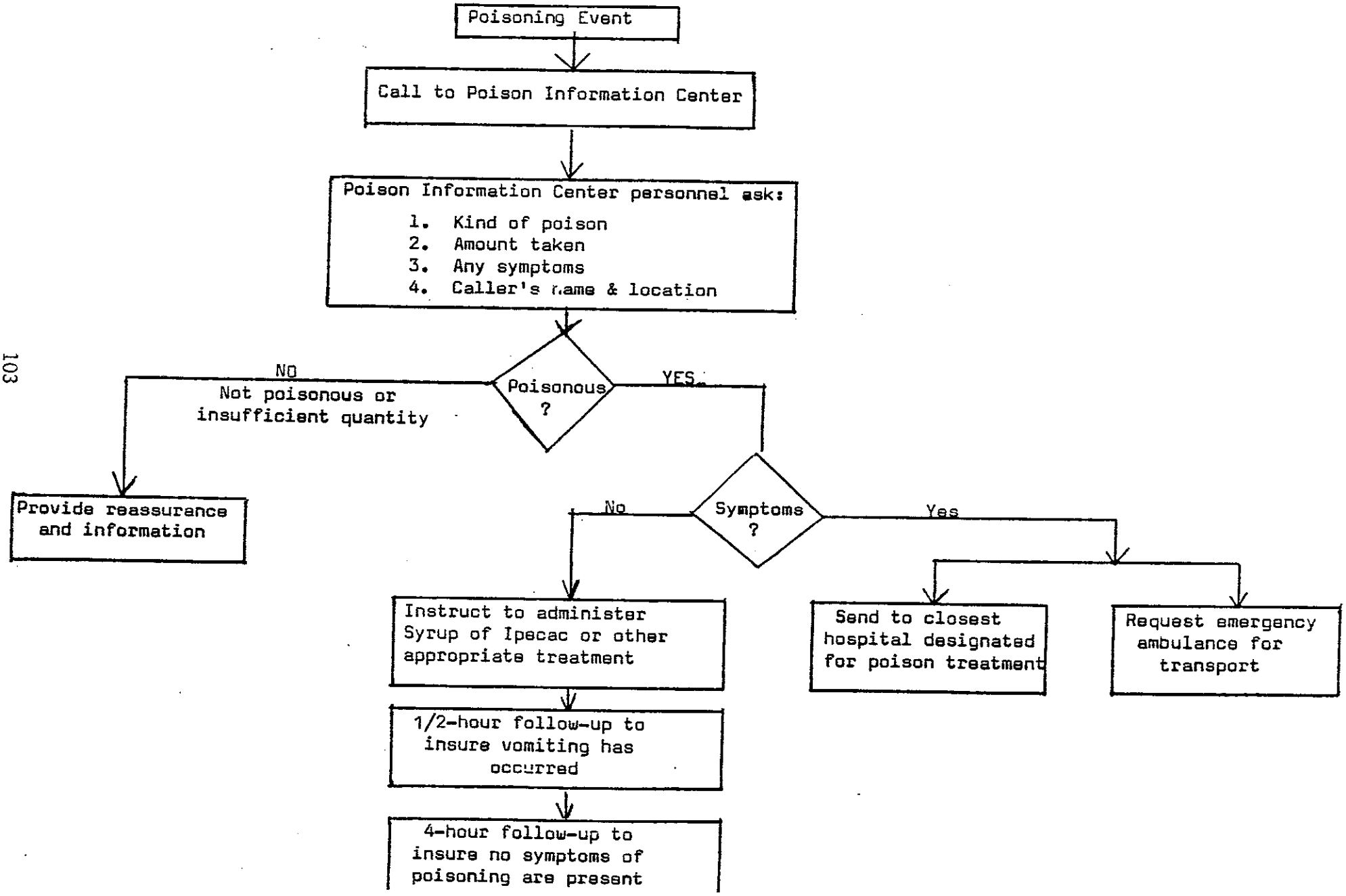
7. An aggressive public education program in poison center access, initial first aid for poisonings, need for syrup of Ipecac in the home and prevention measures is much needed.

8. There is a need to coordinate with the State Emergency Medical Services office in the development of a statewide poison plan and designation of poison regions and centers to serve those regions.

TABLE 27

PROPOSED OPERATIONAL PLAN

ORANGE COUNTY POISON INFORMATION CENTER



HIGH RISK INFANTS

Current Status

Presently in Orange County there are two licensed infant intensive care facilities: Children's Hospital of Orange County (CHOC) and University of California at Irvine Medical Center (UCIMC). Combined, these facilities had 1,240 admissions to their infant ICU's during 1976. Both units provide high risk infant transportation from other hospitals to their facility.

At present there is no formal system of referral for transfer of high risk infants, small children or complicated pregnancies. It is believed that hospital transfer agreements, triage guidelines, and a formal transportation system for high risk infants and small children will result in a higher level of care for these patients. A plan for the care of infants and children has been developed by the pediatrics critical care committee.

It is proposed in the plan that the emergency care facilities for infants and small children in Orange County be designated as primary, secondary or tertiary. Primary care facilities will have as a minimum the ability to care for uncomplicated deliveries and the emergency care and stabilization of the premature infant. The secondary level facility will have immediate access to an intermediate care nursery. The tertiary care units will have in-house back-up ability to provide total care for all neonatal and pediatric problems.

In conjunction with the designation of facilities as primary, secondary or tertiary, a system of transfer protocols and transfer agreements is described.

Critical Care Centers

UCI Medical Center

Children's Hospital of Orange County

Needs

There is a need to implement the infant and small child critical care plan. As discussed above, there are two tertiary level treatment centers for high risk infants in Orange County. The designation criteria is completed and all that exists is the need for formal designation of these institutions. Once formal designation is completed, triage and treatment protocols will need to be implemented. A method of evaluating the effectiveness of the system in reducing morbidity and mortality needs to be established. In this way, system adjustments can be made to reflect needed changes.

BEHAVIORAL

Current Status

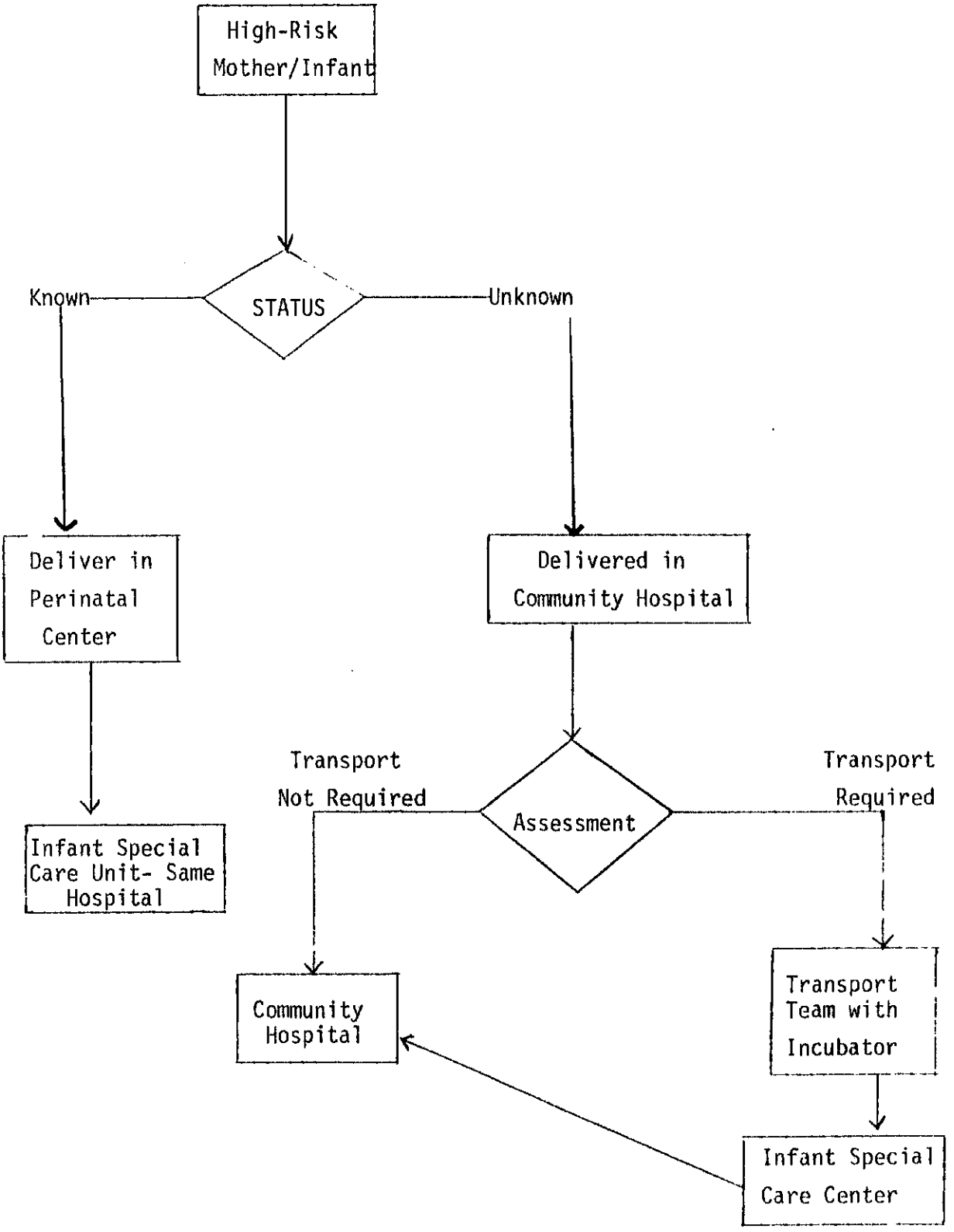
There is no organized system of care for the management of psychiatric, drug overdose and alcohol abuse emergencies in Orange County. There are institutions providing care for these categories of patients in the County but they have not been integrated into the EMS System as of this time. It is recognized that the integration of these resources into the EMS System is needed and every effort will be made during the project year to properly link these services with other system components.

