

THE REGIONALIZATION OF EMERGENCY MEDICAL SERVICES:
A STRATEGY FOR PLANNING AND INTERVENTION

by

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ABSTRACT

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In response to increasing interest and concern about the quality of emergency medical services (EMS) among members of the medical community and the public at large, the Emergency Medical Services Systems Act of 1973 was passed overwhelmingly in Congress and enacted into law. The Act seeks to establish "EMS systems" on the substate regional level throughout the country. Although a body of literature exists that examines the regionalization of governmental functions from a normative perspective, little is known about the regional provision of such private sector functions as hospital emergency services. Moreover, the dynamic processes of implementing the regionalization of locally provided services has received only perfunctory attention, despite the likelihood of political and institutional reluctance to cooperate on a regional level. Finally, the creation of EMS systems requires the incorporation of service components from public sector, private sector, health and municipal institutions into an integrated regional service system. This study constitutes an exploratory effort at assessing the appropriateness of regional provision of EMS, identifying the critical aspects of implementing the regional scale of service, and understanding the process of creating a service system with components based in established institutional settings.

In the context of the largely uncharted policy of the EMSS Act, this study examines the translation of the concept of regional systems into an attempt to actualize this form of EMS provision in an eight town area on the North Shore of Massachusetts. In the course of performing this case study, information was gathered from the files of the regional health planning agency on the North Shore, from an extensive set of interviews with involved parties in all aspects of EMS planning, provision, and decision-making, and from involvement in a critical series of meetings at which the institutional concerns of EMS providers were revealed in confrontation with the prospect of implementing a regional ambulance system. Throughout the research, the effects of present EMS provision within broader based institutions were encountered and analyzed. Particular emphasis was placed on investigation of the cost structure of service provision, the role which EMS played in furthering the goals of the institutions in which it was provided, and the values and incentive structures inherent to the diverse components of service. In these investigations, the critical issue at

stake was the response of the institution to policy changes motivated by the quality and efficiency concerns of the EMSS Act initiatives.

In the particular events of the case study, the potential of regional EMS systems to effect improvements in the quality and efficiency of service was demonstrated by the outcomes of the planning process. The implementation of a hospital-centered system, integrated with a regional ambulance service by means of a sophisticated radio communications network, presented the opportunity to reduce the cost of emergency service while enhancing the appropriateness of the medical treatment afforded to critically ill and injured patients.

The case study also pinpoints the institutional characteristics that mitigated against and prevailed over the aspects of the regional system that threatened their concerns. The capability of individual institutions to totally thwart the implementation of the EMS regional plan leads to the conclusion that creation of regional service systems through a process which relies on consensus among its participants is in fundamental conflict with the institutional nature of EMS.

Finally, individual institutional decisionmaking was observed to result in a distribution of resources substantially at odds with the normative goals of quality and efficiency in service provision. This suggested the establishment of a regional policy-setting mechanism for EMS and, by implication, for the entire health care system. The appropriate means of investing authority in this regional mechanism is left as an open question whose answer rests in the examination of the role of the federal government in regulating and legislating for health care provision.

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CHAPTER ONE

THE EVOLUTION OF FEDERAL EMS POLICY

The field of emergency medical services has experienced a sharp upsurge in interest and involvement in the past ten years. Medical professional associations, national feature magazines, the news media, federal agencies, Congress and two Presidents have joined in efforts to upgard emergency care, which has been called one of the most neglected areas in health delivery. Since 1972, these efforts intensified at the federal level along with the announcement of a major Presidential Initiative and Congressional consideration of comprehensive legislation in the field. These activities culminated in the enactment of the Emergency Medical Services Systems Act of 1973, a landmark bill that currently serves as the driving force in efforts to improve emergency health care in the United States. The Act, and the extensive activities that it has generated in the field of emergency medical services, is designed to implement sophisticated service systems at the substate regional level throughout the country. This federal direction, and the concept of comprehensive regional systems which it seeks to implement, represents a significant milestone in efforts to upgrade emergency medical services. In the chapter that follows, we examine the historical origins of this concept and its implications for policy implementation on the state and local levels.

Emergency Medical Services in the United States

The provision of emergency medical services (EMS) is an important and growing component of the overall health care delivery system in this country. As demonstrated by the statistics that follow (compiled by the National Academy of Sciences-National Research Council), EMS can provide life-saving services to a substantial proportion of the population.

Accidental injury and acute illness generate a staggering demand on ambulance and rescue services, allied health personnel, physicians, and hospitals for the delivery of emergency medical services. Accidental injury is the leading cause of death among all persons aged 1 to 38. Each year more than 52 million U.S. citizens are injured, of whom more than 110,000 die, 11 million require bed care for a day or more, and 400,000 suffer lasting disability at a cost of nearly \$3 billion in medical fees and hospital expenses and over \$7 billion in lost wages. Those requiring hospitalization occupy an average of 65,000 beds for 22 million bed-days under the care of 88,000 hospital personnel. This hospital load is equivalent to 130 500-bed hospitals. Of the more than 700,000 deaths from heart disease each year, the majority are due to acute myocardial infarction and more than half of these deaths occur before reaching a hospital. Approximately 40 million persons seek care each year in hospital emergency departments as a result of accidents, heart disease, stroke, poisoning, diabetic coma, convulsive disorders, and many other illnesses. 1

Since the 1950's, many important techniques have been developed that have vastly increased the life-saving potential of emergency care, both on the scene of a life-threatening emergency and in the hospital provision of definitive care. However, the discrepancy between medical life-saving capabilities in EMS and their application in an emergency situation is vast. It has been estimated that more than 25 percent of the 800,000 deaths annually from heart attacks, accidental injuries and other emergency conditions could have been averted had the proper emergency care been provided to the victims.²

In the same report, the Academy pointed out that emergency services are among the most neglected aspects of health care. Prior to 1966, there had been no federal activity and only one nation-wide health organization that had made concerted effort in the EMS field. In 1966, the first federal EMS activity was initiated with the passage of the National Highway Safety Act. By 1973, EMS activities were included in more than one hundred federal programs, including the EMSS Act of 1973. The Act began a massive funding

initiative designed to establish a unified EMS policy to coordinate federal efforts in the creation of EMS systems throughout the country.

The EMSS Act represents both a dramatic change in the role of the federal government in EMS and an emphatic recognition of the emergence of a new normative conception of the structure of EMS provision. The Act, which is the largest federal effort in the history of EMS programs, provided \$185 million for the implementation of these new directions. It is intended to remedy the deficiencies in EMS that were either ignored or fostered by the preceding federal initiatives -- by establishing new EMS service systems on a substate regional level, with greatly upgraded technology and resources. The programs of the Act reflect a response to three observations about the state of EMS delivery in the United States -- an unacceptably low level of EMS resources in contrast with a well-developed technological capability, a consistent failure of previous federal efforts to deal with EMS problems appropriately, and the desirability of a new "systems approach" to EMS provision that emerged out of widely expanded medical and planning interests in the field. These perceptions provide the justification for the programs that the Act initiated. But in order to evaluate its policies properly, it is necessary to understand the origins of its rationale in the evolution of concern for EMS.

The Origins of Concern for EMS

In 1966, the first widespread worry about the provision of EMS was raised when the NAS-NRC published a report entitled "Accidental Death and Disability: The Neglected Disease of Modern Society".³ This report received a vast amount of public exposure, and has been credited as a primary motivation for federal activities in EMS in the nine years since its publica-

tion.⁴ The report asserted that, although accidental death was a major health care problem, only one nationally organized effort existed for EMS activities, no federal program had attempted to upgrade emergency departments or ambulance services, and vast numbers of people were dying or suffering permanent disability as a result of this lack of attention.

The activities motivated by this report in 1966 set the tone for all efforts to improve EMS over the six years that followed its publication and were considered in the formulation of the EMSS Act. The document, the magazine articles, and programs that followed treated EMS as though it had two separable components -- the transportation services and the emergency departments of hospitals -- each with its own set of deficiencies. Following the report, federal efforts tended to focus solely on transportation, while efforts within the medical field tended to be based on the emergency department. This separation was further reflected in the development of the EMSS Act when Congress looked to the past federal efforts as sources of the EMS problems and consulted the medical professions for solutions to these problems. The programmatic separation between the transportation and hospital components of EMS continued almost until the passage of the EMSS Act. In the period in which this separation predominated, many of the problems that the 93rd Congress identified in federal EMS efforts were allowed to develop.

Federal Efforts in EMS: The Programs and Their Problems

Of the two primary components, emergency transportation activities were most visible to the public and generated the bulk of public concern for EMS.⁵ In response to this public concern, most of the federal efforts prior to 1972 focused on the development of improved emergency ambulance

capabilities. The most significant federal program in this field, and one that typifies the approaches and problems of federal EMS efforts, was operated by the National Highway Traffic Safety Administration in the Department of Transportation. The Highway Safety Act of 1966 directed this Administration to undertake an extensive program in highway and traffic safety that included the provision of emergency transportation to accident victims. The passage of the Highway Safety Act was the first Congressional activity in EMS, and the DOT program established by the Act was the largest federal EMS program until the EMSS Act.

The DOT program combined grants-in-aid, design standards, and technological transfer in its efforts to develop the transportation component of EMS. Over the six years of the program, \$50 million was granted to states and localities for the purchase of ambulances and communications equipment. To supplement its direct support program, the Act mandated extensive standards for vehicle design, minimum equipment requirements, attendant training recommendations, and training program curricula for personnel in the emergency transportation field. Finally, through its grants for ambulances and other emergency vehicles, the DOT program oversaw the incorporation of technological advances, such as the life-saving techniques developed for battlefield EMS in Vietnam, into the local provision of emergency transportation services.⁶ This investment increased the technological potential for vehicles at the local level and, with the DOT standards, fostered an awareness of the personnel and equipment required for the provision of sophisticated emergency medical care to highway accident victims.

The DOT efforts in emergency transportation were typical in three ways of the other federal programs that followed. First, DOT saw the role of ambulances on the most immediate level as a part of the highway safety system,

and more generally as a part of the total transportation system in its purview. Its efforts attempted to involve the ambulance program more closely with its other initiatives in the area of highway safety. An indirect result was that local highway safety agencies (e.g. the police) were encouraged to involve themselves in ambulance service as part of the local efforts to develop total highway safety systems.

The second typical characteristic of the DOT program was its failure to enforce standards in funding local emergency transportation services. The DOT program was authorized to withhold ten percent of authorized federal highway funds from those states which did not meet the extensive standards of the Highway Safety Act program, including specifications for emergency ambulance services. This prerogative, however, had not been exercised prior to 1972. Moreover, in 1972, Congressional hearings on EMS disclosed that the program had failed, in some instances, to elicit the required matching funds from a number of the states who still continued to receive full complements of Highway Safety and federal highway funds.⁷

Finally, the DOT Highway Safety Program was characteristic of other federal efforts where states received and disbursed emergency transportation funds without a substantive plan for their use. One of the provisions of the ambulance standards required the drafting and approval of a state-wide plan for the development of an emergency ambulance system.⁸ However, by 1972 only eight states possessed an "approved plan", and only fourteen state plans had been drafted.⁹ This lack of planning at the state level denied the DOT program much of its potential to accomplish concerted improvements in the transportation component of EMS. The resulting shortcomings in state ambulance services constituted one of the problems identified by EMSS Act advocates as a characteristic deficiency of past federal efforts in EMS.

An Assessment of Federal EMS Activities: The Problems Ignored and Created

The DOT program, the largest of the many federal funding efforts in EMS that preceded the EMSS Act, created problems which had the most substantial impact on the structure of EMS transportation systems and on Congress's assessment of federal EMS efforts. One characteristic common to most of the federal programs was that they failed to stimulate state-level leadership for local EMS activities. The DOT program recommended the establishment of a coordinating agency within the state health departments, but with few exceptions these agencies were mainly responsible for collecting and disseminating information concerning the availability of funds from federal sources and exercised little policy-making prerogative or influence over the structure of local services.¹⁰

The lack of leadership at both the federal and state levels coupled with the piecemeal availability of funds, fostered the development of a fragmented and highly parochial local EMS system. Despite the seven years of federal initiatives in EMS, Congressional hearings on the Act expressed concerns that serious gaps and disparities existed in the local provision of services and, moreover, that the quality of EMS was severely eroded by the structure of local service provision.¹¹

Congress believed the roots of these deficiencies were reinforced by the federal programs which had supported them. First, the funding criteria for federal assistance had promoted the identification of the ambulance function as an element of many systems other than EMS, working against the formation of unified EMS systems on the local level. While the DOT program saw ambulances as part of the transportation system, three other sources for ambulance funds identified by DHEW in 1969 similarly tied funding of ambulances to other system-related criteria. In particular, in order to receive

Hill-Burton Public Health Service funds, the ambulance and equipment had to be considered "necessary items of equipment for a hospital-based and operated ambulance service". The Civil Defense service provided funds "where ambulance and rescue services are a part of the local Civil Defense system", and the Small Business Administration offered loans to ambulance services operated on a "profit-making basis".¹²

This variety of funding mechanisms also contributed to the second structural fault identified by Congress -- a tendency towards parochialism in the provision of services that received federal assistance. Because of the piecemeal funding operations that depended on local initiatives for action, gaps in service existed where the initiative (and state leadership) was lacking. Furthermore the localities tended to view the services that did exist as restricted territorially by municipal boundaries. This produced incidents that resembled border disputes over patient transport, some of which were recounted in the EMSS Act hearings.¹³

The Need for Change in the Federal Role in EMS

The Congressional assessment of federal EMS activities, represented by the passage of the EMSS Act, acknowledged the failure of these past efforts to upgrade local EMS provision to an acceptable degree. In the legislative hearings for the Act, the numerous federal programs were criticized for the peripheral role that was afforded EMS, both in the lack of a federal EMS policy and in the low levels of resources that were devoted to EMS by programs with other primary concerns.¹⁴ There was no identifiable funding program whose sole responsibility was EMS, so that no unified federal policy existed. The Act was developed to rectify these two deficiencies. It sought to alter the nature of federal EMS activities from the present pro-

file of many conflicting and confusing independent activities to one in which a unified and concentrated federal effort was presented.

In its adoption of a unified federal program, the Act had taken a significant step in altering the federal EMS role. It went one step further, however, in specifying that the new federal program would fund the creation of regional EMS systems throughout the country. This step marked the first federal attempt to implement a particular normative conceptualization of the organization of EMS at the local level. Furthermore, the Act's normative model of EMS differed significantly from past federal initiatives in that it was centered around the organization of hospital emergency care capabilities and the parallel incorporation of prehospital EMS components into regional systems. With this approach, the Act had shifted the focus of federal efforts from the supplementation of the transportation component to the development of EMS systems with health facilities as their foundation. This shift has its roots in several important developments within the health profession. In order to assess the appropriateness of the Act's program and the new normative approach it seeks to implement, the development of the EMS systems concept must be traced from its institutional origins within the health care system.