A plan which is being developed for the management of psychiatric, alcohol and drug overdose patients will be implemented when completed. The

TABLE 28

PROPOSED FLOW CHART

FOR THE CARE OF THE HIGH-RISK INFANT



specialists in these fields will work cooperatively with the EMCC and other leaders in the medical community in the implementation of plans which will, when implemented, assure that patients requiring these categories of specialized services, have access to prompt and high level care. Treatment protocols and transfer mechanisms developed will provide medical control and insure that the patient receives care at the most appropriate facility.

Critical Care Center

At present there is no formal designation.

Needs

At the present time there is no formal system to deal with patients having psychiatric or alcoholic emergencies. The usual procedure is for these patients to have their medical or surgical emergency treated in a local paramedic receiving center. Then, if either the attending physician or the law enforcement officer feels the patient is a danger to himself or others the patient can be detained for 72 hours under Section 5150 of the Welfare and Institution code. Those patients detained under this section are usually transported to the University Medical Center Psychiatric Unit or other designated centers where a psychiatric evaluation is done.

There is a need to develop a formal system for the treatment of these patients, thus assuring that proper treatment is afforded to all persons in need of psychiatric care.

SPINAL CORD

Current Status

Currently, Orange County has two acute care facilities with associated rehabilitation centers. These two centers, combined, have 18 acute and 51 rehabilitative spinal cord injury beds. These centers reported 47 spinal cord injuries from July 1976 through June 1977. Current tracer group studies indicate there will be approximately 84 spinal cord injuries per year in Orange County.

The current practice for patients with spinal injuries is to transport them to the nearest Receiving Center and then, after stabilization, transfer them to a rehabilitation center.

Critical Care Center

At this time none have been designated.

Needs

As discussed above, there are no formal protocols for the treatment of patients with spinal cord injuries. OEMS is presently meeting with the Neurosurgical Society in an effort to determine the need for changes and defining definite protocols to be followed for the patient with spinal cord injuries.

BURN INJURIES

Current Status

During 1977 there were 297* major burn patients in Orange County. At present there is only one designated Burn Center in the County. This

*Major burn is considered any burn requiring hospitalization for more than two weeks.

Center is located at the University of California, Irvine, Medical Center (UCIMC). The center has 13 beds, eight burn intensive care beds and five for intermediate care. The current occupancy rate is 92%. Approximately 400 patients annually are treated on an outpatient basis. At present, there is no formal policy for the transfer of patients from the field or the various Receiving Centers to the Burn Center.

Critical Care Center

UCI Medical Center

Needs

A plan for the triage and treatment of burn victims has been developed. There is a need to implement the plan and educate all EMS personnel in the proper treatment and triage of burn victims.

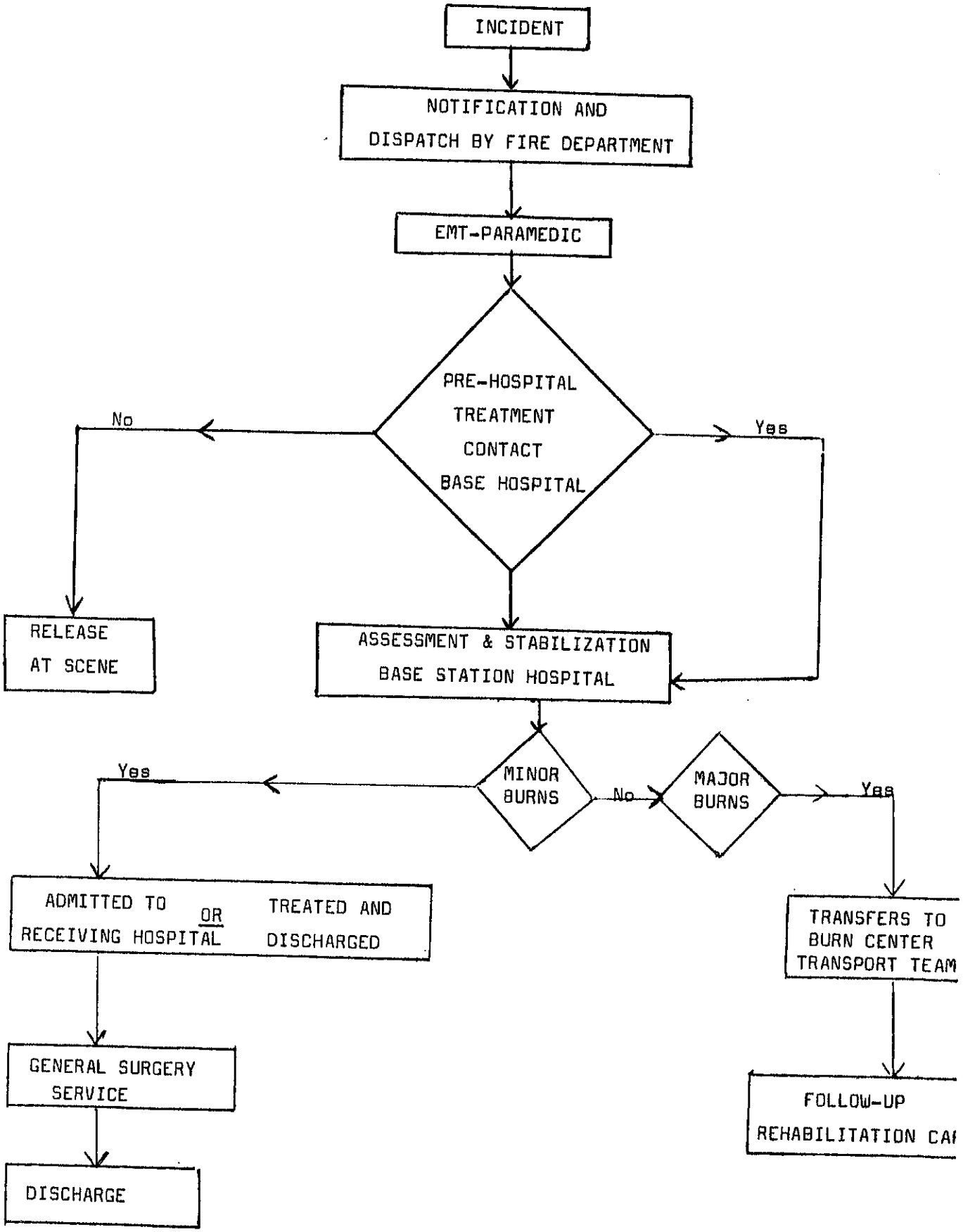
CARDIAC EMERGENCIES

Current Status

Orange County has established a very effective Paramedic Advanced Life Support System for pre-hospital care. These paramedics are highly trained in advanced cardiac life support. In an effort to assure a continued high level of care after arrival at a hospital, a system of certifying hospitals has been developed. Hospitals which qualify are certified as Paramedic Receiving Centers. These hospitals have shown a high degree of ability to continue cardiac care at an appropriate level.

TABLE 29

PROPOSED FLOW CHART FOR MANAGEMENT OF BURN PATIENT



Critical Care Center

Currently all Paramedic Receiving Centers qualify.

Needs

A system of care for cardiac victims was approved by the EMCC in May 1978. This system will include designation of regional centers, a secondary transport system and emergency department physician training in ALS. There is a need to implement this plan. E. R. physicians should be given ample time to obtain this training. A sufficient number of these ALS courses need to be made available.

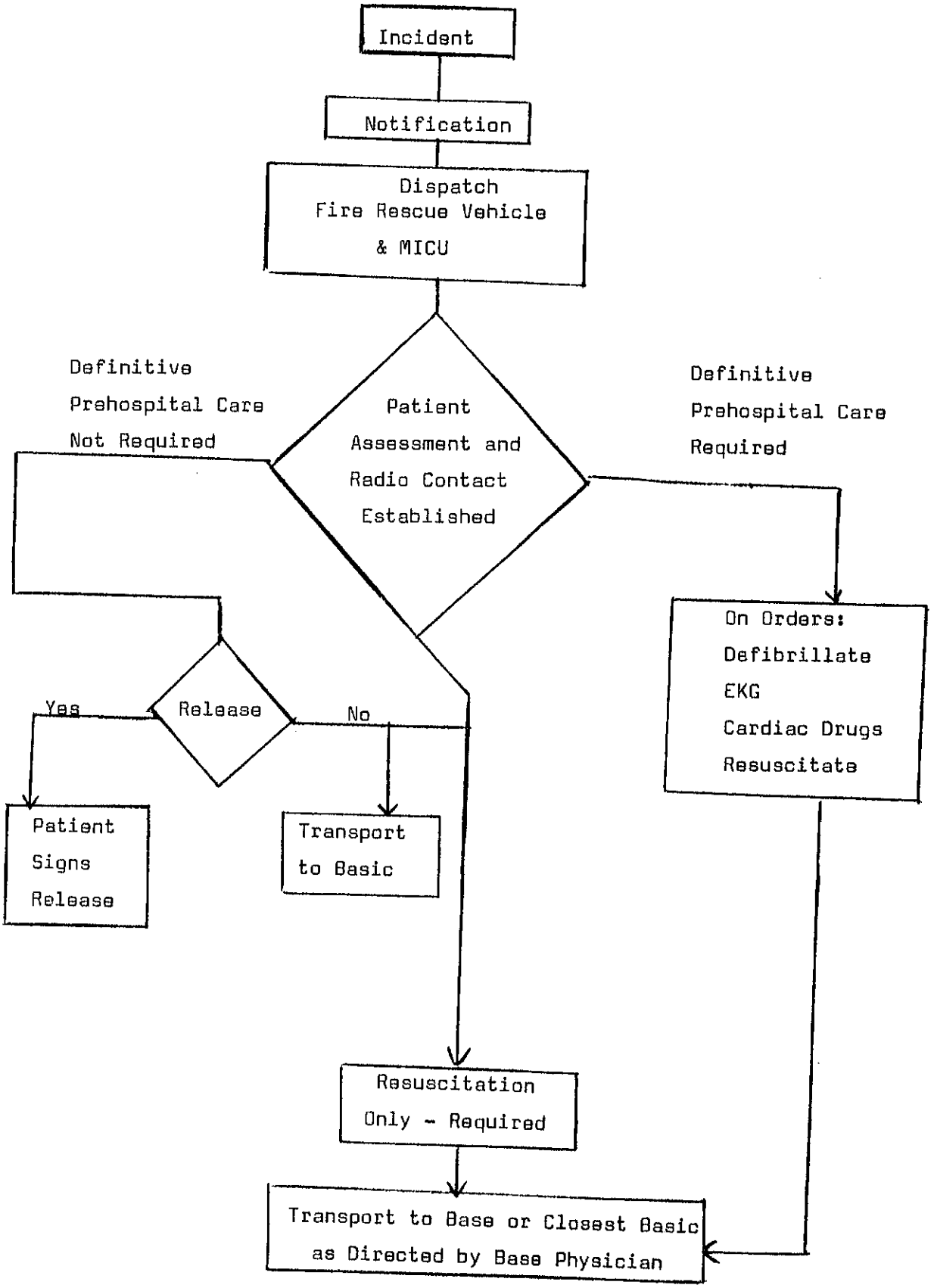
TRAUMA

Current Status

At the present time there is no formal system for the treatment of trauma patients. Currently in the pre-hospital phase these patients are treated by advanced life support teams. Paramedics receive instructions from Base Station physicians and transport the trauma victim to the nearest Receiving Center. There are no hospitals in Orange County that presently meet the American College of Surgeons standards for optimal intermediate care of the seriously injured patient. The Trauma Committee of the OEMS is developing a plan for the appropriate care of trauma patients in the region. The committee will develop criteria for identification of optimal care for critically injured patients.

TABLE 30

PROPOSED FLOW CHART FOR
CARDIAC - ADVANCED LIFE SUPPORT



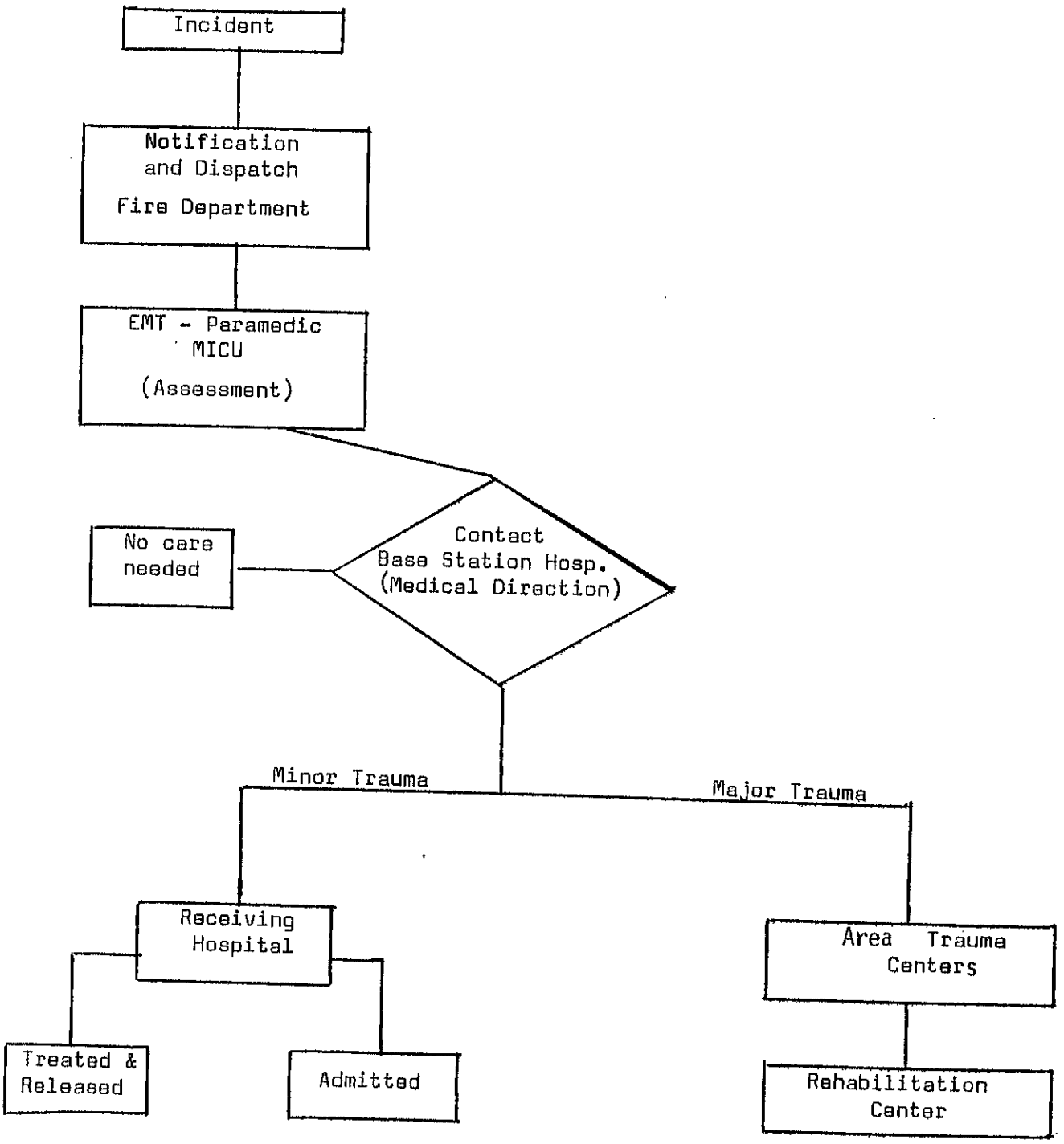
Needs

There is a need:

1. To assess the critically injured trauma patients' needs.
2. To assess the existing capabilities to meet these patient care needs.
3. To develop designated resources geographically dispersed across the County to provide optimal care for the critically injured.

TABLE 31

PROPOSED FLOW CHART
FOR MANAGEMENT OF THE TRAUMA PATIENT



SPECIFIC OBJECTIVES

OBJECTIVE ONE

COMPLETE THE VERTICAL CATEGORIZATION OF THE REGION'S HOSPITALS

Implementation:

As each critical care plan is completed and approved, hospitals will be peer surveyed to determine their level of capability in a specific critical care category, based on criteria in the plan. Formal designation of capability level by the EMCC will follow the survey process.

OBJECTIVE TWO

IMPLEMENT TRANSFER AGREEMENTS BETWEEN PARAMEDIC RECEIVING CENTERS AND THE VARIOUS CRITICAL CARE INSTITUTIONS AS THEY ARE DESIGNATED.

Implementation:

Transfer agreements will be made part of each critical care plan. As the plans are approved and the various centers designated, agreements will be established between the Paramedic Receiving Centers and the Critical Care Centers. This will then assure that patients with specific critical problems will be transferred to the appropriate centers under appropriate monitoring care.