Origins of the EMS Systems Concept

The EMS systems model of the EMSS Act emerged as the product of responses to changes in the patterns of hospital emergency care provision. These changes -- a drastic increase in the use of emergency facilities and accompanying increase in their public relations role -- gave rise to serious institutional pressures within the hospital component of EMS which contributed to the development of a professional consciousness among providers of emer-

gency medicine. The attention and efforts that were generated by this consciousness eventually resulted in the formulation of the concepts that the EMSS Act incorporated. The factors that contributed to the concept then, are the changing patterns of emergency department usage, the rise of emergency medicine as a specialization in the health field, and the exercise of the increased EMS professional consciousness in the development of policy for the hospital component of EMS.

Changing Patterns of Emergency Department Utilization

The first, and most pervasive, source of stress on the hospital component of EMS was the result of changing patterns in the use of hospital emergency facilities. By 1966, the emergency departments in all hospitals were becoming one of the main sources of primary health care for the community, in addition to their original responsibilities as providers of definitive emergency care.¹⁵ This was the result of a tremendous increase in patient visits to the emergency rooms, 312 percent since 1954,¹⁶ and caused a serious overutilization of hospital facilities that was growing at an estimated annual rate of ten percent.¹⁷ In the emergency department a substantial proportion of the increase was due to a huge influx of patients whose conditions were not classifiable as emergent,¹⁸ but were using the hospital as a source of their routine health care needs.

The second source of stress on the hospitals was produced by the increased effect of the emergency department on the hospitals' patient load, which strongly shaped the hospitals' relationship to the communities they served. The care provided in the emergency departments had become a large factor in the patients' view of the hospital, a trend that hospitals were quick to notice.¹⁹ This prominence of the emergency department added to the

prestige and resource levels that emergency care could command within the hospitals and, as a growing specialization, in the medical profession at large.

The Rise of the Emergency Medical Specialization

One of the most important outcomes of these two pressures was that emergency care became one of the fastest growing specializations during the early 1970's. The publicity that arose from "Accidental Death and Disability" also contributed to the growth of the emergency specialization by adding considerable prestige and public esteem to the hospital component of EMS.²⁰ This trend was manifested in the formation of numerous emergency medical professional organizations since 1966, among them the University Association for Emergency Medical Services, The American Trauma Society, the Emergency Department Nurses Association, the Society of Critical Care Medicine and the American College of Emergency Physicians. These groups quickly became powerful influences in shaping policy for emergency care provision, largely because of the lack of established leadership in the EMS area.

Policy for the Hospital Component of EMS

The primary policy problem faced by the emergency medicine advocates was the difficulty of maintaining an appropriate match between the emergency department capabilities and the changing patient demands placed upon the facilities. It was necessary to determine the extent to which resources were to be allocated to meet the demand for non-emergent service, and to what extent resources were to be diverted from the emergency functions of the department. It became increasingly clear that the facilities were caught between the need to maintain both non-emergent and emergent care capabilities

at publicly acceptable levels and the limited resources available to do so.

The concept that emerged as the theoretical response to this conflict²¹ was the categorization of hospital facilities based on their capability to provide service to the emergency patient in their emergency departments. It arose from the efforts of the emergency medical groups to maintain high standards of emergency care in the face of competition for resources from non-emergent patient loads. Under this concept, definitive emergency care was viewed as a function not strictly limited to the institutional confines of an individual hospital which might no longer be capable of affording services for all of its emergency patients. With this development, emergency care took on the potential sophistication of specialized facilities for different types of patient diagnoses. To operationalize this breakthrough, the various professional groups issued a host of standards and recommendations specifying criteria and requirements for different categorization schemes, motivating a movement to implement the categorization concept.²²

The Incorporation of Prehospital Service into the EMS System Model

The next component of the EMSS Act's normative model -- interfacing prehospital intake procedures with rationalized emergency departments -- was also motivated by these professional groups as an extension of categorization. The potential specialization of hospital capabilities required an accompanying increase in the sophistication of prehospital EMS so the hospital capabilities could be used appropriately. Thus, it became a concern of the emergency professionals to seek an upgraded prehospital component, both to alleviate prehospital mistreatment (of which there had been ample evidence)²³ and to extend the system of EMS from the hospital emergency departments to the scene of an emergency incident.

By 1972, this approach to EMS systems, sketched out by several planning and professional efforts,²⁴ enabled a more rational assessment of the deficiencies of present emergency medical services. The consensus that was reached about the solutions to the deficiencies in EMS included three main concepts. First, prehospital care was inadequate and needed to be identified with the EMS system as a unified segment. Second, the hospital care capabilities must be organized and extended into the prehospital aspects of EMS. Finally, due to the various federal programs and research efforts, the technology existed to support this new concept of unification of prehospital and hospital components of EMS.

Translation of the Systems Concept into Federal Policy

The process of translating the concept of EMS systems into federal policy began in 1972, when federal EMS activity intensified in parallel with the announcement of an EMS Initiative at the Executive level of government. That year, the Department of Health, Education and Welfare funded five major EMS demonstration projects and sixty-five state and local EMS planning efforts as part of the Initiative. The final component of the Initiative was the establishment of a new Division of Emergency Health Care within HEW to coordinate and serve as a clearinghouse for federal activities in EMS. The HEW demonstration projects, the first federal attempt to combine all the components of EMS represented federal acceptance of the EMS idealization that had developed since the "Accidental Death and Disability" publication. There was an element of political machination in this initiative, however, in that the administration was attempting to curtail further categorical grants in health programs, so this initiative was proposed as an alternative to several pieces of legislation pending in Congress to establish categorical

programs for EMS grants to localities.

In 1972, the beginning step of Congressional acceptance of the systems concept was manifested in the first Congressional EMS activity since the passage of the Highway Safety Act. That year, both Houses considered and passed versions of legislation to fund the establishment of EMS systems throughout the nation. This legislative effort was rewarded a year later when the EMS Systems Act of 1973 was passed, representing the culmination of seven years of concern that began with the publication of Accidental Death in 1966. The EMSS Act of 1973 adopted and extended the conceptualization represented in the demonstration projects of the previous year thus placing in legislated form the idealization of EMS systems that had emerged among the emergency specialists.

The EMSS Act of 1973: A Unified Federal Program to Create EMS Systems

The EMSS Act, in response to the influences and problems of past federal programs and to conceptual developments in the medical profession, undertook two major tasks -- the coordination of all federal EMS efforts into a newly unified and effective mechanism for policy execution, and the exploitation of these federal efforts in the establishment of EMS systems throughout the country. The Act includes \$185 million over three years to assist local services in the creation of EMS systems. It recognizes the diversity of existing services in allowing for planning, implementation and expansion grants to potential or existing systems, dependent on their current stage of development.

The language of the Act, however, indicates a very precise notion of the nature of the EMS systems that will be funded. The Act parallels the conceptual development of EMS systems in identifying the hospital emergency

facilities as the system's foundation and organizing prehospital components as essential elements of the system. This concept was articulated in great detail by the Act's definition of fifteen components that collectively comprise an EMS system. In the language of the Act,

An emergency medical services system shall - (i) include an adequate number of health professions, allied health professions, and other health personnel with appropriate training and experience;

(ii) provide for its personnel appropriate training (including clinical training) and continuing education programs which (I) are coordinated with other programs in the system's service area which provide similar training and education, and (II) emphasize recruitment and necessary training of veterans of the Armed Forces with military training and experience in health care fields and of appropriate public safety personnel in such area;

(iii) join the personnel, facilities, and equipment of the system by a central communications system so that requests for emergency health care services will be handled by a communications facility which (I) utilizes emergency medical telephonic screening, (II) utilizes or, within such period as the Secretary prescribes will utilize, the universal emergency telephone number 911, and (III) will have direct communication connections and interconnections with the personnel, facilities, and equipment of the system and with other appropriate emergency medical services systems;

(iv) include an adequate number of necessary ground, air, and water vehicles and other transportation facilities to meet the individual characteristics of the system's service area -

(I) which vehicles and facilities meet appropriate standards relating to location, design, performance, and equipment, and

(II) the operators and other personnel for which vehicles and facilities meet appropriate training and experience requirements;

(v) include an adequate number of easily accessible emergency medical services facilities which are collectively capable of providing services on a continuous basis, which have appropriate nonduplicative and categorized capabilities, which meet appropriate standards relating to capacity, location, per-

sonnel, and equipment, and which are coordinated with other health care facilities of the system;

(vi) provide access (including appropriate transportation) to specialized critical medical care units in the system's service area, or, if there are no such units or an inadequate number of them in such area, provide access to such units in neighboring areas if access to such units is feasible in terms of time and distance;

(vii) provide for the effective utilization of the appropriate personnel, facilities, and equipment of each public safety agency providing emergency services in the system's service area;

(viii) be organized in a manner that provides persons who reside in the system's service area and who have no professional training or financial interest in the provision of health care with an adequate opportunity to participate in the making of policy for the system;

(ix) provide, without prior inquiry as to ability to pay, necessary emergency medical services to all patients requiring such services;

(x) provide for transfer of patients to facilities and programs which offer such followup care and rehabilitation as is necessary to effect the maximum recovery of the patient;

(xi) provide for a standardized patient recordkeeping system meeting appropriate standards established by the Secretary, which records shall cover the treatment of the patient from initial entry into the system through his discharge from it, and shall be consistent with ensuing patient records used in followup care and rehabilitation of the patient;

(xii) provide programs of public education and information in the system's service area (taking into account the needs of visitors to, as well as residents of that area to know or be able to learn immediately the means of obtaining emergency medical services) which programs stress the general dissemination of information regarding appropriate methods of medical self-help and first-aid and regarding the availability of first-aid training programs in the area;

(xiii) provide for (I) periodic, comprehensive, and independent review and evaluation of the extent and quality of the emergency health care services provided in the system's service area, and (II) submission to the Secretary of the reports of each such review and evaluation;

(xiv) have a plan to assure that the system will be capable of providing emergency medical services in the system's service area during mass casualties, natural disasters, or national emergencies; and

(xv) provide for the establishment of appropriate arrangements with emergency medical services systems or similar entities serving neighboring areas for the provision of emergency medical services on a reciprocal basis where access to such services would be more appropriate and effective in terms of the services available, time, and distance. 25

The EMS systems defined by these fifteen mandatory components, individually and collectively, differ from the present provision of EMS in several important ways. First, this definition of an EMS system includes many components which already exist and are customarily thought of as parts of other systems (e.g. 911 telephone access to the system and patient record-keeping within the hospitals). In this type of component, the Act is making EMS requirements that may substantially affect non-EMS systems. Second, the Act seeks to insure that each component functions as a responsive unit to the performance demands of EMS. The hospital facilities component, for instance, must be collectively comprehensive and non-duplicative. Finally, the components must be connected by a set of protocols that insures appropriate treatment to patients from initial entry into the system through the provision of followup care and rehabilitation. Moreover, each EMS system must be successfully interfaced with other EMS and emergency service systems in disasters and other unique situations.

The Act, thus, embodies two expansions of the present arrangement of EMS. The Act seeks, first, to expand the hospital component to include all facilities necessary to insure comprehensive care, thus defining the size of the service area of the system in terms of the emergency care capabilities it possesses. Within the service area of this expanded hospital component, the fifteen components then expand the definition to include all aspects of

service (from the onset of symptoms in the patient to the provision of definitive care in the appropriate facility) as being part of the system. In adopting this definition of an EMS system, the Act accepted the burden of bringing to fruition on a national scale, the concept of EMS provision that previously existed only as a normative idealization, and what we have seen of the history of EMS suggests that a vast number of problems will be encountered.

Sources of Problems in the Creation of EMS Systems

In identifying potential problems faced by the EMSS Act programs, it is only necessary to look at those problems the Act intended to address -- a lack of EMS resources, past failures of federal EMS programs and the absence of a systems approach in the provision of EMS. The Act hopes to counter these problems by funding the establishment of EMS systems on a regional level, through a unified federal approach. If the Act succeeds in establishing these EMS systems, it will meet its objectives by creating foci at the federal and local levels for the attainment and maintenance of the full life-saving potentials of EMS.

Two major conceptual elements of the EMS system idealization appear to face major roadblocks in their implementation. The system idealization is based on the concepts of categorization of hospital emergency capabilities and linking prehospital components with this categorized system of facilities. The Act seeks to have these linkages -- among hospitals, and between the hospital and prehospital components -- established voluntarily as the product of a planning process. As such it envisions a process of system self-definition, where the components of the system congeal and identify themselves as a system and then proceed to operationalize this identity as an EMS system.

We have seen that previous voluntary federal EMS efforts, without strict enforcement of standards or legislative guidance on the state and local levels have resulted in fragmentation rather than coordination. The identity that emerged was a parochial one absorbed into systems other than EMS. This observation reveals a precedent of failure in the self-definition process of the EMSS Act program.

There are, however, three major differences between the EMSS Act program and the federal EMS efforts that preceded it. First, because it is an EMS program, the local efforts that it generated would identify with the EMS system, as compared with previous federal efforts that fostered identification with the transportation or other systems that sponsored EMS activities. Second, the EMSS Act program integrates a planning process with the implementation process -- a combination that has yet to be attempted in federal EMS efforts and may contribute to its success. And, finally, it is designed to establish regional EMS systems, with the corresponding regional self-definitional and planning processes. In order to evaluate the EMSS program, it is necessary to weigh these three differences, unprecedented in previous federal EMS efforts, against the failings of these previous programs.

FOOTNOTES FOR CHAPTER ONE

1. National Academy of Science-National Research Council, Roles and Resources of Federal Agencies in Support of Comprehensive Emergency Medical Services, (Washington: NAS-NRC, March 1972), p. 3. See also National Safety Council, Accident Facts (Chicago: National Safety Council, 1971), and Committee on Trauma and Committee on Shockm Division of Medical Sciences, Accidental Death and Disability: The Neglected Disease of Modern Society (Washington: NAS-NRC, 1966).
2. Testimony of Dr. Peter Safar, Preseident of the Society of Critical Care Medicine, in U.S. Senate Committee on Labor and Public Welfare, Emergency Medical Services Systems Development Act of 1973: Hearing before the Subcommittee on Health, (Washington: U.S. Government Printing Office, January 31, Frebruary 1, March 9, 12, 1973), p. 310.
3. National Academy of Science-National Research Council, Accidental Death and Disability: The Neglected Disease of Modern Society (Washington: NAS-NRC, 1966)
4. See, for example, NAS-NRC, Roles and Resources, p. 4.
5. This is reflected by the focus of atricles in popular magazines, which devoted much attention to mistreatment of patients by ambulance attendants and lack of proper equipment in ambulances. See, for example, Irwin Ross, "Needed: First Aid for Ambulance Ser- vices," Readers Digest, February, 1967, condensed from Empire, January 1967, and Charles and Bonnie Remsburg, "What are Your Chances in a Medical Emergency?", Good Housekeeping.
6. Statement of James E. Wilson, Associate Administrator, National Highway Traffic Safety Administration, Department of Transportation, in Hearings before the Senate Subcommittee on Health, 1973, pp. 60, 145-153.
7. Testimony of James E. Wilson, DOT, U.S. House of Representatives Committee on Foreign and Interstate Commerce, Emergency Medical Services Act of 1972: Hearings before the Subcommittee on Public Health and the Environment (Washington: U.S. Government Printing Office, June 13, 13, 15, 1972) p. 123.

FOOTNOTES FOR CHAPTER ONE, continued

8. Pursuant to the Nation Highway Safety Act of 1966, DOT promulgated, in 1967, a set of standards for highway safety programs. One of the standards, Standard 11, dealt exclusively with emergency ambulance standards, indicating steps to be taken by state highway safety programs to improve EMS. Standard 11 reads as Follows:

"Emergency Medical Services Highway Safety Program--Standard 11
Purpose

To provide an emergency care system that will:

- I. Provide quick identification and response to accidents.
- II. Sustain and prolong life through proper first aid measures, both at the scene and in transit.
- III. Provide the coordination, transportation, and communications necessary to bring the injured definitive medical care together in the shortest practicable time, without simultaneously creating additional hazards.

Standard

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

- I. There are training, licensing, and related requirements (as appropriate) for ambulance and rescue vehicle operators, attendants, drivers, and dispatchers.
- II. There are requirements for types and numbers of emergency vehicles including supplies and equipment to be carried.
- III. There are requirements for the operation and coordination of ambulances and other emergency care systems.
- IV. There are first aid training programs and refresher courses for emergency service personnel, and the general public is encouraged to take first aid courses.
- V. There are criteria for the use of two-way communications.
- VI. There are procedures for summoning and dispatching aid.
- VII. There is an up-to-date, comprehensive plan for emergency medical services including:
 - A. Facilities and equipment.
 - B. Definition of area of responsibility.
 - C. Agreements for mutual support.
 - D. Communications systems.
- VIII. This program shall be periodically evaluated by the State and the National Highway Safety Bureau shall be provided with an evaluation summary."

9. Testimony of Frederick J. Lewis, National Highway Traffic Safety Administration, DOT, before the House Subcommittee on Public Health and the Environment, 1972, p. 113.

FOOTNOTES FOR CHAPTER ONE, continued

10. See written testimony of James E. Wilson, DOT, before the Senate Subcommittee on Health, 1973, p.225, 232.
11. See, for example, the Statement of Senator J. Glenn Beall, Jr., in hearings before the Senate Subcommittee on Health, 1973.
12. Division of Emergency Health Services, Hospital and Ambulance Services Branch, DHEW, Availability of Federal Funds for Operation of Ambulance Services, March 1969.
13. Several times during the hearings, reference was made to "jurisdictional disputes" that occurred when two ambulance companies arrived at the scene of a call for service simultaneously. On these occasions, arguments would ensue over whose patient it was, often to the discomfort of the patient. See, for example, the statement of Congressman Lawrence J. Hogan, before the hearings of the House Subcommittee on Public Health and Environment, . 47.
14. The federal role in EMS was the subject of much discussion in the Congressional hearings, both in 1972, and 1973. The opinions expressed by congresspeople were unanimous in their criticism of past efforts. While most congresspeople who discussed the issue were appreciative of the attempts that had been made, they were highly displeased by the outcomes. For particular examples of criticism, see the testimony of Congressman Howard Robison (House Subcommittee on Public Health and the Environment, 1972, p. 38) and Senator Alan Cranston (Senate Subcommittee on Health, 1973, p. 314). Medical societies and publications also had extensive criticism of the fragmented federal role (see testimony of Dr. Peter Safar, Society of Critical Care Medicine, and C.T. Thompson, American College of Surgeons, in hearings before the Senate Subcommittee, 1973, pp. 314 and 224, respectively).
15. Committee on Trauma, American College of Surgeons, Guidelines for Design and Function of a Hospital Emergency Department (Chicago: American College of Surgeons, 1970), p. 9.
16. Geoffrey Gibson et al, Emergency Medical Services in the Chicago Area, (Chicago: University of Chicago, 1970), p. xxiii.
17. From testimony of Merlin K. Duval, Assistant Secretary for Health and Scientific Affairs, DHEW, before the House Subcommittee on Public Health and the Environment, 1972, p. 52.

FOOTNOTES FOR CHAPTER ONE, continued

18. This pattern of hospital utilization arose from a wide variety of causes, but the most commonly mentioned reason is the shortage of primary medical care outside the hospital. In 'Hospital Emergency Room Utilization in Michigan', Henry Vaughan and Charles Gamester (Inquiry Vol. III, No. 2) identify a number of manifestations of this shortage, among them an increasing number of patients without family physicians, reluctance of physicians to make house calls, and a shortage of general practitioners.
19. American College of Surgeons, Committee on Trauma, Guidelines for Design. . . . p. 10.
20. See, for example, The House Physician Reporter, submitted as documentary evidence to the Senate Subcommittee on Health, 1973, pp. 927-930.
21. The categorization concept was the first step in the development of the normative model of EMS provision that is embodied in the EMSS Act policy.
22. The American Medical Association first issued standards for hospital categorization in 1967. Since that time, a large number of medical professional organizations have adopted the AMA standards, among them the American Hospital Association, the American College of Emergency Physicians, the American College of Surgeons, and the Society for Critical Care Medicine.
23. Figures cited earlier in the chapter estimate that as many as 200,000 deaths occur annually due to inadequate emergency care before reaching the hospital.
24. See, for example, AMA, Recommendations of the Conference on the Guidelines for the Categorization of Hospital Emergency Capabilities (Chicago: AMA, 1971), Proceedings of the Airlie Conference on Emergency Medical Services, Emergency Medical Services: Recommendations for an Approach to an Urgent National Problem (Warrenton, Va.: Airlie House, May 5, 1969)
25. Section 1206 (b)(4)(C), parts i-xv, of the Public Health Service Act as amended by Public Law 93-154, The Emergency Medical Services Systems Act of 1973.

CHAPTER TWO
REGIONALIZATION

In response to the EMSS Act of 1973, federal EMS policymakers are actively advocating regionalization as a means to rationalize emergency medical services. The federal commitment to promote regional EMS systems is reflected in the funding regulations of the Act. The regulations require large geographical areas, defined around hospital care capabilities, to address the fifteen mandatory components of a comprehensive EMS system. As constituted in the mandatory components of the EMSS Act, regional EMS systems require an expansion of the types of services included in an EMS system, as well as the expansion of geographical boundaries of the system. An EMS "region" should, in this perspective, be able to unite the EMS components within the medical-geographical limits of the system. Program guidelines for the EMSS Act list 4 critical factors for use in defining the extent of EMS regions:

- "(1) It must be contiguous with other EMS regions.
- (2) It must be medically competent.
- (3) It can be described by established geo-political lines.
- (4) It must have sufficient population, resources, and financial support to sustain an EMS system."

These factors combine to define the geographical size of EMS regions in terms of the medical and organizational resources within its boundaries.

The federal commitment to both larger geographical units and broader inclusion of services reflects the federal attitude that EMS regionalization could effect two key changes in the provision of emergency care. First, in a larger jurisdiction, a major upgrading of the individual EMS components might occur due to the increased resources available for purchasing equipment, sponsoring training programs, etc. Second, the

coordination of these emergency medical services into a "regional system" could transpire if all the components of the system were addressed by the one larger jurisdiction responsible for the EMSS Act grant. As a result, the concurrent upgrading and coordination efforts could alleviate many of the problems perceived in EMS, such as poor quality vehicles, untrained ambulance attendants, duplicative and ineffective hospital care, and a general lack of communications among the components. These problems, individually recognized and addressed in federal programs, have molded the application of the regional concept to EMS.

The Evolution of Regionalization in Federal EMS Initiatives

The present concept of regionalized EMS systems developed from the failures of previous federal efforts to motivate substantial changes in emergency medical services. The shift in federal policy from upgrading single EMS components to upgrading the whole "system" in a region is reflected in the present federal description of an EMS system as an "arrangement of personnel, facilities and equipment for the effective and coordinated delivery of health care services in an appropriate geographical area under emergency conditions."² The significance of this definition lies in the way it affects the operation and organization of EMS, especially since the EMSS Act supports and encourages the development of EMS systems that conform to the federal definition.

The notion of a coordinated arrangement of EMS is a recent concept, emerging as a fully-articulated program element only in the EMSS Act. In the past, EMS components operated in isolation from each other, and federal legislation and programs accepted this operating structure in supporting local services. For example, the first federal attempt to

generate widespread interest in EMS, the DOT Highway Safety Program, which focused only on highway and traffic related EMS, motivated interest in subsidies for new vehicles but did little to coordinate their operation at the local level. The next major federal EMS Initiative, in 1972, arose in the Executive Branch. Although its intent may have been highly political (to head off the pending Congressional action on categorical grants for EMS), the Initiative recognized the lack of substantial changes in the way EMS was provided, and instituted a more aggressive policy toward encouraging systematic change in EMS organizational structure and technology.

The programs offered in the 1972 "EMS Initiative," sponsored by the DHEW, represented a shift in federal sentiment that favored an EMS policy which concentrated on more than one aspect of EMS. The new federal policy explicitly recognized EMS as a part of the health care system, and provided strong motivation for more coordination in and among the EMS system components. The Initiative provided funds for developing demonstration projects of "advanced EMS systems" and planning projects for regional and subregional "comprehensive EMS systems."³ In this program, the government assumed that larger, regional systems of EMS agencies could more effectively accomplish improvement in EMS than would piecemeal efforts of many dissociated local agencies.

This initiative modified the image of an EMS system in two ways, which created the base for the EMSS Act policy. First, the geographical area to be considered as a coherent EMS system was expanded and defined in regional terms for the first time. Second, the boundary which circumscribed the services to be included in an EMS system was expanded to encompass those

services necessary for prehospital care, transportation, communications and coordination. This major shift in federal policy is reflected in the recipients of the grants who were primarily state, multi-county areas, and Regional Medical Programs. The fact that Regional Medical Programs, which encompass areas which range from several counties to several states, were the recipients of the planning project grants indicated that federal policy makers had taken the approach that larger areas were the appropriate size for regional EMS systems.

In federal circles the DHEW demonstration programs were proclaimed successful in establishing regional EMS systems, thus reinforcing the federal commitment to regionalization as an effective way to organize EMS.⁴ The statistics that were cited in support of these programs made reference to the numbers of lives saved and reduced deaths per injury, which served as appealing indications that future programs should duplicate their demonstration "models" in other places. Unfortunately, the RMP program was discontinued at the same time that regional EMS was being pushed, preventing widespread dissemination of information about their EMS programs. As a result, the strategies and the problems that they encountered were never made part of the public knowledge of EMS programs. This is critical in evaluating the EMSS Act, which adopted many of the same approaches in its efforts to establish and upgrade EMS systems.

All that had been learned from previous federal initiatives was brought together in the EMSS Act of 1973. The legislation was designed to have a strong influence on the provision of EMS services through a combination of a discretionary grant management policy with a strongly articulated regional philosophy. It was made clear that only proposals which reflected a firm move toward regionalization would be considered in the funding process,

and that only those regions which were of "appropriate size" and addressed all the 15 mandatory components would be funded.⁵ States and multi-county areas, moreover, were favored in the proposal review process, which indicated that the expansion of the region size was also necessary to ensure that the entity responsible for the EMS system had sufficient authority and resources available to maintain a large complex system.

The rationale for making regionalization the focus of the Act's program stemmed from the desire to organize EMS around the capabilities of hospital emergency facilities. Implicit in the notion of comprehensive regional EMS systems was the realization that boundaries of hospital service areas did not coincide with the boundaries of counties, municipalities, communications systems or ambulance services. Moreover, the hospital component in most regions would require the specialized capabilities of several facilities in order to include the comprehensive range of treatment required to be "medically competent." These requirements result in hospital services that are comprehensive at the regional level, which, because the systems were centered on the hospitals, also indirectly necessitated the expansion of the prehospital component.

The expansion of prehospital services required by the Act paralleled the hospital expansion in two ways. First, by their inclusion in the hospital-centered EMS systems, prehospital components were to be coordinated. and, by inference provided for a regional service area. Also, because of the new specialized profile of the hospital component, the prehospital services had to develop more sophisticated coordination and treatment capabilities, in order to link effectively with the specialized hospital facilities. This second expansion is reflected in many of the Act's mandatory attributes for prehospital care that are not currently in

existence in most EMS systems.⁶

In the pursuit of this expanded definition of EMS, the Act is seeking to accomplish simultaneously two distinct objectives--the regionalization of EMS through the provision of hospital and prehospital functions at a regional level, and the integration of these two functions into a service system. Moreover, the Act asserts that these two objectives are inseparable with the contention that a comprehensive regional hospital network is fundamental to EMS systems. The provision of the hospital and prehospital functions at a regional level assumes the successful completion of an extremely complex and difficult step in the implementation of regional EMS systems--the removal of responsibility for these functions from their present local jurisdictions and the allocation of this responsibility, instead, to a newly defined regional service system. From this viewpoint, regionalization can also be perceived as a strategy to allocate EMS services to different institutions or government agencies in a systematic manner. The issues involved in reallocating service functions to different jurisdictions and scales of operation have previously been encountered in a wide range of services, and the literature that these encounters have generated serves to outline the issues that we can expect in reallocating the hospital and prehospital functions of EMS to the regional level.

Regionalization and Functional Allocation of Services

There has been much literature written on the allocation of municipal services to government levels. In particular, the Advisory Commission on Intergovernmental Relations (ACIR), a government agency that studies the problems impeding the effectiveness of the federal system, had produced

numerous volumes on regionalism and the assignment of public service responsibilities to state, local and areawide units. The thrust of ACIR research has been to attempt the development of normative criteria for judging the efficacy of particular allocations, based on characteristics of the service in question and the institutional context of its provision. An examination of the ACIR criteria can provide us with a broader perspective of the potential benefits and problems involved in the reallocation of EMS services to the regional level. This section presents a summary of the results of the ACIR research and other pertinent literature and its applicability to the regionalization efforts of the EMSS Act.

The literature on regionalization and functional allocations reflects the increased importance of these strategies in the formulation of federal, state and local policies for the provision of governmental services. Increasing numbers of programs are utilizing these strategies to centralize or decentralize services in attempts to increase the efficiency and effectiveness of expenditures for their provision. These strategies cause constant shifts and alterations in the relationships between the different levels of government and generate constant pressures for change in the provision of services. The ACIR attempted, through its research, to develop means for assessing the effectiveness of changes in functional allocation, and criteria for analyzing the effects on intergovernmental relationships that arise. They hoped to develop a typology of situations in which functional reallocation would be beneficial in terms of improved service, or detrimental in terms of severe disruption of intergovernmental relations. In this way, the ACIR seeks to avoid the undesirable effects of unsystematic allocations of functions to the different levels of government.