OBJECTIVE THREE

ASSURE THAT PROPER TRANSPORT MECHANISMS ARE AVAILABLE ON A TIME BASIS FOR TRANSFER OF PATIENTS TO THE DESIGNATED REGIONAL CRITICAL CARE FACILITIES.

Implementation:

The OEMS will work with the Critical Care Facilities and private ambulance providers and the medical community to design and develop a critical care

transport system that will assure proper medical control and care of all patients being transferred between or to Critical Care Centers.

OBJECTIVE FOUR

REVISE THE PARAMEDIC RECEIVING CENTER DESIGNATION CRITERIA.

Implementation:

The OEMS staff will work with a task force appointed by the Facilities Subcommittee to update the criteria for the designation of Paramedic Receiving Centers. This criteria will be updated on a continual basis to keep current with accepted medical practices. As major changes are made in the criteria, survey teams will be appointed to re-survey each hospital to assure compliance with the new criteria.

OBJECTIVE FIVE

MAINTAIN A FORMAL SYSTEM OF MEDICAL CONTROL.

Implementation:

The OEMS will continue to have an EMS Medical Director and Physician Critical Care Consultants. The Medical Director, working with the Physician Critical Care Consultants,will be responsible for seeing that all phases of the system are medically sound and accountable.

OBJECTIVE 6

ASSIST IN THE DEVELOPMENT OF A REGIONAL POISON CENTER WHICH MEETS NATIONAL AND STATE STANDARDS.

Implementation

1. Work with State EMS Office to
   a) define statewide poison regions

b. designate UCI as a Regional Poison Center

c. create a State funding mechanism

2. Work with UCI Medical and Administrative staffs to develop implementation strategy and some matching funds.

OBJECTIVE SEVEN

IMPLEMENT THE TREATMENT PROTOCOLS FOR PRE-HOSPITAL EMERGENCY DEPARTMENT AND INTER-HOSPITAL CARE FOR THE SPECIFIC CRITICAL CARE CATEGORY PATIENT GROUPS.

OBJECTIVE EIGHT

ENCOURAGE THE DEVELOPMENT OF ALTERNATIVE CARE CENTERS FOR THE NON-EMERGENT PATIENTS.

Implementation:

The OEMS will provide input and technical assistance working with the local Health Planning Council in the development of a system of care for non-emergent patients.

COMPONENT VI

PUBLIC EDUCATION/INFORMATION

BROAD GOAL

The broad goal of this component is to educate the public in recognizing a medical emergency, in knowing about and accessing the EMS System, and in applying Basic Life Support measures.

CURRENT STATUS

The EMS Consumer Information and Education program for Orange County is still in a formative stage. An EMS Public Education Subcommittee only recently has been established to provide direction for County-wide efforts in this area. The EMS Public Education Division is currently staffed by a Program Specialist and four CETA funded Health Education Assistants. The Program Specialist works with the Subcommittee on Public Education, other health and EMS provider agencies and educational institutions to develop appropriate EMS materials and programs for the Orange County population. The four Health Education Assistants are highly skilled and certified Cardiopulmonary Resuscitation (CPR) Instructors who conduct courses at any location in the County in accordance with standards established by the American Heart Association. The EMS Public Education Division also participates in community health exhibits and programs, and is available for speaker presentations to local service organizations. OEMS is presently developing a three-dimensional exhibit which will require citizen participation to teach appropriate EMS System access in Orange County.

In order to assess Orange County's specific needs, the OEMS conducted a

survey to measure EMS awareness in Orange County. The survey instrument was designed to identify levels of EMS knowledge relative to:

a) recognition of medical problems,

b) system resources,

c) system access, and

d) provision of basic life support.

The OEMS then utilized the survey results in establishing objectives for the operation of the consumer information/education program.

NEEDS

To broaden the public exposure of EMS programs, the EMS Public Education Division needs to utilize the multitude of health-related professionals to disseminate EMS System information. At the present time, no organized program exists to educate these individuals about the EMS System, so that they in turn can educate the public they serve. Ongoing educational programs for these individuals are essential to continue public awareness of EMS.

No EMS System information or EMS-access materials are available to the above-mentioned individuals for distribution to their clientel.

Special EMS educational programs for the deaf and/or visually handicapped and non-English speaking populations are non-existent. In addition, there is no EMS-access information available to the over ten million tourists who visit Orange County annually.

Only fragmented and inadequate efforts are directed toward health promotion/illness and accident prevention programs. Though CPR and First Aid training programs are available to the public through the efforts of the Heart Association and Red Cross volunteers, isolated community hospital programs, and limited community college offerings, additional support and coordination are needed to more adequately serve high risk populations in the County.

The EMS awareness survey in Orange County demonstrated that the public's system awareness is limited to knowledge of the paramedics. Self-help techniques and appropriate system access are not generally known. Continuous distribution of EMS System information to Orange County residents is clearly needed.

At the present time, public use of the Poison Information Center generates 14,000-15,000 calls per year. Public education to increase awareness of this emergency resource must also address the need for poison prevention measures.

OBJECTIVES

In order to fulfill the needs of the System, the OEMS has established a number of objectives:

OBJECTIVE ONE

THE OEMS WILL CONDUCT COUNTY-WIDE EMS INFORMATION SEMINARS FOR MEDICAL SERVICES PROVIDERS, HEALTH-RELATED PROFESSIONALS, AND KEY CONSUMER GROUPS. THIS WILL BE DONE ON A PERIODIC BASIS TO ENABLE THEM TO KEEP ABREAST OF CHANGES IN EMERGENCY MEDICINE AND ASSIST THEM TO APPROPRIATELY EDUCATE THE PUBLIC THEY SERVE.

Implementation:

Education of medical services providers, other health-related professionals and key consumer groups is essential to the EMS Public Education program. The first seminar being planned is tentatively scheduled for September 1979, and will be co-sponsored by the Orange County Health Systems Agency. This seminar will feature presentations on the EMS System -- its purpose, history, functions, services and needs -- by local and regional EMS System experts. Approximately 300 health educators, school administrators, health agency

staff and volunteers, health professionals, city council members, news media representatives and other key consumer groups will be invited to attend.

OBJECTIVE TWO

DEVELOP AND DISTRIBUTE EMS SYSTEM INFORMATION AND ACCESS MATERIALS TO ORANGE COUNTY RESIDENTS.

Implementation:

The Public Education Division will design and publish two brochures; one on general EMS information and one on EMS access. Both will be made available in quantity to the individuals attending the EMS information seminar described above. Approximately 6000 brochures will be distributed initially, with additional brochures provided to these groups upon request.

In addition, the Public Education division will encourage use of the "Medic Alert" program by making Medic Alert brochures available to the 300 individuals attending the EMS Information Seminar.

If funds are available, OEMS will print and distribute copies of the Orange County Health Planning Council's Guide to Emergency Services. Distribution efforts will be directed toward Senior Citizen groups, retirement community residents and through local Parent-Teacher Organizations.

OBJECTIVE THREE

ASSESS THE INFORMATION NEEDS AND DEVELOP SPECIAL PROGRAMS FOR THE FOLLOWING SPECIAL POPULATION GROUPS:

A. DEAF AND/OR VISUALLY HANDICAPPED

B. NON-ENGLISH SPEAKING

Implementation:

The Public Education Specialist will meet with representatives of organizations for the deaf and/or visually handicapped, to assess their needs for EMS education. OEMS Health Education Assistants will teach CPR courses for the deaf, utilizing special interpreters. CPR courses for the blind will also be taught, utilizing CPR materials translated into Braille by San Diego EMS. The EMS access brochure will be distributed to these special population groups through their respective organizations.

Meetings will be held with non-English speaking groups to determine informational needs relative to EMS. Bilingual health personnel will be utilized to deliver community talks on EMS at community centers; in addition, they will teach CPR courses in Spanish. Translation of EMS materials into Spanish, Vietnamese, Laotian, or other languages as needed, will also be accomplished during the five year period. Translated EMS brochures will be distributed to the non-English speaking residents through their respective organizations.

OBJECTIVE FOUR

DEVELOP AND DISTRIBUTE EMS ACCESS MATERIALS FOR THE VISITOR/TOURIST POPULATION IN ORANGE COUNTY.

Implementation

Over 10 million tourists visit Orange County annually. Reaching a maximum number of these individuals will be accomplished in the following manner:

a. A mailing list of the 553 hotels, motels and campgrounds in the County will be purchased. Copies of the EMS access brochure will be distributed to the telephone switchboards at each of these locations.

b. The Public Education Specialist will meet with representatives of the four major auto rental agencies in the County (Avis, Budget, Dollar-Renta-Car and Hertz). Copies of the EMS access brochure will be made available to each of these agencies for continuous distribution to their clients.

OBJECTIVE FIVE

DEVELOP AND IMPLEMENT A MASS MEDIA CAMPAIGN TO INCREASE PUBLIC AWARENESS OF EMS.