The ACIR has identified a number of adverse results that can occur from

allocating functions to inappropriate jurisdictions, and the potential for alleviating these conditions often plays a substantial role in the debate over functional reallocation. Their research contends that misallocations can result in services with unnecessarily high costs of provision, low levels of quality, and restricted scope of operation. Furthermore, the ACIR points to severe problems of gaps and faulty distribution of services that occur from a lack of coordination in service delivery.⁷ Finally, an improper allocation of service responsibility can create a substantial mismatch between the recipients of benefits and the bearers of costs of service provision. The ACIR has defined the governing variable in determining the presence or absence of these conditions to be the geographic and jurisdictional scale of service provision. In particular, they have focused research on the economic, political and administrative implications of different scales of service provision. To delineate the characteristics and capabilities of different jurisdictions and scales of service, the ACIR explored issues of economic efficiency, fiscal equity, administrative effectiveness and political accountability.⁸ In examining these issues, the ACIR uncovered many of the conceptual bases of the public debate over altering the governmental scale of service provision, some of which are critically important in consideration of regional EMS.

These four criteria are designed to serve as guidelines in determining the level and type of government to which a function is to be allocated. In their treatment of economic efficiency, the ACIR seeks to identify parameters which will insure that government functions are allocated to jurisdictional levels that can minimize the unit cost of service provision. The three parameters of economic efficiency identified by the ACIR--

economies of scale, service competition, and public pricing⁹--are designed to insure that the jurisdiction is large enough to incorporate technology and specialized personnel in a higher quality service with lower unit costs than smaller jurisdictions without these capabilities, small enough that service provision does not become monopolistic, and sufficiently competent that costs remain relatively stable. The criterion of fiscal equity specifies that the jurisdiction should be tailored to the function in such a way that the boundaries of service also delimit the extent of costs and benefits.¹⁰ Also, the jurisdiction should be sufficiently broad to insure that disparities in cost and service levels are eliminated internally and interjurisdictionally. Political accountability tends to require smaller jurisdictions with services more amenable to citizen access and control.¹¹

The final criterion, administrative effectiveness, addresses the characteristics of jurisdictions in five parameters--general-purpose character, geographic adequacy, management capability, intergovernmental flexibility and legal adequacy.¹² From the ACIR perspective, a jurisdiction, in addition to being large enough to adequately provide and administer particular services, should administer a variety of functions to allow the development of comparative priorities, and require appropriate evaluation and performance standards. The jurisdiction should be willing to venture into innovative intergovernmental policies and have adequate legal authority to insure the execution of its functional responsibilities.¹³

Problems with Functional Allocation Criteria

The ACIR allocation criteria are intended to serve as a normative guide and first step in the functional assignment process, which continues

with the selection of institutions to provide the functions, and the choice of functions to be distributed to these institutions.¹⁴ This process, as envisioned by ACIR, is thus a highly idealized and static representation of the extremely complex process of shifting allocations among jurisdictions. The Commission has placed a major emphasis on the investigation and documentation of numerous regional service mechanisms (such as special purpose districts, regional councils, metropolitan governments, etc.) as applications of their criteria. However, although the criteria are intended to provide a systematic formula for allocation, the dynamic process of achieving the normative functional assignment has been largely ignored.

The ACIR has made several statements about the dynamics of functional allocation in support of their recommendations for federal standards in the area.¹⁵ These statements have served to indicate some of the problems that might be encountered at the local level in performing reassignments, but they have been restricted to the context of local responses to particular proposed regional mechanisms--e.g. the problems to be faced in instituting metropolitan government. Thus, the usefulness of the ACIR literature in our study is limited in one respect to the assessment of the appropriateness of the EMSS Act's assignment of EMS to the regional level, and offers little guidance in evaluating the process of achieving that allocation. The Commission has performed such an assessment on certain other aspects of health and medical services and an examination of their assessment reveals several other limitations on the usefulness of their research for our purposes.

The ACIR has applied their allocation process to the public health function¹⁶ and the governmental hospital function,¹⁷ with the result that

two principle differences emerge from their general approach that are important in our consideration of EMS regionalization. In the public health allocation, they proposed the delineation and individual allocation of sub-functions of public health, suggesting that such sub-functions as immunization and records-keeping might properly be performed on different jurisdictional levels.¹⁸ Their treatment of governmental hospital, while it relates more directly to the EMS system, reveals a fundamental difficulty in applying the ACIR research to the EMSS Act's functional reassignments. In this treatment, they explicitly recognize the limitations of public sector attempts to reallocate private sector functions in their conclusion that "governmental hospitals should be planned in relation to non-governmental hospital services."¹⁹ In adopting this approach, the Commission defined the public sector role in areawide hospital services to be the correction of any gaps and deficiencies that private sector services might have developed. This is in marked difference to the Commission's treatment of public sector functions, because it further decreases the dynamic aspects of functional allocation criteria with its assumption that the scale of existing private sector services defines the jurisdictional scale of the hospital service function.

The implications of these considerations--multiple functions within public health services and the mixture of public and private sectors in hospital services--are indirectly treated in other literature on the scale of health provision.²⁰ A major focus of this literature is the problem of fragmentation arising from "local home rule" provision of health care and the gaps and disparities in service that result. These treatments, and Duhl in particular, advocate the creation of "linkings" among health care sources for particular sub-functions of health care. But

they, too, deal inadequately with the dynamic process of creating the links. Duhl points to the particular problem of this process by noting the lack of a jurisdictional hierarchy in local health care provision, which, he says, necessitates the voluntary development of "multi-level authorities" to solve areawide problems.²¹ But this constitutes one of the few models for developing regional systems of health care delivery, and both Duhl and Dinerman shy away from the "political factors integrally related to any proposed functional reorganization."²² The literature of regionalization is thus, rather limited in its application to the particular problems involved in the establishment of regional EMS systems envisioned by the EMSS Act, because, in fact, it ignores the problems of implementation.

The Regionalization of EMS

In our discussion of regionalization literature, we have identified three distinct problematic areas fundamental to the outcome of the EMSS Act--the allocation of service functions to jurisdictional levels, the process of achieving the desired allocation, and the institutional relationships required to establish and maintain a particular allocation. The ACIR has dealt extensively with public sector functional allocation.

In applying their research to the question of EMS regionalization, we encounter severe deficiencies because of the accompanying shift to private sector service provision of critical components (hospitals) of the proposed EMS system. The criteria of economic efficiency and administrative effectiveness tend to support the regional approach to EMS provision, with its requirements of highly specialized facilities and sophisticated management capabilities. However, these considerations address only the characteristics of service provision and ignore the demand characteristics of the

service. In the public sector, the criteria that support enlarged service areas, such as economic efficiency and administrative effectiveness, are balanced by public equity and political accountability considerations which, in some cases, can dictate smaller region sizes. But the private sector provision of EMS components, particularly the hospital services, raises a different set of client-oriented considerations which are not addressed by existing regionalization literature. Hence, the assumption that EMS should be allocated to a regional level is highly problematical in the normative context of this literature, since only service supply issues have been addressed in ways appropriate to EMS.

We have seen that the process of achieving a regional-level allocation has been inadequately addressed by the literature. The EMSS Act adopts an implementation model similar to the one described by Duhl,²³ in which the different providers are brought together voluntarily to bring about regional service provision. However, this consensual model has not been thoroughly articulated, and many of the fundamental and institutional problems involved in such a process are virtually uncharted.

Finally, the EMS regionalization proposed by the Act raises unique problems in the institutional relationships it seeks to establish at the regional level. The Act is designed to develop a regional service from components currently provided in both the public and the private sectors, and which involve institutions with widely diverse concerns and priorities. The Act seeks to extend this consensual implementation model to bring these services into conformity with the goals of regional EMS systems, and then to develop this consensus into a management and administrative capability at the regional level, for services whose jurisdictions had been almost exclusively at the local level. This approach to the integration of

multi-disciplinary services is highly problematic, and largely untouched in the literature.

Our thesis, then, seeks to explore the regionalization of EMS, in an attempt to expand the analysis of these problematic areas and to understand their implications for the effectiveness of the federal EMS policy embodied in the EMSS Act.

FOOTNOTES FOR CHAPTER TWO

1. U.S. Department of Health, Education, and Welfare, Emergency Medical Services System: Program Guidelines, DHEW Publication No. (HSA) 74-2009, Revised January 1975, draft.
2. DHEW, What is an Emergency Medical Services System?, pamphlet, DHEW Publication No. (HSA) 75-2002, 1975.
3. DHEW, position paper, Emergency Medical Services, as documentary material for testimony before the Senate Subcommittee on Health, 1973, p. 245.
4. Ibid, pp. 480-519. See also, Boyd, et al, "Status Report: Illinois Statewide Trauma Care System", Illinois Medical Journal, 141-56-62, January 1972.
5. DHEW, Program Guidelines
6. For example, the Act specifies that a regional communications system is a mandatory component of an EMS system, and that a communications system should provide for central dispatch, medical consultation with hospitals, etc. However, as the American College of Emergency Physicians has pointed out (in Hearing before the Senate Subcommittee on Health, 1973) in their EMS Position Paper, only 6 percent of the nation's ambulances can communicate directly with the hospital (as of 1973). It is thus safe to assume that the communications component is "not currently in existence in most EMS systems". Other components (of the 15 mandatory elements of an EMS system) that are in similar states are training, citizen participation, standardized recordkeeping, review and evaluation, and disaster planning.
7. Advisory Commission on Intergovernmental Relations, Governmental Functions and Processes: Local and Areawide, Volume IV, Substate Regionalism and the Federal System, (Washington, U.S. Government Printing Office, February, 1974), p. 5.
8. Ibid, p.7.
9. Ibid, p. 7.
10. Ibid, p. 7.
11. Ibid, p. 8.
12. Ibid, p. 7.

FOOTNOTES FOR CHAPTER TWO, continued

13. Ibid, p.8.
14. Ibid, p. 16.
15. Ibid, p. 16.
16. Advisory Commission on Intergovernmental Relations, Performance of Urban Functions: Local and Areawide (Washington: U.S. Government Printing Office, 1963), pp. 144-156.
17. Ibid, pp. 157-170.
18. Ibid, p. 155.
19. Ibid, p. 19.
20. See Beatrice Dinerman, et al, Metropolitan Services: Studies of Allocation in a Federated Organization (Los Angeles: Univeristy of California, 1961), Charles Haar, et al, Metropolitanization of Public Services, No. 3 in a series on The Governance of Metropolitan Regions (Baltimore: Resources for Future, Inc., 1972), Robert Highsaw and John Dyer, Conflict and Change in Local Government, (Birmingham: University of Alabama, 1965) Chapter 4.
21. Leonard Duhl, "A New Look at the Health Issue", in Haar, et al, p. 51.
22. Beatrice Dinerman, "The Public Health Function", in Dinerman, et al, p. 13.
23. Duhl, p. 50.

CHAPTER THREE

METHODOLOGY

Questions for Research

The primary goal of our thesis is to develop an understanding of the federal assumptions about the institutional structure and nature of EMS provision and determine the impact of federal EMS regionalization policy on this structure. The EMSS Act in particular, provides criteria for defining the appropriate size of an EMS region centered around hospital care capabilities, provides a normative set of mandatory components, describes the planning process needed for developing EMS systems, and proposes the interinstitutional relationships necessary to create a regional hospital-centered EMS system. It is these characteristics of the Act that appeared to be the essence of the federal EMS policy. However, it was also these characteristics that we sensed as the most problematic and ambiguous aspects of the EMSS Act. In order to assess these assumptions, we conducted an empirical investigation in a North Shore region of Greater Boston that attempted to implement the federal regionalization policy. We designed three major questions, based on the problematic characteristics noted above, to guide our research:

- (1) Did the federal definition of an EMS region translate to the local level?
- (2) What was the nature of the planning process used to develop the regional EMS system in the area we studied?
- (3) Did the federal definition of the essential institutional relationships in a regional EMS system translate to the

local level: in the outcome of the planning process?
in the outcome of the implementation process?

Is the Federal Regional Definition Applicable?

In order to determine if the area we studied was a valid EMS region, we applied the federal EMSS Act guidelines to the Area's characteristics. Since we were addressing an area that had been defined by local EMS planners as an EMS region, our first question was: What criteria had these planners used to define the region? Then, given these geographical boundaries, we applied the federal EMSS Act criteria: "Is the region contiguous with other EMS regions? Is it medically competent? Can it be described by established geo-political boundaries? Does it have sufficient population, resources, and financial support to sustain an EMS system?"¹ We believed that if we established the area as a valid federally defined EMS region, we could then apply the rest of the Act's regionalization criteria to our region.

We also wanted to sense the reasonableness of allocating EMS to the regional level in much the same way as the ACIR (see Chapter 2) viewed the allocation of other service functions. This assessment was performed by using indicators that had been suggested by the ACIR analysis. Once we had determined whether our region was valid according to the EMSS Act's standards we wanted to know what benefits or costs resulted from the geographical expansion of the EMS systems' boundaries, beside meeting EMSS Act regulations. Also, one of the critical assumptions in the funding requirements of the Act was that larger areas were more appropriate for the organization of EMS systems, an assumption that we wanted to test against the increased managerial, administrative, and

planning capabilities. Our last question, then, asked: As a result of meeting, at least minimally, the EMSS Act's regional definition, does the region so defined have the regional institutional base, planning expertise, management capability, or the ability to create incentives necessary to develop a regional EMS system?

Nature of the EMS Planning Process?

We also saw the nature of the planning process proposed by the EMSS Act as potentially problematic because it relied on a rather broad model which did not appear to reflect the complexity of creating regional EMS systems. In addition, we believed that the planning process would be a rather critical operation in creating EMS systems, and as a result, we wanted to discover the variables which described the nature of the process. We sensed there might be a linkage between the way the system was planned and the potential for implementation, so that an understanding of the planning process would also assist in understanding the implementation process. Since the EMSS Act made special mention of the requirement that EMS providers and consumers be represented in the planning process, we thought an examination of the process would reveal some interesting patterns describing the interrelationships between the various actors, their institutions, and their interests in a regional EMS system.

The set of questions we developed to investigate the nature of the planning process were: What critical values guided the planning process? Who were the participants? What interests did they represent? What roles did they play? How did the participants interact in the planning process? What mechanism was created or existed for this interaction? What institutions did the mechanism presume would implement their plans?

Essential Regional Institutional Relationships?

In our last question we attempted to address the outcomes of the planning and implementation processes. In the planning process we were interested in viewing the plans that resulted in terms of the necessary regional interinstitutional relationships specified in the EMSS Act. In particular, we wanted to know if the structure proposed by the planning process to run the regional EMS system, had the necessary relationships with the institutions currently providing EMS to insure that EMS would be coordinated and provided at the regional level.

An important assertion of the EMSS Act was that the components of an EMS system had to be integrated through an appropriate regional agency, so that the EMS resources in the area could be utilized effectively to meet the needs of the area. These components fell into two major groups, the prehospital and hospitals systems. Therefore, we wanted to know if the planning process had generated plans that addressed the necessary relationships between the prehospital components, the hospital components, and the necessary linkages between these two groups of systems. These questions served essentially as a reality check between the outcome of the planning process and the idealized regional system embodied in the EMSS Act. We wanted to further validate our region in light of the EMSS Act requirements and pursue the link between the results in our region and the expected outcome of the EMSS Act.