Implementation:

OEMS will hire a professional Public Relations expert to develop and coordinate a comprehensive and continuous media campaign to insure broad exposure for ongoing EMS programs. The Public Relations expert will provide the feature articles, news releases and radio spot announcements to be used in the following media campaigns:

a. Feature articles on the EMS System will be provided to Orange County newspapers.

b. Radio spot announcements will be aired on Orange County radio stations.

c. News releases on pertinent EMS programs (i.e., health fairs, special CPR courses, etc.) will be provided to Orange County newspapers.

d. Participation in radio and TV "talk shows" will be coordinated by the Public Relations person. Local EMS System experts will be featured to provide information and receive public feedback.

OBJECTIVE SIX

DEVELOP AND IMPLEMENT A MASS MEDIA CAMPAIGN ON ILLNESS/ACCIDENT PREVENTION.

Implementation:

In addition to working with the Red Cross and the Heart Association, the Public Relations expert will work closely with representatives of the UCI Medical Center Burn Unit, the Poison Information Center and the Orange County Pediatric Society to develop a coordinated illness/accident prevention program for Orange County. Feature articles and radio spot announcements will be provided to increase public knowledge of emergency telephone numbers, accident prevention techniques and safety "tips".

OBJECTIVE SEVEN

INCLUDE EMS ACCESS INFORMATION IN ALL HEART ASSOCIATION AND RED CROSS CPR AND SAFETY PROGRAM COURSES.

Implementation:

OEMS is currently represented on the Emergency Medical Care/Safety Committees of the Heart Association and Red Cross. Through these committees, the Public Education Division will distribute EMS information/access materials to Heart Association and Red Cross instructors. These materials will also be made available to members of the Speakers Bureaus of these two agencies.

All instructors and speakers will be encouraged to include EMS access information in their presentations.

OBJECTIVE EIGHT

CONDUCT CPR TRAINING PROGRAMS FOR SPECIAL POPULATION GROUPS.

Implementation:

An aggressive, outreach CPR training campaign will utilize the four CETA funded CPR Instructors to conduct CPR courses for each of the following special populations:

a. Hotel personnel in the Disneyland vicinity;
b. Hotel personnel in other areas;
c. Employees in athletic surroundings (i.e., tennis clubs, racquetball clubs, golf culbs, etc.);
d. Ushers at major theatres and special community events (i.e., Anaheim Stadium, Laguna Beach Pageant of the Masters, etc.)

These courses will include EMS System access information, basic life support, prevention techniques and eventually will incorporate information regarding critical care facilities and procedures.

OBJECTIVE NINE

EVALUATE THE EMS PUBLIC EDUCATION/INFORMATION PROGRAM.

Implementation:

Evaluation is necessary not only to assess the impact of a comprehensive EMS Public Education/Information program, but also to identify evolving

programmatic needs. The Public Education Specialist will work closely with the Evaluation Specialist to develop an appropriate survey instrument to measure:

a. Changes in knowledge, attitudes and practice relative to the EMS System,

b. Increased participation in CPR and First Aid training programs,

c. Increased utilization of appropriate access into the EMS System.

The OEMS will continue to survey randomly selected Orange County residents in an effort to measure the effectiveness of the Public Education Programs.

OBJECTIVE TEN

ESTABLISH A LIBRARY OF EMS RELATED FILMS WHICH CAN BE USED BY EMS PROVIDERS AND OTHER GROUPS TO PROMOTE THE EMS SYSTEM.

Implementation:

OEMS currently maintains a library of CPR films. In order to further promote the EMS System in Orange County, EMS will purchase additional EMS-related films (i.e., Vital Link, Life in Your Hands). Films and accompanying EMS literature will be made available to hospital personnel, paramedics, other EMS providers, local service organizations and interested public groups at no cost. This service will be publicized at the EMS Information Seminar and through the EMS Newsletter published by OEMS.

OBJECTIVE ELEVEN

DEVELOP AND DISTRIBUTE EDUCATIONAL MATERIALS FOR HIGH RISK AREAS.

Implementation:

"High risk areas" may include industrial locations, recreational facilities, sports stadiums as well as other athletic surroundings. The Public Education staff will work with the Subcommittee to develop and distribute the following:

a. EMS related posters to be located in the private high risk areas mentioned above as well as in residential area community centers, condominium clubhouses, store window displays and telephone booths.

b. Exhibits will be rotated through areas of concentrated population like open shopping centers and shopping malls. OEMS is presently developing a three-dimensional exhibit which will require citizen participation to learn appropriate EMS System access in Orange County.

COMPONENT VII

EVALUATIONS

BROAD GOAL

The broad goal of this component is to develop a system of evaluation that will determine the on-going needs and measure the effect of the EMS System on death and disability.

CURRENT STATUS

At this time it is impossible to determine how many lives are being saved or the amount that disability is being reduced because of the EMS System. To date, evaluation of the Emergency Medical Care Program has been directed toward the survey of resources, documentation, and data on sub-systems (i.e., transportation, training, etc.). Some of these surveys include:

- Ambulance companies
- Public safety agencies (First Responders)
- EMT training programs
- Emergency room physicians
- Emergency room and critical care nurses
- Hospital facilities
- Public education and information

Essential data must be obtained to evaluate the clinical effectiveness of our system. There must be new methodologies developed for "tracking" and evaluating emergency medical care for specific patient groups, (e.g., trauma, burns, etc.) within the system. These analyses will allow programmatic

decisions as to the appropriateness of utilization of facilities, personnel, equipment, clinical treatment and cost effectiveness.

NEEDS

There is a need to develop an evaluation system that will measure the effectiveness on death and disability of the EMS System. This will be shown by reduced morbidity and mortality on a cost effective basis.

A complete evaluation system will be able to track a patient through the entire system; from the incident through discharge from medical care. There is a need for this type of tracer system to show the effectiveness of changes in the system as they are made. Periodic audits will need to be completed in various areas. These audits will not only be useful to the EMS System but to the hospitals as well.

BROAD OBJECTIVE

Implement a system of medical records that will provide the necessary data for the on-going evaluation of the entire EMS System.

Specific Objectives

OBJECTIVE ONE

DESIGN AND IMPLEMENT A STANDARDIZED PARAMEDIC CHART THAT IS CAPABLE OF PROVIDING DATA FOR EVALUATION.

Implementation:

The OEMS, working with MIC Nurse Coordinators, medical records keepers and

E. D. physicians will design and implement a Paramedic patient chart that will provide the necessary data. After a trial run in a limited area, the form will be adopted County-wide.

OBJECTIVE TWO

DEVELOP AUDITS OF THE SPECIFIC CRITICAL PATIENTS CATEGORIES.

Implementation:

Working with a committee comprised of the members listed in objective 1, audits will be developed that will provide data on the care and outcome of specific patient categories.

OBJECTIVE THREE

DEVELOP A PATIENT TRACER FORM, THAT WHEN RETURNED, WILL PROVIDE DATA ON PATIENT NUMBERS, CATEGORIES AND OUTCOMES.

Implementation:

A patient tracer form will be developed and attached to the paramedic patient report form. This tracer form will be filled in by the medical records personnel and returned to a centralized location where the information will be data processed.

OBJECTIVE FOUR

DEVELOP A MECHANISM THAT WILL PROVIDE DATA NEEDED FOR ROUTINE H.E.W. REPORTS.

Implementation:

With the implementation of objectives two and three, the information necessary for the completion of routine H.E.W. reports will be available.

OBJECTIVE FIVE

MEASURE THE MORBIDITY AND MORTALITY RATES ATTRIBUTABLE TO DEFICITS IN THE EMS SYSTEM SO AS TO DETERMINE MAXIMAL SALVAGE POTENTIAL FOR A GIVEN CHANGE IN THE EMS SYSTEM.

Implementation:

A mechanism for review of the collected data will be established. This review will be done by medical and administrative personnel in an effort to determine the effect on the need for changes in the EMS System.

COMPONENT VIII

DISASTER LINKAGE/MUTUAL AID

BROAD GOAL

The broad goal of this component is to assist in the regional implementation of the statewide disaster plan, insure that the system is capable of providing services during disasters and emergencies and to develop mutual aid agreements between all areas within the region and between adjacent regions.

DISASTER LINKAGE

A. Current Status

Orange County has developed a plan to prepare for adequate response to all types of disaster. It was last revised in October 1975. The California Emergency Services Act (Article 9) requires that in a major emergency each county be designated as an operational area in which the general coordination of disaster operations will be managed by an operational area coordinator selected by the political jurisdictions within each county.

The Orange County Emergency Services Plan includes the participation of the following agencies: Red Cross, fire services, communications, law enforcement, coroner, welfare, traffic control, medical, public information and radiological safety.

The Cities in Orange County are represented on the Emergency Services Disaster Council. The cities provide resources under this agreement

to support the overall efforts of the County Office of Emergency Services which is responsible for the management of all disaster response plans. The Office of Emergency Medical Services, representing Public Health and Medical Services, provides liaison for the Agency to the Office of Emergency Services. The Medical and Health Service Annex to the plan has been revised during the past year to make it more current with the EMS System Plan.