The second and most critical area of concern was the result of the implementation efforts. Our previous questions had determined whether we could consider our region a legitimate one according to federal standards, and now we wanted to see if the expected outcome of the regional

systems defined by the Act were in fact the same outcomes we witnessed in our region. But first, we needed to ask: Did the structure proposed by the planning process require major changes in the institutional structures that currently provided EMS? If major changes were required, it might indicate that the implementation process needed to take extra account of the magnitude and character of the changes.

We also wanted to document the degree to which the necessary changes had been implemented. After this documentation was complete, the following questions were asked: What issues determined the implementation of the changes? Did the planning mechanism address these issues? What incentives did they use? Did the implemented structure have the necessary regional institutional relationships (according to the Act)? This last set of questions would answer the overall question: Can the EMSS Act achieve its goal of creating hospital-centered regional EMS systems?

Our questions, then, look at the federal EMS policy, in terms of the EMSS Act, examine the problematic aspects of the concept, the target of the concept (that is, the institutional structure of EMS provision), and finally, the outcome of applying the concept to the EMS institutional structure. By assessing the policy and its outcome at the local level we can begin to understand the critical elements of the regional EMS concept that promote or inhibit its implementation and the implications of these outcomes for designing future interventions in the EMS system.

Development of the Case Study

Despite the recent increase in funding programs for regional EMS systems development (EMSS Act, Robert Wood Johnson Foundation), little empirical research has been conducted on the organizational and institutional aspects of the regional EMS systems concept that has evolved from past federal initiatives. This organizational structure, based on hospital emergency capabilities, is essentially untested from an institutional analysis perspective. Moreover, the information that exists about the operation of EMS systems has not been used to generate theories about how regionalization of EMS works. The latest federal initiative, the EMSS Act, which required the development of regional hospital-based EMS systems, seems to have been based on medical perceptions of the problems confronting EMS and Congressional desire for a well-funded federal role in EMS. This theory of EMS systems organization focuses on hospital resources as the critical variable for defining the EMS system, and overlooks the political and institutional variables within an EMS system that determine the implementability of the hospital-based systems concept.

EMS is not the only service system which has used regionalization theories to determine an appropriate organizational structure for the provision of services.² A considerable amount of literature on the regionalization of municipal services has been generated by the Advisory Commission on Intergovernmental Relations in an attempt to systematize a set of criteria for the allocation of functional provision of municipal services.³ Translated into the EMS system context, this allocation procedure would determine the best governmental level (local, county,

metropolitan, state) for the provision of ambulance services, hospital emergency care, communications, and all the other components of an EMS system.

There are two major problems with this translation. First, hospital-based regional EMS systems orient the system around the supply of specialized hospital care in EMS provision. This emphasizes the economies of scale criteria of the ACIR regionalism theory because the focus argues it is economical to have specialized emergency departments which are organized to collectively provide all the emergency health care that is needed. The predominance of the economies of scale variable in the definition of regional EMS systems makes the remainder of the ACIR regionalism theory inapplicable. Second, the hospital basis of regional EMS systems places the focus of service provision in the private sector which nullifies the political analysis performed by ACIR. In addition, the ACIR literature addresses the municipal service sector, so a private sector emphasis makes it impossible to readily adapt the ACIR research to EMS systems based in the private sector because of the fundamental differences between the economic structures of the two sectors. As a result of these fundamental differences between hospital-based EMS regionalization and the existing literature on regionalism, it is evident that we cannot "borrow" the theoretical models of municipal service regionalism organization to investigate regional hospital-based EMS systems.

In order to develop our own theoretical model of EMS regional organization, we conducted an exploratory investigation using a holistic approach.⁴ This approach is used to study complex situations in assessing the "nature of a total system, rather than of a particular process within

the situation."⁵ EMS systems appear to be complex situations containing an underlying structure of interrelated elements.⁶ The holistic approach, then, is used in our study to determine the general characteristics of hospital-based regional EMS systems and the critical variables that define and operate within these systems, rather than test any preconceived hypotheses.

We chose the Greater Lynn area as the object of our investigation because of its proximity and because it appeared to include most of the 15 mandatory system components of the EMSS Act. In addition, Greater Lynn is part of the jurisdiction of the North Shore Health Planning Council, a regional agency that is presently executing the Massachusetts program supported by EMSS Act funds. Therefore, we believed we would be able to observe the planning and implementation of many of the assumptions behind the EMSS Act. Finally, we were aware of an attempt to regionalize ambulance services in the Greater Lynn area, which would permit us to investigate the potential of the federal EMS strategy to effectuate change in the provision of EMS. The organization of our research design to carry out this study is described in the next section.

Organization of the Research

The research design for the case study involved four major tasks: (1) compiling all the written material which described the state, regional, and Greater Lynn EMS-related activities; (2) interviews with the program participants at the local, state, and federal levels, (3) participant-observation of parts of the EMS activities; and (4) analysis of the combined data described above.

These tasks were not performed in the order cited because we entered the situation at a period when a proposal to regionalize the transportation services in the Greater Lynn Area was being reconsidered, allowing us to witness first-hand some of the activities and meetings that transpired during these renewed efforts. Therefore it was necessary to acquire a background knowledge of the circumstances of the regional ambulance service attempt, attend the numerous meetings, and develop contacts with the EMS program participants in the Area at the same time. In addition, our desire to investigate all the possible interrelationships that existed in the region required that we continuously request referrals and follow these leads.

We had to be careful in our approach to local interests because the regional transportation system was still an ongoing and delicate process in Greater Lynn. In fact we were instructed to be cautious in who we approached and in the questions we asked. We were concerned that the sensitivity of the situation would make it difficult to obtain information, especially the hidden issues in the regional transportation efforts. We found, however, that people were willing to freely discuss their opinions and interests and in addition, permitted us to attend several strategic planning meetings which were both private and highly political. Our immediate involvement in the ambulance planning activities facilitated our acceptance by the EMS providers in Greater Lynn. Once we were recognized as part of the network of people interested in EMS, our presence at meetings was never questioned and our questions were answered with extreme cooperation.

Although our initial introduction to the region was through the North Shore Health Planning Council, we made extensive use of the local

newspapers for articles that had appeared on EMS in Greater Lynn. This gave us an introduction to the events and activities that had transpired in the past several years and a list of people who had been involved in EMS efforts. Our first concern was how we were to present ourselves to EMS providers and decisionmakers in the Area. We decided to initiate our own contacts and avoid affiliations with any of the EMS interest groups in the Area. As a result, we were able to solicit data about the hospitals, ambulance services, and interest groups in the towns from many different perspectives.

A major part of our research plan was to conduct extensive interviews with all people who had any association with EMS activities in Greater Lynn, in order to collect as much data as possible to assist our identification of the underlying patterns of interrelationships. We did not want to rely solely on newspaper articles, EMS planners' opinions, or second-hand accounts. Our set of interviews for each town relevant to the case study typically included:

- representatives from the ambulance service (municipal or private)
- representatives from the hospitals (administrators and doctors)
- elected town officials who had decisionmaking power over ambulance provision (city councilors, selectmen)
- other people of interest including EMS citizen advocates and reporters from local newspapers.

Taken together these people represented all those who were interested in or responsible for EMS services. We continually relied on the regional health planning agency EMS Project for their perspective on local

activities as well as the regional perspective on the state activities. These interviews were interactive sessions where we both exchanged information about our experiences with the local providers.

Moreover, our interest in federal and state activities necessitated interviews with the regional DHEW representative, staff at the Massachusetts Office of Emergency Medical Services (OEMS), and a former staff member from the Tri-State Regional Medical Program EMS Project. These interviews resulted in a density of data which was used to verify the events of past and present activities. We conducted our investigation in an exploratory manner, continually probing to discover new issues, relationships, and variables that might be of interest. We ended our interviews only when we began to hear the same information repeated.

The interviews furnished critical insights as to the relationships between interest groups, institutions, and the issues surrounding regionalization. We realized, however, the subjective nature of these interviews, with particular respect to the timing of our investigation (while the regional transportation scheme was under reconsideration). As a result, we also used local newspaper stories and the North Shore Health Planning Council files (with the extensive cooperation of Martin Levitan and Director Polly Mansfield of the EMS Project). These files contained memorandums, agendas from meetings with local EMS interests, correspondence, grant applications, final reports, and numerous other material, providing an extensive documentation of the changing relationships between the regional agency and the state, local, and Regional Medical Program agencies.

Since the nature of our approach required synthesizing holistic assessment from the data we had collected, we used what Glaser and

Strauss call the "constant comparative" method of analysis to systematically generate and develop our theory.⁷ This method involves numerous readings of the case study information, always identifying critical relationships and variables which would lead to hypotheses about the nature of these relationships. These hypotheses were modified with each new insight from the data. In addition, we were both well-acquainted with the issues and events, consequently, we were able to generate colloquies which contributed considerably to the analysis of the case study and the development of the hypotheses. As a result, we evolved an understanding of the nature of hospital-centered regional EMS systems and the critical variables therein.

Setting of the Study

The state and regional environment of the case study of EMS activities in the Greater Lynn area is essential for a full understanding of the events and their "causes". We collected information about EMS activities as they developed at the state and regional levels in response to federal initiatives. From this information we tried to determine the critical programmatic switches, the changes in power and authority, the impact of federal grants, and trace the development of the state program to its present form as a recipient of an EMSS Act grant. We found the historical and programmatic development of the state and regional EMS systems as critical commentary that needed to be included as part of the case study. As such, the case study examines the state, regional, and local EMS programs as a unit with an emphasis on the significant relationships among the programs. Therefore, it is unnecessary to detail this context in this section.

Methodological Issues

One of the major problems with the holistic single case study approach we chose, is generalization, especially with "an N of One."⁸ There are, however, two arguments for generalizing from a case study based on the density of the information collected. The first approach to the problem supports the notion that given a set of conditions of the essential elements of a system, then a particular organization or system as a whole must result. Therefore, "the particular cases serve partly as an argument for the theory and partly as an illustration of its application."⁹ Secondly, it is asserted that "whenever the system is repeated . . . the same interrelationships must exist and phenomena which are essentially the same . . . will be observed."¹⁰

In the case study method, the validity of the holistic assessment and the degree to which systems substantially similar to the studied system are present elsewhere, determine the precisions and contributions of the generalizations. The task of substantiating the holistic assessment is not an easy one, often resulting in generalizations which, according to Robert Merton, are "post factum sociological interpretations," generated after the data was collected and not tested on prior hypotheses.¹¹ Herbert Gans, to explain the difficulty in validating his sociological research, concluded his work with the following paragraph:

"This, then, is not a scientific study, for it does not provide what Merton has called compelling evidence for a series of hypotheses. It is, rather, an attempt by a trained social scientist to describe and explain the behavior of a large number of people, using his methodological and theoretical training to sift the observations, and to report only those generalizations which are justified by the data. The validity of my findings thus rests ultimately on my judgements about the data, and of course on my theoretical and personal biases in deciding what to study, what to see, what to ignore and how to analyze the products."¹²

One of the benefits for the holistic approach is the amount and scope of the data available for the development and testing of theories of organization for the case variables. In some cases, the theories will exceed the data and postulate interrelationships between the data variables that are not explicitly evident. Also, it is extremely difficult to remove all bias from our account of the situation. We tried to build our model on the data that we observed, read, and collected from interviews, being careful not to exclude relevant information that might have suggested conflicting models. However, we were unable to use all the information we collected, using instead that data which we felt best supported our theory.

Furthermore, the case study presents a set of events and proposed "causes" of those events. The holistic assessment relies upon the researchers' interpretation of these events in a plausible framework, to highlight the significant variables and relationships which describe the nature of the system. We tried to recall the EMS activities and events as accurately as possible, given our interpretive framework. Consequently, most of the small detailed events have been united into descriptive analogues that relate to the whole situation more coherently than the individual details. Hopefully, the reader will recognize the difference between these events and the researchers' interpretations of these events and respond with the appropriate discretion.

Even if our holistic assessment of the Greater Lynn EMS experience is accurate, the transferability of our findings to other EMS experiences is extremely limited unless EMS systems highly similar to Greater Lynn's exist elsewhere. The major issue, then, is whether Greater Lynn's EMS system characteristics such as: resources, transfer patterns, mutual

aid pacts, governmental decision processes, socio-economic character, planning process, and EMS program, are at all representative characteristics of other existing systems. Clearly, the governmental structure of local town government with city councils, town selectpeople, and town managers, is peculiar to New England style government. But the EMS resource levels and character of ambulance services is quite similar to most suburban areas. Therefore, the police and private ambulance provider models can be applied most anywhere. The homogeneity of the hospital system is not completely unlike most suburban areas which have adequate resources and in fact, suburban areas also typically have nearby urban centers to rely on for the most sophisticated emergency care. The socio-economic variables will change from area to area, but the nature of the region, with a small decaying urban core surrounded by more affluent suburbs, is also not unlike many of the smaller metropolitan areas in the country.

Finally, the argument that Massachusetts, and hence Greater Lynn, are part of an EMSS Act grant program indicates that some similarities must exist in other state coordinated programs under the EMSS Act program. Although we are analyzing only one case in the Act's program, we assume that the requirements and guidelines of the Act have generated comparable efforts elsewhere. The major difference is probably in the State's use of the Comprehensive Health Planning "B" agencies as the regional agency to plan and guide the implementation of the state program. It became clear in our interviews that the strategy to use "B" agencies under tight contract with the state was an uncommon one. At the very minimum, however, we generated hypotheses about hospital-centered regional EMS systems which will be useful in further investigations.

FOOTNOTES FOR CHAPTER THREE

1. U.S., Department of Health, Education, and Welfare, Emergency Medical Services Systems: Program Guidelines, DHEW Publication, No. (HSA) 74-2009, Revised January 1975, draft.
2. Some of the service systems that ACIR has included in their research findings are: education, libraries, parks and recreation, fire protection, police, public welfare, public health, hospitals and medical care facilities, air pollution control, refuse collection and disposal, water supply and sewage disposal, planning, housing, urban renewal, and transportation.
3. U.S., Advisory Commission on Intergovernmental Relations, Performance of Urban Functions: Local and Areawide, M-21-revised, September 1963.
4. Robert S. Weiss, "Alternative Approaches in the Study of Complex Situations," Human Organizations, Vol. 25, No. 3 (Fall 1966), pp. 198-206.
5. Robert S. Weiss, "Issues in Holistic Research", in Institutions and the Person, ed. Howard S. Becker et al., (Chicago: Aldine Publishing Company, 1968) p.343.
6. Weiss, "Issues in Holistic Research", p. 199.
7. Barney Glaser and Anselm Strauss, The Discovery of Grounded Theory, (Chicago: 1967) pp. 101-115.
8. Weiss, "Alternative Approaches to the Study of Complex Situations", p. 203.
9. Ibid., p. 203.
10. Ibid., p. 199.
11. Robert K. Merton, "Patterns of Influence: Local and Cosmopolitan Influentials", in Social Theory and Social Structure, (New York: Free Press of Glencoe, 1957) pp. 93-94.
12. Herbert J. Gans, The Levittowners, (New York: Pantheon Books, 1967) pp. 449-450; idem, The Urban Villagers, (New York: Free Press of Glencoe, 1962) pp. 349-350.