This plan provides a call up system for paramedic agencies using the existing emergency medical communications network. It also provides for an inventory of hospital beds at the time of disaster, and a method of routing ambulances to hospitals which have the capability of receiving the patients. The plan also provides for periodic disaster response exercises in all sections of the county to test the capability and preparedness of all emergency medical response resources. The Office of Emergency Medical Services personnel participate actively in planning and monitoring these disaster response exercises, in the critique that follows each one, and in implementing revisions to the plan.

Existing plans include the following emergency medical services resources which can be controlled by the Office of Emergency Services.

1. Radio communications linkage between all major hospitals in Orange County.

2. The resources for the eleven 200-bed civil defense Package Disaster Hospitals (PDH) and first aid stations which were recently re-allocated. The Office of Emergency (Disaster) Services (OES) has broken them down into quick-response modular units that will be strategically placed throughout the County.

As regional emergency medical services planning progresses, each of the emergency medical services areas will become more self-supporting in their ability to respond to day-to-day disasters. Furthermore, inventories of emergency medical services will be widely disseminated within each area and among the areas. This, in turn, will provide the Office of Emergency (Disaster) Services with more efficient systems of calling up and allocating these emergency medical services resources. Mutual aid programs, including automatic response systems for ambulances are being developed. The transportation of victims from the scene of a disaster to the most appropriate hospital will be improved by the designated medical control.

At the present time, through efforts of the Office of Emergency (Disaster) Services, most hospitals within the county are participating in multi-hospital simulation exercises. These exercises are demonstrating to health, city and county officials the need to have an organization which will be effective should disaster occur. Inventories of available resources, both within the city and through mutual aid, are being developed. The transportation of victims from the scene of a disaster to the most appropriate hospital will be improved by the designated medical control.

B. Needs - Disaster Linkage

1. Review the roles of the following in health disaster planning;

   a. Hospitals
   b. Ambulances
   c. Emergency physicians
   d. Air Transport capabilities
   e. Military support units
   f. County Health and medical departments
   g. Other transport capabilities (buses, taxi, etc.)

2. Review the use of the newly formed quick-response modular units.
3. Implement an organized system of reviewing the capability of
   a. regional response to disasters
   b. county-wide response to disaster

MUTUAL AID

A. Current Status - Mutual Aid

Provisions for mutual aid between areas exists for public safety personnel (law enforcement and fire) for ambulance services and hospital facilities. Each area, as it develops its plan, must provide for back-up services from adjoining areas for all elements of the system.

The recently implemented ambulance ordinance designates emergency response areas for private ambulance companies. Provisions will also be made for written back-up agreements between zones. Mutual aid agreements between public safety agencies have been operational for many years. Fire departments providing paramedic services have recently committed themselves to a "boundary drop system". This system allows for the closest paramedic unit to respond irrespective of city boundaries. The unit responding is financially responsible for services rendered, thus resolving any monetary considerations.

Areas adjacent to the region are Riverside and San Bernardino Counties to the east, Los Angeles County to the north and San Deigo County to the south.

We have a total assessment of all the tri-county resources and the

necessary agreements to provide mutual aid in times of disaster or other major emergencies. Should aid be requested in the time of disaster, command control of the resources lies with the requesting agency. In Orange County, mutual aid agreements exist between the Office of Emergency Medical Services and the El Toro Marine Air Base for secondary transport by helicopter of patients from remote areas to critical care units in Orange County.

B. Needs - Mutual Aid

There is a need to develop agreements between the various jurisdictions concerning transfer of patients and a medical plan for initial emergency medical services management in each of the cities.

There also is a need to further develop mutual aid agreements for continuation of paramedic calls beyond county boundaries. Although agreements do exist for multiple response of paramedic units to a singular incidence, standard treatment protocols for multi-hospital involvement need to be developed. There is a need to continue local agency planning to further develop mutual aid agreements for all elements of the emergency medical services system.

BROAD OBJECTIVE
DISASTER LINKAGE AND MUTUAL AID

The broad objective of this component is to assure that effective disaster linkages and mutual aid agreements exist to provide high quality emergency medical care in all situations.

SPECIFIC OBJECTIVES

DISASTER LINKAGE AND MUTUAL AID

OBJECTIVE No. 1

REVISE THE MEDICAL AND HEALTH SERVICE ANNEX OF THE ORANGE COUNTY EMERGENCY SERVICES PLAN.

Implementation

The OEMS will bring the medical and health service annex of Orange County's Emergency Services Plan up-to-date so that it conforms with EMS needs.

OBJECTIVE NO. 2

ASSIST THE OFFICE OF EMERGENCY SERVICES IN CONDUCTING DISASTER EXERCISES AND SIMULATIONS.

Implementation

Disaster drills will be conducted throughout the region during the 1978- 1979 fiscal year. The OEMS staff will participate in the pre-planning of the drills, monitor the medical responses made during the drills and critique the drills following completion of each exercise. Meeting with EMS providers will be held to decide on action plans to alter deficiencies brought out by the drill.

OBJECTIVE NO. 3

REVIEW THE ROLES OF THE FOLLOWING IN HEALTH DISASTER PLANNING.

1. Red Cross Disaster Health Services
2. Hospitals
3. Ambulances
4. Emergency Physicians

5. Air Transport
6. Military Support Units
7. County Public Health and Medical Services Department
8. OtherTransport Capabilities (Buses, Taxis, Etc.)

Implementation

Meetings will be held with representatives of the above named organizations to review their role in disaster planning.

OBJECTIVE NO. 4

ESTABLISH MUTUAL AID AGREEMENTS FOR ALL EMS ELEMENTS AS PART OF THE EMERGENCY MEDICAL SERVICES PLAN IN THE REGION.

Implementation

Within the region there must be provisions for back-up and mutual aid for public safety services, ambulance services and hospital facilities with the area and with adjoining areas. All components being planned as a part of the comprehensive EMS System will incorporate mutual aid provisions.

OBJECTIVE NO. 5

COMPLETE AGREEMENT FOR CONTINUATION OF PARAMEDIC CALLS BETWEEN LOS ANGELES AND ORANGE COUNTIES.

Implementation

A "continuation of call" agreement is currently pending between Orange and Los Angeles Counties to permit patients being transported from one county to another to continue receiving paramedic patient care. This is not permitted according to present California legislation without a special Multi-County agreement.

Such agreements currently exist between Orange and Riverside Counties, and Orange and San Bernardino Counties.

FUNDING

Introduction

The purpose of this section is to illustrate the County's plans for funding of the comprehensive EMS System. Given the premise that an effective Emergency Medical Services System will prevent increased morbidity and mortality, it is the duty of the legislatures at all governmental levels to develop adequate legislation to insure that EMS standards are upgraded and maintained at acceptable levels.

In order to implement a comprehensive EMS system, it is necessary to appropriate adequate funding. Funds awarded as a result of that legislation will be a major source of monies to support the planning, implementation and expansion of the system.

This chapter, therefore, considers both current EMS legislation, current and future funding sources.

EMS Legislation

The Emergency Medical Service System Plan will operate within and adhere to the legislative parameters established on a National, State and local basis.

The major legislative parameters which establish a health authority and which affect the standards of emergency care facilities, equipment and personnel in the system are briefly summarized below. Additionally, a legislative update (January, 1978) of local-State government programs is included in Appendix VI.

National

Federal E.M.S.S. Act (PL 93-154) and 1976 Amendments (PL 94-573)

Promotes the development of comprehensive regional E.M.S. systems throughout the County and authorizes the Department of H.E.W. to make grants for that purpose.

Highway Safety Act of 1966 (23 U.S.C. 401)

Addresses the need to improve emergency medical services related to highway accidents, as part of an overall highway safety program.

The Health Planning and Resource Development Act (PL 93-641)

Establishes local, state and national organizational entities to govern the planning, development and allocation of all future health resources.

Professional Standards and Review Organization (PSROs) (PL 92-603)

Mandates creation of PSROs through which physicians will review the quality and necessity of medical care provided to federal beneficiaries.

Communications Act of 1934

Authorizes the Federal Communication Commission to establish rules and regulations governing radio communications including bio-medical and public safety communications.

State

Wedworth-Townsend Paramedic Act (California Health and Safety Code, Sections 1480-1485)

Authorizes the establishment of pilot paramedic programs in a county and establishes the County Health Officer as the certifying authority for paramedic training programs, mobile intensive care nurses and

paramedics. This act requires that an annual evaluation report be submitted to the State by participating counties.

Emergency Medical Care Services (California Health and Safety Code, Sections 1750-1761)

Mandates the establishment of an Emergency Medical Care Committee in each county, authorizes an emergency medical services program for the State EMS Advisory Panel. The County Committee is required to submit an annual report to the State.

General Acute Care Hospital Regulation (California Health and Safety Code, Title 22

Established licensing requirements for general acute care hospitals and further establishes requirements and licensed categories of emergency rooms. (Comprehensive, Basic and Standby).

Public Safety Training (California Administrative Code, Sections 6701-6722)

Requires that all public safety personnel (police officers, firemen, lifeguards and park rangers) be trained in first aid and CPR, and establishes agencies to credential such training programs.