CHAPTER FOUR
THE CASE STUDY

The federal policy in EMS, as embodied in the EMSS Act, can be examined in the context of the case study which follows. The Massachusetts Department of Public Health, the recipient of a large federal grant has already begun a process of pursuing these federal policy directions in the development of regional EMS systems throughout the state. The case traces the state's process of translating federal policy into EMS activity at two key levels -- regional and local. At the regional level we trace the efforts of one Massachusetts region to initiate and conduct a planning process and to attempt, through that process to establish the regional EMS Networks envisioned by the EMSS Act. At the local level, we examine the reactions to these policy directions of the existing institutional structure by which emergency medical services are provided.

Reflecting these centers of activity in EMS, the case study is organized in three sections analyzing in turn, the state, regional, and local activities in EMS. The first two sections describe the historical roles of the Massachusetts Office of Emergency Medical Services and the regional health planning agencies in influencing the local activities and infrastructures. The final section, the local perspective of the planning and development of three EMS components, investigates the institutional characteristics that promoted and inhibited attempts to regionalize EMS. This arrangement of the case assembles the issues at the various programmatic levels, and so indicates the potential impacts of regionalization on EMS organization and provision.

The State Context: The Genesis of EMS Activity

The present state program in Massachusetts evolved from a fragmented set of activities which merged together over time in reaction to the conceptions of "EMS Systems" outlined in federal programs. These notions of how EMS systems should be defined and operated were combined in the state program and translated through regional agencies to local activities. But the federal programs often had inconsistent and unrealistic expectations which only confused the local development of EMS systems by the construction of local infrastructures that later had to be eliminated for the implementation of future plans. In this context, efforts in Massachusetts have been undertaken to utilize the ideologies promulgated at the federal level, identify the parts of an EMS system, plan for their cooperation, and at the same time use the existing natural relationships to define the boundaries of "regional" EMS systems. Thus the evolutionary process has used local, state and federal resources to form its EMS activities into a network of regional systems.

The Roots of Massachusetts EMS

Until the early 1970's, few emergency medical services activities existed in Massachusetts. Prior to that time, EMS-related activities were in operation in many of the components of EMS such as training, facilities, public education, etc. Red Cross was developing numerous training courses that were available to the public. Civil Defense was designing responses to various disasters and testing them with simulated situations. Both were interested in public education programs to inform citizens of proper

emergency procedures. Hospitals were expanding emergency and outpatient facilities in response to community need for readily available health care. However, these efforts were fragmented and operated in isolation from each other. In addition, there was no money specifically allocated for EMS resources and no standards for equipment, personnel training, or emergency facilities. The common goal of saving lives in emergency situations failed to bridge the existing communications gap between the agencies engaged in these activities. As a result, a unified conception of EMS was slow to develop.

There were two early attempts to coordinate existing services to build an EMS system. First, the department of Public Health hired a tentured civil service person who was associated with the civil defense efforts of the department, but who appeared to be assigned to EMS to keep busy. Clearly she could not handle the EMS system for the entire state, so she was dispatched to an area of the state and given the freedom to do as she pleased. Her experiences with civil defense led her to run numerous disaster drills until the people involved got tired of her antics. She was replaced several years later, in 1971, by Karen Holmes, whose efforts to coordinate EMS efforts at the state level were doomed to be ineffectual without a staff or budget. Consequently, she spent most of her time just trying to get money to begin activities at the state level to upgrade emergency medical services.

A second early and equally incremental effort to improve one aspect of the EMS "system" in Massachusetts was the purchase of ambulances -- a critical factor in the development of local interests around EMS. Paralleling the Highway Safety Act of 1966, money was poured into the purchase of ambulances through the Governor's Highway Safety Bureau. The representative in the Highway Safety Bureau, Francis Colleton, fought

with Karen Holmes in her attempts to get additional DOT highway funds through the Bureau to establish a state office for coordinating EMS.

The process of allocating ambulances has remained obscure to this day, but these early efforts helped place almost 200 ambulances in many of the small rural and suburban communities through matching funds, and in some cases replaced the station wagons used by police for transportation. What is important about these allocations is that these vehicles, purchased between 1970 and 1972 (now outdated in design and in disrepair), stimulated a strong home rule attitude on the part of the towns with respect to the ambulances and resulted in strong assumptions that an ambulance would be located in their community. The program also implanted these ambulances in many police and fire departments which have come to see emergency services as an important part of their role.

While local interest in decentralized EMS was strong, several factors collaborated to force the creation of an EMS system on a larger scale. First, a climate of concern about EMS was generated by a National Academy of Sciences - National Research Council study entitled, "Accidental Death and Disability: The Neglected Disease of Modern Society". This study focused nationwide attention on the magnitude of the problem by citing statistics, but did not present any specific policy recommendations.

Second, conflict between operating procedures of DOT and standards developed by the Highway Safety Act emerged during the 1972 Congressional hearings concerning new EMS legislation. DOT had, for example, distributed ambulances regardless of whether the state had an approved plan according to Standard 11 of the Highway Safety Act. The DOT money, moreover, had also provided for the establishment of a state division of emergency services to create a state plan over a three year period. The funds to create

a state Office for Emergency Medical Services ensued from Karen Holmes' success in convincing the Governor's Highway Safety Bureau that such an office was critical to EMS activities in the state. The grant permitted the hiring of a project director, research assistant, and secretary to accomplish the following tasks: coordinate efforts in EMS at all levels of government and provide leadership in the field, establish an advisory committee in EMS, assess present legislation, rules and regulation, and propose new laws, establish an EMS data collection system, survey and evaluate EMS system, and to develop and implement a state plan for EMS.

The money was released in January 1973, at which time a director and research assistant, Robert Murray and Linda Leddy, were hired. But the bare essentials such as office equipment were not furnished to the Office for Emergency Services, so this initial core of 2 people were still severely hindered in attempts to mobilize the activities of the state into a coordinated EMS program. For these reasons, the transformation of OEMS from this modest office into a powerful centralized agency was slow. It became clear that if the above tasks were to be accomplished, more people and resources were needed to shorten the startup time for the state to begin its activities.

The Tri-State Regional Medical Program

EMS efforts appeared to gain more promise when DHEW announced, in early 1972, a new federal initiative in EMS under two funding mechanisms. One was for earmarked funds for completing "advanced EMS systems" to be allocated to five demonstration projects, the other was \$8 million of supplemental funds that were available for Regional Medical Programs, formed through the Heart Disease, Cancer and Stroke Amendments of 1965.

The RMPs were to provide a framework for the dissemination of medical knowledge about heart disease, cancer, and stroke, so it seemed a likely extension of their interests in heart disease, to permit them to apply for the supplemental grants.

This federal initiative was an important shift in thinking about and funding EMS activities. Unlike the earlier DOT emphasis on highway safety, the new program moved from highway safety to a health care basis for planning and developing EMS programs. The purpose of the supplemental grant program was to "develop and/or implement regional and/or subregional effective comprehensive EMS SYSTEMS." (capitals in original). Technology and methodology for delivering quality services existed, in HEW's eyes, and the problem was "the lack of an informed cooperative linkage of the elements to provide effective care." The philosophy of the program was that "effective change will result from careful planning and implementation on a time-phase basis" and in a "receptive environment". Essentially the emphasis was to utilize existing resources to produce the change, "rather than superimposing sweeping changes in conflict with the existing system." This required the formal expression of cooperation from the providers and community at large.

DHEW made some costly assumptions in their decision to place the grant program with RMPs. First was the assumption that RMPs would continue in their current strength for at least the period of the grant. This proved false and created some major problems in Massachusetts. Second, HEW operated under the theory that RMPs, which could cover anywhere from several counties to several states, were the appropriate size around which to plan a regional EMS system. Third, they had not realized the impact of the DOT Highway Safety Act program and thought so little EMS activity existed in the field that they were not superimposing sweeping changes

on a system. Finally, the proposal writing and program initiation assumed that some professional expertise and informed knowledge about how an EMS system should operate existed, despite the fact that this was the first comprehensive federal program.

The impacts of these assumptions became clear as soon as the New England regions and subregions began to vie for the new funds. The ability to generate a professional proposal became the dominating influence. The Tri-State RMP, for example, which covers the states of Massachusetts, Rhode Island, and New Hampshire, decided to apply for the money and in the course of three weeks was able to produce a first draft. At the same time, Tri-State tried to motivate interest in an application to get a demonstration project grant, only because the money was available. Because of the considerable time constraint, Tri-State decided to have each state submit its own proposal for the development of statewide EMS Systems. Within each statewide proposal, provision was made for sub-contracting the planning and development of EMS systems at the regional level.

The requirement of a professional state plan and existing expertise presented some problems for the Massachusetts program. The program could not be coordinated at the state level because OEMS was not yet (March 1972) in existence and as a result no focal point existed at the state level for the Massachusetts program. As a result, Tri-State had to write the state portion of the Massachusetts program in anticipation of the development of OEMS.

Even more problematic was the fact that the Mass. component had to be a dual effort with a division of responsibility between the state Department of Public Health and the Comprehensive Health Planning "B" Agencies. Clearly, Tri-State would have wanted a state run program, but there was

no leadership at the state level. (DPH) and only the CHP "B" agencies had been in existence since their creation through the Comprehensive Health Planning and Service Act of 1966, which stipulated a program of federal, state and local planning for comprehensive health services through regional agencies serving as the focus for local coordination of health institutions and personnel. The emphasis of their activities was to develop regional health plans with community participation.

Because of this kind of fragmentation in Massachusetts, for example, it was clear that the more powerful force in the DHEW program was not the individual states but the relatively better organized Tri-State RMP. It was the overall coordinator for the 3 states and also was responsible for the evaluation and physician training tasks and assuring that the EMS systems were consistent in the states. The relative weakness of the Mass. arrangement and what Tri-State saw as this arrangement's potential for internal conflict were demonstrated in the way the tasks in the proposal were divided between the state and the "B" agencies. The MASS. DPH-OEMS was to use the TRMP funds to supplement and enlarge its existing EMS program funded by DOT, and expand its scope beyond that of highway accident victims. New activities that it proposed to undertake were modest and primarily focused on "support" functions: (1) to conduct an Emergency Transportation Study to survey all vehicles in MASS. being used for emergency transportation, (2) to administer and coordinate a number of EMT-A courses to train 1200 persons, and (3) to institute an active public information program and serve as a central information center for EMS information.

Critically, the CHP "B" agencies, on the other hand, were to be the action arm of the MASS. Program, and promote community involvement in keeping with the tradition of the "B" agency planning strategy within the

plans and regulations established by the DPH. Their tasks involved: (1) establishment of an EMS office within their respective agencies to carry out EMS planning on an areawide basis, (2) develop community advisory boards to guide policy and program development, (3) to engage in program of community education through region wide conferences, and (4) to establish communications links between vehicles, personnel, and facilities.

Rather than providing a strong centralized system, then, Tri-State initially created a climate favorable to the development of sub-state regions. This program depended on the "B" agencies to pull together the parts of the system at the regional level. Delegating responsibilities to the "B" agencies as regional EMS offices, such as organizing community advisory boards, education of the community, and establishment of communication links among the components, suggested there was a more unified conception to developing EMS systems. It would be the job of the "B" agencies to identify and link these parts so that plans could be developed for their unified operation.

The general lack of professional expertise in EMS planning (which had been merely assumed in the DHEW concept) became evident as soon as TRMP received \$1.5 million of the total \$8 million under the supplemental grant program, and starting July 1, 1972, Tri-State regional medical program and Massachusetts became committed to improving the EMS system. The money was clearly far more than Tri-State had expected and more than they effectively knew how to spend. Although the original proposal was written according to a 3 year implementation plan and the final grant was a 2 year funding, Tri-State operated under the assumption that there was an implied commitment on the part of the federal government to continue funds for implementation of the plans after the two year period.

One of the first problems of the Tri-State program was that, because no prior planning system for EMS had existed, the "B" agencies as well as Tri-State knew little about planning or implementing "EMS SYSTEMS". Staffs had to be recruited for the "B" agencies to form EMS projects, and after a hectic summer of organization and contract writing, the CHP agencies set up their EMS projects with a staff of only 2 people per project. The last activities of 1972 were the initial organization of regional EMS Advisory Boards, which were to be the backbone of the community participation in the EMS planning process.

Probably because of its fragmented organization, the state was having even greater startup problems and by the time the "B" agencies had initiated their activities, the state had barely hired their director and research assistant. Since the "B" agencies were subcontracting directly with Tri-State, they forged ahead mostly under its direction. But the direction was not well defined aside from a few tasks specified in the proposal, such as establishing an EMS staff and community advisory boards, engaging in community education, in some cases through regional conferences, and establishing communications linkages among vehicles, facilities, and personnel. As a result, the "B" agencies defined their role as regional planners in numerous and inconsistent ways. Some of the projects were more involved in communications, some in transportation, and some in public education. The outcome was that by the beginning of 1973, most of the EMS projects had started their community education programs with a regional conference to get all the interested parties together, and then had scattered in all directions to do their regional planning.

The Emergence of Massachusetts OEMS

Though Tri-State had emerged as the primary source of coordination for this local activity in EMS, several factors strengthened the State's position in early 1973. First, Tri-State received word that HEW was planning to phase out the regional medical program and the EMS money that had been recently given to them. Tri-State was one of the few regional medical programs to battle the phaseout, and the time consumed in this fight cost the EMS program dearly. Not only were the Tri-State staff tied up in the drive to keep themselves alive, but many of the "B" agency EMS projects assisted the efforts to keep the Tri-State EMS money to the detriment of their programs' activities.

At the same time that Tri-State was in danger of losing its funds, activity at the state level accelerated. OEMS was such a peripheral agency in the TRMP program that they were spared the turbulence and confusion of the conflict between Washington and Tri-State. In March, OEMS set up its first Advisory Council which pulled together many of the EMS interest groups, under OEMS authority, to begin planning for a state level EMS program. Although RMP funds were in doubt, OEMS was working with its DOT funds to begin writing a state plan, since a moratorium on further DOT funds was in effect until the state could produce an EMS plan. As part of the state plan, they fulfilled one support function by conducting the Emergency Transportation Study (in which the "B" agencies had agreed to assist by collecting some of the data.)