Ambulance Technician Training (California Health and Safety, Welfare and Institution Codes)

Requires that all ambulance technicians be trained in an approved State Health Department course for EMT-I, and provides State Health Department course for EMT-I, and provides State certification of individuals who pass or successfully challenge such an approved course.

Assembly Bill 4001 (Keene Bill) (Amends the California Health and Safety, Welfare and Institution Codes)

Mandates a State certificate of need before a licensed health facility makes capital expenditures ($150,000 or more), changes license classification or implements new services.

Ambulance Personnel and Vehicle Requirement (California Vehicle Code (California Vehicle Code, Section 2511)

Authorizes the California Highway Patrol to establish licensing regulations for ambulance vehicle operators, equipment and personnel.

Nursing Practice Act (California Business & Professions Code, Sections 2725-2811.5)

Defines the practice of nursing; includes in such definition, planning and performance according to the standardized procedures of various patient care activities.

California Emergency Services Act (California Government Code 8550-8668)

Authorizes the establishment of a State Agency to coordinate, assist and maintain a statewide capability to respond to a disaster.

Good Samaritan Act (California Government Code, Section 50086 and Vehicle Code, Section 165.5)

Provides that no act or omission by a properly trained team, (physician, surgeon, nurse, volunteer or owner/operator of an authorized emergency vehicle), shall be the basis for a liability, if good faith is exercised.

"911" Emergency System (Title 5, Government Code)

By 1982, requires the operation of a primary "911" telephone call

and emergency response system. Established statewide surcharge (one-half percent) to fund this system. (A "911" system is presently operational in San Clemente.)

Local

County Ambulance Ordinance #3022

Authorizes the inspection and licensing of ambulance vehicles, equipment and personnel operating within the County.

Emergency Services Program (Disaster) (County Ordinance 2510 and 2634)

Established a County emergency service unit authorized to serve as a planning and coordinating office related to disaster services.

Current EMS Funding

Federal

The Emergency Medical Services Systems Act of 1973 (PL 93-154) and the Emergency Medical Services Amendments of 1976 (PL 94-573) provide federal financial assistance for feasibility studies, planning, establishment, initial operation, expansion and improvements of emergency medical services for local governmental agencies. The federal EMS funding cycle is based on a five year time frame. The first-year funding (Section 1202, EMSS Act) is for planning and feasibility studies to develop the regional EMS System. Second and third year funding (1203 A and B, EMSS Act) is set aside for establishment and initial operation of the Plan. Fourth and fifth year financial assistance is designated for the purpose of EMS System expansion and improvement.

During 1977 the Office of Emergency Medical Services applied for planning monies (first-year funding under Section 1202 of the EMS Act) and received $60,000 for FY 1977-78 system planning and development.

In April, 1978, OEMS submitted a grant proposal to the Department of HEW seeking second year funding (Section 1203A) to begin implementation of the EMS System.

At this time OEMS has formally received notification from HEW of grant monies totaling $375,000 to be awarded to Orange County for FY 1978 - 1979. A detailed budget reflecting the County system's priorities and expenditures is currently being developed.

Orange County will continue to be competitive for future federal grant monies (available under Sections 1203B and 1204A and B) for continued implementation and expansion funds depending on the specific needs of the system. In 1979 OEMS expects to receive approximately $550,000 from federal sources. Future awards will be dependent on Orange County's progress of EMS System and the County's competitiveness in applying for limited federal grant monies.

Orange County EMS also receives federal money through the Comprehensive Employment Hiring Act (CETA) program. Each year the OEMS has the option to apply to the County Board of Supervisors to receive monies for these federally supported positions. Currently OEMS has five (5) CETA positions (in the Public Education program) and at this time OEMS plans to submit a yearly proposal to maintain these positions.

State

In 1977, the Orange County OEMS successfully applied to the State of California, Office of Traffic Safety for a $100,000 grant which will fund the purchase of 75 mobile radios for use in ambulances in Orange County. Usage of these radios will complete the emergency medical mobile communications radio system by formally linking these ambulances into the Emergency Medical Care System. Presently, this is the only funding presently being received from the State.

Local

During FY 1977 - 1978 the County Board of Supervisors appropriated $375,723, to be committed to the comprehensive EMS System development, including personnel, equipment and services/supplies.

A final Board-approved budget for FY 1978 - 1979 has not been established; passage of the Jarvis-Gann property tax initiative (June 1978) resulted in a postponement of the regular County budget hearings until September 1978. Following these budget sessions the OEMS will know the exact County (local) allocation that will be available and will have a budget to monitor spending during the year. Each consecutive year OEMS will develop a new budget to reflect the Board of Supervisor's decisions/allocations for the EMS System development.

County funds allocated for emergency medical services are budgeted for

1) the EMS office
2) Orange County Communications and
3) Orange County Fire/Paramedics

Additionally EMS funds are indirectly contributed from other local governmental agencies and private corporations.

Contributions are provided from the O. C. Fire Department (paramedic services), local governmental agencies (paramedic services) and base station hospitals (medical control for paramedic system). The level of support, as with any program, depends on the economic and policital situation both nationally and locally. Recessionary and inflationary trends have had (and probably will continue to have) an impact on local budgets.

Proposed Budget

The Orange County Office of Emergency Medical Services anticipates receiving the following budget appropriations:

Fiscal (Budget) Year	Anticipated Appropriations		
	HEW	County General	Total
1978-79	$ 375,000	$485,000	$860,000
1979-80	500,000	300,000	800,000
1980-81	600,000	300,000	900,000
1981-82	600,000	300,000	900,000
1982-83	-0-	400,000	400,000

Future yearly appropriations are contingent upon

1) community needs as identified by the various professional, political and community groups in the County and
2) priorities of the County Board of Supervisors.

Anticipated funds are approximate amounts based on expected system needs. Each year a budget will be developed to reflect expenditures for the specific time period.

PROSPECTIVE FUTURE FUNDING

The Office of Emergency Medical Services will be actively seeking funding in the future for continued financial support. Orange County EMS has finished the system planning functions (first year) and is beginning the implementation phase (second year) of the five-year time plan. The County currently has the necessary system components in various stages of development; we expect to seek funds for continued development, integration and expansion of these components, thus completing the five-year cycle. Funds will be sought from federal and local governmental entities and from the State of California when financial assistance becomes available.

At the federal level OEMS will be considering the region's specific developmental needs and will apply for funding that is designated for these specific purposes. During the next five year period, the following grants are examples of those that will be studied and considered as possible funding sources.

Dept/Agency	Possible Uses (FDAC #13.284)	EMS Subsystem
-DHEW -Health Svcs. Admin. provisions of EMS	To provide assistance and encouragement for development of a comprehensive emergency medical services system.	Practically all subsystems and components
-DHEW -Health Resources Adm. -National Ctr. for Health Services Research and Development	(FDAC # 13.285) To support research for development of valid and useful information needed to provide appropriate technical assistance when implementing EMS system	Research in areas reaching all subsystems and components

Dept/Agency	Possible Uses	EMS Subsystem
	(FDAC #13,226)	
-DHEW -Health Resources Administration -National Center for Health Services Research	To support research development, demonstration and evaluation designed to improve health services	Projects designed to develop/evaluate ways of using manpower, equipment and facilities
	(FDAC #21.X01)	
-Department of the Treasury -Office of Revenue Sharing	To provide funds for expenditures in priority areas, including health.	All capital and operating systems
	(FDAC #20.600)	
-Department of Transportation -National Highway Safety	To provide coordinated national safety program; includes EMS (start-up and some operations)	Communications and transportation
	(FDAC #13.224)	
-DHEW -Divisions of Neighborhood Health Centers -Bureau of Community Health Services	To support full range of public health services to meet special community needs, new programs including related training and comprehensive health centers.	New services must include EMS services.
	(FDAC #12X01)	
-Dept. of Defense -MAST Interagency -Executive National Group -Highway and Traffic Safety Administration	To provide air transport and related medical services	Transportation (Air)

At the State level the Office of EMS will seek funding as it becomes available for areas which require specific attention and development. One specific grant which the office will consider is funding for assistance with a Poison Control Center. Little funding from the State is presently available for aiding local EMS regions. However, an assembly bill in progress proposes to provide such funding.

Local funding offers several alternatives. Most of this support (direct

dollar support) for personnel, operating and capital expenses are borne by taxpayers, via the County's general fund. Due to increasing difficulties in obtaining and competing for such monies, the OEMS is developing and considering alternatives for the continuation of the system as follows:

1. Increasing ambulance service, vehicle and personnel (attendant/driver) licensing fees to totally offset the department's costs for providing this service.
2. Require paramedic training and recertification costs to be partially borne by the specific localities receiving paramedic coverage.

Any alternatives will be submitted to the Board of Supervisors and will be effective only for Board approval.

MILESTONES AND PRIORITIES

The purpose of this section is to illustrate the approximate timelines and order that the Office of Emergency Medical Services has established for implementation of the various EMS System objectives. Many of these objectives are already in the initial stages; others will be developed within the next year. Some of these objectives will be in effect on a continual basis and several will be implemented during shorter time intervals as shown.