The first part of 1973, then, saw the subtle transition of the direction of EMS activities in Massachusetts from Tri-State to OEMS. Tri-State had lost control of the "B" agencies, so when Washington sent a site

visit team in March, they saw the program in turmoil. The state, on the other hand, appeared to be developing a vision of EMS and a capacity to plan. Surviving on its DOT funds, OEMS made an attempt to get DHEW to turn the EMS funds over to them. After numerous visits to Washington, OEMS convinced HEW that they could develop an EMS system in Massachusetts and the TRMP EMS money for Massachusetts (\$800,000) was transferred to their program. On July 5, OEMS was informed that they could apply for the funds but it would be accepted only if the state had completed an approved work plan by August 1. This meant that the "B" agency proposals had to be included in the state work plan as a package, with changes desired by the state included. Thus, the state took direct control of the funds and as a stipulation of funding, gained direct supervisory control over the "B" agencies.

A number of relationships changed between the "B" agencies and OEMS as a result of the shift in Federal funding policy. Through October, the "B" agencies negotiated contracts and work plans according to the state's plans, not TRMP's. Where the state had previously run behind the "B" agencies in their planning activities, they now at least appeared to direct the operation. They were also able to expand their staff at the central office to 9 professionals and to increase the regional staffs through the "B" agency subcontracts. No one in the country had tried to use the "B" agencies under such tight supervision, so Massachusetts was observed with great interest.

The essence of the proposals from "B" agencies to subcontract with the MDPH, was the development of area EMS networks based on the capabilities of hospital emergency departments and an education program to inform the public about the networks. There was to be a regional advisory board,

but the regions corresponding to "B" agency areas were to be further divided into areas with committees and functioning task forces in each area. Such an intensive planning effort required the gathering of more specific data in a standardized form. In addition, committees representing the different components of the EMS system, (communications, transportation, hospitals, etc.) were to be started in each area. This first contract with the state was to indicate the direction in which the state wanted each of the "B" agencies to proceed. The contract between the "B" agencies and OEMS also revealed the concepts embodied in the state's image of an EMS system and how these concepts were tied to a geographical area.

The state's conception of an EMS system was focused on the hospitals as the major institutional base. This choice was made on pragmatic grounds; hospitals were the only system providing consistently effective services to emergency patients. Thus EMS systems have come to be defined by the grouping of hospitals, so that in theory they could collectively provide comprehensive emergency care on a continuous basis. These areas define their own interrelationships among the providers and develop their own plans for organizing resources, identifying deficiencies, and coordinating the delivery of services. The plans were to specify how patients of a particular category (cardiac, neonatal, poisonings, etc.) should enter the transportation and facilities networks and how communications and public education should guide their appropriate treatment in the system. Such plans were to be developed by committees, at the area and regional level, that were initiated and assisted by the "B" agency EMS Projects. By basing the state's system on the care capabilities of the hospitals, OEMS singled out the parameter that would be used to define the boundaries of the sub-state regional and area EMS networks.

The Impact of the Ambulance Law

The state confirmed its status as the locus of power for EMS activities by the passage of the comprehensive ambulance law in late 1973. The bill was designed to be a principal tool in enforcing minimal standards of equipment and training on ambulance personnel.

The Massachusetts Department of Public Health became the regulatory agency for emergency transportation services with the authority to license, classify, and determine the need and plan for distribution of ambulances, and to approve courses of instruction for ambulance attendants. It was essentially enabling legislation authorizing the MDPH to take steps to "insure high quality emergency medical care through regulation of ambulance and ambulance services." An indication of the scope of the state's powers was explicit in the clause giving them the authority to "...coordinate on a regional basis communications centers, ambulance services, hospital emergency services, law enforcement and fire units and emergency operations centers, and facilitate hospital transfers of patients."

While the passage of the law gave the state these powers, it also illuminated the strength of local interests in maintaining their own control over EMS. In October, this legislation gave the MDPH (and OEMS implicitly), wide authority to develop EMS systems across the entire state and this amplified the EMS system as a state run program, not through the law itself but through the development of specific administrative rules and regulations. But, it was the rules and regulations development process that bore out the potential impact of the law on the communities.

As information about the rules and regulations was funneled through the "B" agencies to the local level, the conflict between the new state power over EMS and the existing EMS infrastructure previously supported by DOT ambulance funds became apparent. Small towns and agencies in the

state sensed the potential expense of upgrading ambulance service, an expense which was evaded in the debate before the law was passed. Concerns of police and fire departments arose as to what their part would be in the EMS system. The private services who needed to consider their profits in maintaining a service were afraid the law would put them out of business. Small towns and suburban communities who wanted to keep the ambulance service they now had, were afraid the necessary improvements would be an additional burden on their budgets and on the taxes of their residents. The state clearly did not want to disrupt the present tradition of community based ambulance services but it was evident that they would have to take into account, in the final revision, the problems the law would impose.

The heated reaction to the law can be traced to a number of attributes of the law itself, especially its emphasis on establishing requirements and standards for vehicles and attendant training. In both cases the level of upgrading required was immense. The training requirements, for example, was that everyone who provided emergency medical care as part of an ambulance service had to be trained to the 81 hour DOT standard level and had to participate in a refresher training course each year. In addition, there had to be 2 trained Emergency Medical Technicians (EMTs) in each vehicle. Since the state realized that such a program could involve considerable startup time, provision was made for a phasing in of training over a 3 year period starting in July 1975, with one-third of the personnel trained each year. Local services were still overburdened even with this provision.

The rules regarding vehicle standards raised similar issues. Under the law a Class I (basic first-line emergency dispatch) ambulance had to incorporate the minimum DOT approved General Services Administration ambu-

lance design, which calls for either a van or modular vehicle with 60" headroom. Clearly, for existing services, this requirement would mean replacing the vehicle they were presently using. The additional provision for the phasing in of vehicles with a lead time of 2 years still did not remove the stipulation that all vehicles be of the van or modular type. Thus these regulations caused the biggest problems for the state's existing ambulance services, and they had to meet these specifications before the DPH would grant them a license.

Both the vehicle and training regulations incited even greater protest because they tried to change the manner in which local agencies were providing EMS services. First, police departments typically used dual purpose vehicles and under DPH regulation all of these would have to be replaced by 1977. Similarly, police departments and fire departments often used their entire force in ambulance duty, and thus under the law the entire force had to be trained in 3 years. The cost of training and overtime pay for those attending the courses was not easily included in small town budgets. The sparsely populated parts of the state, especially the western portion, voiced the loudest protests at the hearings about the hardship such regulations would place on the services located there and on the budgets of the towns.

The differences among the towns and their ability to budget for EMS services was accounted for in a special waiver allowing a 5 year conformance period for sparsely populated areas. Its effect in stemming protest was minimal for two reasons. First, the waiver was only for municipally run services and consequently the private services were not assisted and second, no money was appropriated with the legislation, leaving towns and city agencies with cause to resist the regulations of the law.

Thus, while the ambulance law served to strengthen the status of OEMS in relation to the power structure of the system, and provided a strong potential for monumental improvements in the transportation component, it detracted from OEMS's concentration on the hospitals as the focal point of the EMS system.

The Emergence of the State EMS System

Despite local protest, due to the ambulance law, there were external factors which intensified the role of OEMS in building an EMS system. One factor was the passage of federal legislation in the fall of 1973 which initiated the largest program yet in the improvement and development of EMS systems. President Nixon signed the Emergency Medical Services Systems Act of 1973 into law at the same time the state had received the power to regulate ambulances and ambulance services. Also, the state was still pursuing DOT funding and the passage of this Act served as an incentive to complete a plan that could be submitted to both DOT and HEW.

In April of 1974, the DOT plan was completed and approved and reflected the relationship that had evolved between the "B" agencies and OEMS. Because the "B" agencies had lagged behind in the activities mandated by OEMS, they were not in the best favor with the state. Thus the completed DOT plan, which served as the application to HEW, mentioned the "B" agencies many times in reference to the good job they had done in getting the system going initially and in creating regional networks. Critically, however, they were never mentioned specifically as the subcontractors in the EMSS Act grant proposal. This implied that the power to direct the system would be strongly defended by the state.

As expected, the "B" agencies did make an attempt to strengthen their position. During the required reviewing process, they demanded to be the subcontractors. They invited themselves to a state EMS executive committee meeting of MDPH and confronted the issue. The OEMS representatives argued that they must have control over the regional activities since they were not satisfied with the progress of the "B" agency EMS Projects. The "B" agencies opposed the state by insinuating that they wouldn't approve the proposal if they were not specified as the subcontractors. But they too needed the HEW funds to maintain their programs and they were appeased somewhat by a letter from Commissioner Bicknell which commended the actions of the EMS projects and stated that the continuing involvement of the "B" agencies would add considerable strength to the proposal.

This conflict with the "B" agencies culminated in a year of similar conflicts due to the changed relationship between the "B" agencies and the state. Under Tri-State, they had been allowed to construct their own agendas, but when the state took over the program, they were given performance contracts with specific tasks to complete. These tasks were the same for each agency and were to be executed with respect to the same time frame. In essence, Massachusetts was trying to achieve a statewide conformance to a program of EMS. Moreover, it indicated to the "B" agencies that they were longer permitted to do as they pleased.

In June 1974, when DHEW awarded Massachusetts \$1.9 million in EMSS Act funds, then the stage was set for the implementation of the state program for developng EMS systems. The money from the grant was pooled with the remaining funds from TRMP to expand the staff further. OEMS was now supporting approximately 60 people, including central and regional staff. The completion of the DOT plan resumed the flow of money for ambu-

lances to Massachusetts. OEMS joined with the Governor's Highway Safety Bureau to create a joint allocation program using identical criteria.

Not surprisingly, the objectives of the state program were to establish sustaining mechanisms at all previously involved levels -- state, regional and area. The proposal used the minimum standards of the federal legislation and the state ambulance law to evidence their ability to upgrade the equipment and personnel in the transportation component of the system. The network of sustaining mechanisms was composed of a broad committee structure topped off by the OEMS staff and the state EMS Care Advisory Board, and fanned out to regional EMS committees corresponding to the "B" agency geography, and then sub-regional area committees which the "B" agency EMS projects would determine and guide. The components of the EMS system would be represented in the committees and would serve to educate all the providers and consumers about the operation of the state system plan.

The important part of the Massachusetts program is the way in which the statewide EMS system is defined and constructed. The state is divided into regions primarily based on "B" agency boundaries, and areas based on hospital care capabilities. This is unique because in the past, the EMS system was thought of as an ambulance system due to the DOT program. The concepts of regional EMS systems are embedded in these system-defined geographical areas. Once the boundaries were determined, those providing emergency medical services within an area boundary began the activities of designing and implementing a system based on local needs. The orders come from the top down, but the activities emerge from the bottom up. The simultaneity of the area development is designed to eventually lead to regional systems coordinated under the state OEMS.

This conception of an EMS system evolved from the merging of two planning strategies, and was molded by what the federally funded programs would subsidize. The standard planning theory, practiced before OEMS took control of the state system, served to identify the parts and actors in the EMS system. The OEMS coordination methodology took these parts and assumed that they would logically connect through a common focus on hospital care. Finally, hospitals then became the standard around which geographical boundaries could be defined and around which those involved in providing EMS could identify.

The importance of the identification process between the EMS providers and the state's idea of an EMS "system" is exemplified in the remainder of the case study. Spawned by the "B" agencies, area committees began to formulate notions of how an EMS system could meet their local needs. As the next section will show, these activities in the context of the state and regional ("B" agency) EMS system conceptions, begin to reflect ways in which regionalization can and cannot alter the organization and operation of EMS.

The Regional Setting: A Translation of the State EMS Concept

The CHP "B" agencies were initially defined by Tri-State as the regional vehicle for planning and implementing EMS systems based on local needs. OEMS continued to rely on these agencies even when the state assumed control of the EMS program. The "B" agencies continually found themselves sandwiched between the state and local interests, but because they were under strict contract with OEMS, the "B" agencies had to persistently confront the implementation problems of the state program. Certainly one of the "B" agency's greatest difficulties in developing regional EMS systems was working with these local constraints within the state EMS program.

The following section explores the history of the North Shore Health Planning Council EMS Project, a "B" agency which typifies the problems of translating the state objectives for EMS into a "regionalized" system. Whatever success the NSHPC achieved in becoming an active force in regional EMS planning, it demonstrates the problems imposed on implementation efforts by the structure of the medical industry and of regional government.

The North Shore Health Planning Council

The North Shore Health Planning Council (NSHPC) is the CHP "B" agency for Region IV, one of eight Regions in the state of Massachusetts. The regional planning agencies are established pursuant to Section 314(b) of the Comprehensive Health Planning and Services Act, and their charge is to serve as the regional coordinator for planning activities under the state-wide 314(a) agency. In this capacity, the regional health planning councils have a broad range of responsibilities for the development of a regional plan for the delivery of all health care services in their areas. These responsibilities include such things as reviewing Certificate of

Need applications to the state Public Health Council for expansions of health care facilities, providing technical assistance to local health care facilities, and the like. Their primary responsibility remains, however, the development of a plan that tailors the characteristics of health facilities and activities to the needs of the region. The activities that are set out for the "B" agencies in the Comprehensive Health Planning legislation follow a traditional approach to planning -- collecting baseline data, extracting from the data performance criteria and goals, and developing plans for meeting these goals.

The NSHPC had only passing involvement in EMS in the past, though it officially had a "planning capability" in its role as a health planning agency. It had made several forays into EMS, mostly concerned with communications among the EMS components, but these efforts had received no follow-up activity due to the lack of EMS staff and resources. Thus in March 1972, when the NSHPC and the other "B" agencies received notice from Tri-State Regional Medical Program of HEW's grant program for the planning and development of EMS systems, the Council viewed the opportunity to plan for EMS as a natural extension of their other regional health planning efforts, and prepared to adopt EMS planning into their repertoire. Critically, their assumption was that they could apply the basic CHP planning structure to the EMS System, with the primary difference being a subcontract with TRMP rather than the DPH (their 314(a) agency). The problems inherent in the assumption that EMS and CHP strategies were compatible had to be faced immediately when the proposal was approved in July, and the "B" agency had no EMS people on their staff, with Carroll Colby, director of the NSHPC, serving as acting director of the new EMS project during its initial months.

With the funding of the initial Tri-State RMP proposal, regional planning for EMS came to Massachusetts for the first time in the form of the TRMP subcontract with the 314(b) regional CHP agencies. The subcontract specified that the "B" agencies were to establish a regional EMS office in their agencies, responsible to the Board of Directors, which would be responsible for EMS planning activities at the regional level. These EMS Projects were to organize community advisory boards, conduct community education programs, plan the organization of services with appropriate cooperation and communications between the various components and analyze EMS utilization and patient origin.

The NSHPC EMS Project

The Project Staff, in following the approach that had been used by the NSHPC successfully in the past, encountered a number of problems, not the least of which pertained to relationships with the non-health agencies in EMS. They began by ambitiously trying to establish a system of liaisons with all the providers of EMS in the region through the formation of a number of committees. The primary component of this committee structure was to be a Regional EMS Advisory Committee to the Board of the Council that was to be "broadly representative of the emergency medical interest of the Region and consumers, to provide a single point of contact and coordination for EMS System planning and development in the region".² With this Advisory Committee as an instrument, the EMS Project was to undertake an extensive work program that focused on regional plan development and implementation.