Each year OEMS will develop specific objectives for that year and will revise and update the implementation schedule as surrounding factors dictate. Implementation will be dependent on funds available to EMS for System operation.

Objectives and goals for Orange County's EMS System are listed in order of priority on the following pages under the section entitled "Priorities". The approximate time frame for each objective is listed by component under the section entitled "Milestones".

PRIORITIES

Priority I

A. MANPOWER AND TRAINING

During the past year Orange County identified and assessed EMS Manpower groups. Public Safety Agencies such as the lifeguards and forest rangers need to be integrated into the EMS System. Manpower lost due to attrition and promotion needs to be replaced. In addition, training programs are needed for Emergency Department nurses, MIC nurses, Physicians and nurses in specific critical care areas, and symposiums for EMS System individuals.

B. EVALUATION

The broad objective of the evaluation component is to provide an evaluation system that will measure the EMS System impact based on program objectives.

C. HOSPITAL AND CRITICAL CARE FACILITIES

During the next phase of the Emergency Medical Services System development, integration of the Critical Care Centers into the EMS System is a high prioritiy. In addition, improvement and expansion of certain centers will enhance the total EMS system in Orange County.

D. PUBLIC EDUCATION

Without an informed public, the maximum benefits of an emergency

medical services system cannot be realized. Since initiating a public information program we have become acutely aware of the importance of this component. Less than 20% of the people in the area are trained to provide emergency assistance to those who may need it. Fewer than 70% know how or when to properly access the EMS system. Audio Visual and training materials are needed by the Office of Emergency Medical Services in the expansion of our public information program. The prevention programs for special population groups will also be expanded.

Priority II

A. COMMUNICATIONS

The region currently has in operation a biomedical telemetry communications system. Most hospitals have the capability of communicating between facilities utilizing the HEAR emergency radio net. Additional efforts need to be directed at total facility communication. A radio link is needed to assure Base Station (Resource) Hospital medical control of patients being transported.

The universal system entry number 9-1-1 is planned for the region but will take six to seven years to be implemented. Orange County has recently been awarded a $100,000 grant from the State Office of Traffic Safety to purchase radio communications equipment to tie ambulances into the EMS system.

B. TRANSPORTATION

A local ambulance ordinance developed during the planning period

was approved by the Board of Supervisors. OEMS, through Public Health and Medical Services, is responsible for implementing the ordinance. The OEMS is now responsible for licensing ambulance drivers, attendants, vehicles and companies in Orange County. The Ambulance Specialist position that is currently being recruited will be supported by funds collected from licensing fees.

C. DISASTER LINKAGES/MUTUAL AID

The region has developed a medical annex to the disaster plan. This plan will be reviewed and revised as part of an ongoing planning process to insure its adequacy in the event of a major disaster.

In addition, mutual aid agreements both in the region and with bordering counties are continually being developed and updated.

COMPONENT I

MANPOWER/TRAINING

OBJECTIVES	1978-1979	1979-1980	1980-1981	1981-1982	1982-1983
1. Train 50% of the population in CPR and proper system access and use.					
2. Assure the availability of training courses and refresher training courses in first aid and CPR for Public Safety Personnel and first responders.					
3. Assure the availability of training for 100% of the County's 2,341 firemen to the EMT-A level by 1982.					
4. Standardize the curriculum, length and instructor personnel for the region's seven EMT-A courses given in the region.					
5. Assure the availability of training for students needed to replace manpower lost due to attrition or promotion.					
6. Provide bi-annual 40 hour paramedic refresher training to meet recertification requirements and maintain proficiency.					

COMPONENT I

MANPOWER/TRAINING (cont.)

OBJECTIVES	1978-1979	1979-1980	1980-1981	1981-1982	1982-1983
7. Assure the availability of training for emergency department nurses in emergency department nursing, utilizing the EDNA standards, by 1982.					
8. Assure the availability of training for 77 nurses in Emergency Nursing by 1980.					
9. Develop a standardized curriculum and assure the availability of initial training for all MIC nurses by July 1981.					
10. Assure the availability of training for critical care nurses in management of critically injured trauma patients.					
11. Provide five symposia on emergency medical conditions and the EMS System to approximately 400 physicians during the next five years.					
12. Assure that the region has adequate Advanced Life Support (ALS) classes available for all Emergency Department physicians in the County.					

COMPONENT I

MANPOWER/TRAINING (cont.)

OBJECTIVES	1978-1979	1979-1980	1980-1981	1981-1982	1982-1983
13. Contract with the Paramedic Training Program to establish interdisciplinary training at the six Base (resource) Hospitals for physician, MIC nurses and paramedics.					
14. Increase competency of EMS professional staff by attending National and State educational meetings and seminars.					
15. Sponsor a State symposium on legislative requirements on EMS.					
16. Sponsor an EMS symposium on communications and medical control for local, State and National EMS administrators, physicians and directors.					
17. Include a section on non-English communication for medical emergencies in each Manpower Training program that the OEMS coordinates.					

COMPONENT II

COMMUNICATIONS

OBJECTIVES	1978-1979	1979-1980	1980-1981	1981-1982	1982-1983
1. Provide the means for an out-of-County paramedic to continue radio communications with his established, designated, medical control center.	———				
2. Purchase 75 ambulance radios to better interface the Basic Life Support System with the existing Advanced Life Support System.	———				
3. Continue to encourage local communities to combine efforts and facilities for the dispatching of emergency response units.					
4. Participate with the State in the implementation of the 9-1-1 system in Orange County.					

COMPONENT III

ORGANIZATION

OBJECTIVES	1978-1979	1979-1980	1980-1981	1981-1982	1982-1983
1. Recruit and hire the appropriate staff members for the OEMS as needed.	—				
2. Recruit and hire a local physician as Medical Director.	—				
3. Assure that the existing staff remain current in National EMS changes.					

COMPONENT IV

TRANSPORTATION

OBJECTIVES	1978-1979	1979-1980	1980-1981	1981-1982	1982-1983
1. Develop a resource allocation plan for emergency ambulance services insuring 24-hour availability.					
2. Implement the County Ambulance Ordinance.					
3. Develop a uniform pre-hospital patient information gathering form.					
4. Develop a mechanism for specialized critical care transport of patients from receiving centers to the appropriate tertiary care unit.					

COMPONENT V

FACILITIES/CRITICAL CARE FACILITIES

OBJECTIVES	1978-1979	1979-1980	1980-1981	1981-1982	1982-1983
1. Complete the vertical categorization of the region's hospitals.					
2. Implement transfer agreements between paramedic Receiving Centers and the various critical care institutions as they are designated.					
3. Assure that proper transport mechanisms are available for the transfer of patients to the designated critical care facilities.					
4. Revise the Paramedic Receiving Center designation criteria.					
5. Maintain a formal system of medical control.					

COMPONENT VI

PUBLIC EDUCATION/INFORMATION

OBJECTIVES	1978-1979	1979-1980	1980-1981	1981-1982	1982-1983
1. Conduct County-wide EMS information seminars.					
2. Develop and distribute EMS System information and access material to Orange County residents.					
3. Assess information needs and develop special programs for special target groups.					
4. Develop and distribute EMS access materials for the visitor/tourist population in Orange County.					
5. Develop and implement a mass media campaign to increase public awareness of EMS.					
6. Develop and implement a mass media campaign of illness/accident prevention.					
7. Include EMS access information in all Heart Association and Red Cross CPR and safety program courses.					

COMPONENT VI

PUBLIC EDUCATION/INFORMATION (cont.)

OBJECTIVES	1978-1979	1979-1980	1980-1981	1981-1982	1982-1983
8. Conduct CPR training programs for special population groups.					
9. Evaluate the EMS Public Education/Information Program.					
10. Establish a library of EMS-related films to promote the EMS System.					
11. Develop and distribute educational materials for high risk areas.					

COMPONENT VII

EVALUATIONS

OBJECTIVES	1978-1979	1979-1980	1980-1981	1981-1982	1982-1983
1. Design and implement a mechanism that will a) Establish whether a system approach to emergency medical care reduces death and disability for the critical, emergent and non-emergent patients and b) will provide the data needed for periodic HEW reports.					
2. Measure the the mortality rate attributable to deficits in the EMS system so as to determine maximal salvage potential for a given change in the EMS system.					
3. Monitor compliance with the County's general policy to render care without regard to the patient's ability to pay.					

COMPONENT VIII

DISASTER LINKAGE/MUTUAL AID

OBJECTIVES	1978-1979	1979-1980	1980-1981	1981-1982	1982-1983
1. Revise the Medical and Health Service Annex of the Orange County Emergency Services Plan.	—	—			
2. Assist the Office of Emergency Services in conducting disaster exercises and simulations.					
3. Review the roles of various agencies in health disaster planning.					
4. Establish mutual aid agreements.	—				
5. Complete agreement for continuation of paramedic calls between Los Angeles and Orange Counties.	—	—			