The preliminary planning activities for the Project were as ambitious as its mandate to involve all the providers: to collect data on ambulance and emergency room services and to prepare an analysis to be used in de-

signing plans for the future arrangements of these services. These first year activities were to be followed by two years of refining the data and using it in the development of a comprehensive plan for the region's EMS system. In addition, the Project was to cooperate with other "B" agency EMS Projects in working toward a compatible regional communication system linking all emergency services in their region and nearby areas and to cooperate with the state and TRMP to establish ongoing training for the personnel in the EMS system, including physicians, ambulance attendants and emergency room personnel.

Responding to these directives, the North Shore EMS Project began in September of 1972, with a temporary part-time director, and the first tasks were to put together the region's organizational structure, particularly the Regional EMS Advisory Committee. The Committee was convened in September with representatives of the hospitals, ambulance services, police and fire departments and consumer involved from the initial stages of project activity.³ During this initial period, the Committee met several times and prepared an initial inventory of EMS resources in the region.

During the first several months, the Project was able to accomplish very little. This was due, in part, to the lack of staff, but also the guidance offered to the EMS Projects by TRMP was minimal and the state had yet to establish an EMS agency to oversee the "B"'s activities. This lack of guidance was to continue throughout the period that the "B" agencies were under subcontract with TRMP. This resulted in the EMS Projects operating largely independently of state-level activities once they were initiated and independent of the ongoing activities of the other Projects. It was also the basis of considerable turmoil between the State and the Projects when the state began to assert its programs. Eventually the "B" agencies would be placed under performance contract by the State in an effort to reduce

this conflict but, at this stage, the contracts with TRMP were little more than agreements of principle. More important, the committee structure, at that time, was very tentative, and most committee activities were directed solely toward establishing initial contacts and relationships with EMS providers in the Region and familiarizing them with the goals of the Project.

The committee structure was critical to the successful functioning of the Project in two ways -- in meeting their contractual obligations and in establishing working relationships with the providers of EMS in the Region. The central element of the structure was the Advisory Committee, which was intended to serve as the main policy-making and direction-setting body of the Project. Initially, however, the staff was placed in these policy-making positions due to the start-up difficulties of the committees. It took a considerable amount of time and effort by the staff before the Committee began to take its own initiative in generating activities for the Project. The Committee was to appoint Task Forces, from among its membership, to go deeply into the different EMS components. Their initial attempts to develop ongoing Task Forces were largely unsuccessful, because the range of problems and directions in the component areas had not been sufficiently detailed, which resulted in a tendency to work on individual projects and disband upon their completion.

It was a long time before the Task Forces showed signs of becoming self-sustaining. This required them to have explored their functional areas to the point where they could generate their own work programs, and, until that point was reached, their activities generally resulted from suggestions from the Project staff and tended to be mostly geared to the fulfillment of the Project's contractual agreements. The Committee structure eventually generated a work program for the Project, which went into effect in January

of 1973, that included resource inventories, verifying the appropriateness of the Regional boundaries, establishing a legislative task force to lobby for the state's Ambulance Law, and sponsoring a regional EMS conference. The purpose of the conference was to introduce the community and professionals to the Project and the concept of EMS systems, as well as motivate interest to begin work toward the long-range planning goals of the TRMP proposal.

Since the beginning, the Project's EMS activities had proceeded independent of pressure from TRMP and the State (which was just establishing its Office of EMS). But this situation was soon to be drastically altered as TRMP faded out of the state EMS activities and the state OEMS gained power and authority over the state program. The sequence of events surrounding the transformation of Massachusetts EMS from TRMP to OEMS was one of the most crucial periods for the EMS Projects and their relationship to the state program.

The Impacts of the RMP Phaseout

In February, TRMP was preoccupied with matters other than the success of the Projects. Within days of the Region IV conference (held February 28, 1973), the EMS Project received news that HEW was attempting to phase-out the RMP program, and with it, the EMS money that was providing their sole support. In the ensuing months, the activities of the Project were directed almost exclusively at altering their plans and efforts to conform with TRMP's interpretation of the latest predilections of Washington. The interpretations changed from month to month, with corresponding changes in the thrust of Project activities. In addition to contributing to a general feeling of disorientation among staff and committee members, this unfortunate turn of events made it impossible to follow up on the activities

of the regional conference, and caused untold delays and alterations in the work program.

The turmoil in the EMS Projects culminated in an HEW site visit that increased the pressures for state control over the Projects. The problems that HEW saw in the Massachusetts programs revolved around the independence of the Projects. Thus, when OEMS offered to assume control over the regional activities, a new direction, defined by OEMS was established for the Projects.

While some of the Projects had difficulty adapting to the new policies, thus in turn, causing considerable problems in the relationships between the state and the regions in the following year, the North Shore Project was in a good position to conform to the state's directives. The Activities Report of the Project, issued May 5, 1973, in conjunction with the HEW site visit, listed the following accomplishments in the period from September through January 15: the development of the advisory committee, an inventory of emergency resources in Region IV, and preparation of the socio-economic profile of the region. In the next phase of operations, commencing with the hiring of Polly Mansfield, as director, Task Forces were established in Transportation, Training, Communications and Legislation. The Transportation Task Force initiated plans for an ambulance survey in the Region, plans which had to be dropped when the State announced its intentions of performing a similar survey state-wide. The Communications Task Force had remained inactive during this period, although the director was pursuing investigations into a potential application to the Robert Wood Johnson Foundation's grant program, in cooperation with the Health Planning Council for Greater Boston's EMS Project, for a regional EMS communications system. The Training Task Force was involved in efforts to obtain hospital

sponsorship of EMT courses, and was also responding to other state efforts in the training area.

The EMS Project Under the State Program

Up to this point, the activities of the Project had been mostly restricted to start-up procedures and responding to such outside influences as the TRMP difficulties and the Robert Wood Johnson Foundation Request for Proposal. But, in the process of responding to these initial necessities, the Project had accomplished one objective that contributed immensely to its ability to respond to the directions that were to come from OEMS in the future. In having to alter its priorities every month, and in the process of making several false starts in areas that the State was later to subsume into its own work plan, the Project had made initial working contact, out of necessity, with EMS people in all the functional areas of its region. The contacts of its parent agency, the NSHPC, had proven to be very useful in the development of the EMS Project's committee structure. The Regional Advisory Committee, particularly, had developed a core of participants that were committed to working with the Project, and several of the members had undertaken independent projects in their own communities. The whole structure, though ineffective in its past roles, was an ideal basis from which to pursue the State's conception of hospital capability-based regional EMS networks.

The effects of the Project's new responsibility to the State weren't manifested until the North Shore EMS Project submitted its plan to OEMS. At that point, the State's increasing emphasis on decentralizing planning activities became clear. The work plan that emerged from the Spring of 1973 for the North Shore EMS Project had essentially the same flavor as had the initial plans. The Project was still very much in keeping with the "B"

agency planning ideology, and, in their proposal to MDPH, they outlined a program that followed the trajectory of data collection, identification of information deficiencies, development of planning standards and requirements on an Area level, and integration of Area plans with one another. The proposal definitely reflected the approach of defining measurable criteria and developing plans for achieving these criteria.

During the summer, however, OEMS was preparing its final proposal to HEW for takeover of the TRMP program and required proposals from the EMS Projects to fit more closely into the OEMS program directions. The new proposal for the Project, effective October 1, 1973, introduced a new thrust for the Project, placing an emphasis on the development of Area EMS Committees that would serve the purpose of the Advisory Committee, on a smaller scale. The Area Committees, specified by the OEMS, were designed to provide the ultimate planning, interactions, and implementation in the EMS communities. They were to involve the Area EMS personnel in the planning and implementation process, and, by so doing, cultivate an understanding and support of the institutions and services that the planning results would effect. These Area Committees were to oversee the development of Area EMS networks, whose boundaries were based on the capabilities of the Hospital Emergency Departments and the needs of the communities involved.

At this point, then, the EMS Project had stepped directly into the role envisioned by the State and as would be reflected in the EMSS Act. The Projects were to serve as the implementation arm of the State's strategy for developing regional EMS systems composed of smaller Area EMS Networks. This approach to EMS regionalization anticipated the pending federal EMSS Act, in the sense that it envisioned establishing regional EMS systems by initially defining boundaries of service areas based on the "collective care" capabilities of the EMS facilities within them. The Area Committees

were expected to play a critical role in this process of establishing the relationships between the facilities necessary to operationalize these Networks. Thus, the North Shore Project, with its existing committee structure, was in excellent position to implement the new decentralized organization proposed by the State.

The process of implementing the new committee structure was carefully laid out in the Project's proposal to OEMS and closely tied to relationships with hospitals. The Area Committees were to evaluate the existing Regional and Area boundaries (which had their origins in the Department of Mental Health's regional setup) and recommend new ones as necessary. The initial thrust of the Committees was an indepth study of hospital emergency department utilization and assessment of their emergency capabilities, in order to provide the data necessary for the establishment of the Area boundaries. Only then was provision made to establish Area Transportation Committees that would organize the transportation facilities within the Areas into a system that would effectively interact with the hospital network. As a last step, the communications, training and public education components would be consolidated into The Area Committees, which in theory would have developed the capability of administering a regional EMS system within their boundaries.

The Area Network concept and its strategy for implementation represents the first significant infusions of state ideology into the EMS Project's work plan. The North Shore accepted this infusion more readily than most Projects, having devoted much of their past efforts to an implementation process much like that envisioned by OEMS. The trajectories of the other Projects in the state, however, had become quite diverse by the latter part of 1973. This differentiation, arising from the laxness of TRMP control and from the confusion over funding continuity, was evidence.

in the degree to which some of the Projects had departed from the TRMP planning approach. While their original orientation had been mainly to the functional areas of training and communications, some of the regions had retained these ties and others, particularly the North Shore, had shifted to hospitals and other areas. The Cape Cod region had received a Robert Wood Johnson Foundation grant of \$400,000 to implement a regional communications network, for example, and the Regions in the Western part of the state were preoccupied with the Ambulance Law passed in October. The North Shore Project was working in all these areas, but the primary focus was on the hospitals, which was the institutional base adopted by OEMS.

Even though their focus appeared to be similar to that of OEMS, a conflict still existed in the Project's specific strategies for operationalizing that focus. The Project structure was established with the CHP planning approach in mind, using the committee structure to pursue the immediate development of a regional plan (the traditional "B" agency approach); while the state planned to use the structure to develop communication, working relationships, and understanding among the providers represented on the committees, the other Projects were faced with similar, though often more severe, conflicts with the state approach. In the process of writing the 1973 HEW proposal, OEMS had thoroughly reviewed the Projects' components of the proposal and forwarded them to Washington, in many cases, with expressions of displeasure and promises of reforms to be made. Their attempts at reforming the Projects' activities in the coming year resulted in much friction between OEMS and the Regions, and these initial differences were to be exacerbated by further developments during the program year, particularly the passage of the Ambulance Law and the contract renewal process.

In addition to the initial differences in approach between the state and the regions, the local interrelationships envisioned by the state had the potential to place even the most cooperative EMS Projects in very uncomfortable positions. As proposed by OEMS, the Area Network concept gave the EMS Projects the general responsibility for developing interrelations among very volatile institutions that were not accustomed to relating in formal fashions. For example, the EMS Project's primary responsibility was to join together hospitals on Area Hospital/Medical Committees to discuss such delicate subjects as diverting patients from one facility to another based on superior emergency care capabilities in the latter, formalizing transfer protocols and the like. The traditional atmosphere in which hospitals interrelate is one of jealousy, parochialism and competitiveness.

With this as a beginning, the Projects were then to expand their activities to deal with developing cooperation among town ambulance services, which tend to operate in an atmosphere similar to, if not more intense than that of the hospitals. It was the responsibility of the Projects to deal with these situations on a day-to-day basis, responding to the local needs, obtaining state resources and assistance and at the same time, guiding the local providers along a path that would eventually result in Area EMS Networks.

The passage of the Ambulance Law created additional problems for the EMS projects in their efforts to implement the area concept. To some extent the Law added significantly to the importance with which the EMS Projects were viewed in the communities. The Law effected towns in two major areas -- training of ambulance attendants and upgrading the quality of the vehicles used in the services. With these considerations in mind, a number of communities began to utilize the Project to provide technical

consultation in the process of reviewing their services for compliance with the Law. The training Task Force became important in cooperating with the state and with Blue Cross (who provided funding) to set up hospital-based EMT courses for communities wishing to train their ambulance staffs.

At the same time, however, the Law created even greater difficulties for relationships between the Projects and the State. The fact that the Projects were working more closely with a wider spectrum of community EMS providers was, of course, to be desired in terms of the enhanced cooperation it could foster, but it created difficulties in two particular ways. First, the assistance that local providers requested was not always in concert with state desires. Many of the local providers were intent on fighting the rules and regulations that were being promulgated by the state, and this created obvious difficulties for the Projects. In addition, the Law naturally resulted in an increased focus on the transportation component which, in some cases, diffused the Project's attentions from their hospital-related primary directions. Projects which had previously focused on transportation were, of course, most susceptible to this tendency but, to some extent, the Law caused personnel diversion in all the Projects.

The contract renewal process served as the final step in the escalation of conflicts that had been brewing between the State and the EMS Projects. The OEMS, in writing their proposal for EMSS Act money, triggered an open battle for the continuation of the Projects subcontracts, which resulted in, among other things, the replacement of two of the Directors of the Regional EMS Projects. The most important outcome of this process, however, was the eventual consolidation of Project activities under the

control of OEMS. The conceptual and programmatic directions remained the same, in terms of the Projects' activities, but the performance expectations were made somewhat more explicit and stringent. The proposal also made it clear that the planning phase of the Project was ending and that implementation was about to take over as the primary thrust of the programs, both at the state and the regional levels.

The North Shore Project, however, emerged relatively unscathed from the proposal-writing process. With the influx of EMSS Act funds, the staff of the Project had grown and, as a result, was able to expand the Project's activities to deal with the additional directions it was facing. The Ambulance Law had added both to the workload of the Project staff and to its influence in the region, and the EMSS Act had considerably refined the expectations that the state was placing on the activities of the EMS Projects. The North Shore Project's proposal and work program for the period of October 1974 through June 1975, clearly reflects this refinement.

In the next section, we will explore some of the activities of the Project, in one of its Areas, in its attempt to move toward the implementation of an Area EMS Network. We will deal primarily with the issues and interactions occurring in the formulation of an Area hospital network and with efforts to establish a regional ambulance service in the Area. The North Shore Project, with its record of following (or, in many cases, preceding) the state's programmatic directions, provides a good framework for examining the issues and problems in the Area Network concept and in regional EMS delivery.

Local EMS Activities: An Examination of the Greater Lynn Area

The case thus far has traced the evolution of state activities and the influences on the NSHPC regional level. Its final focus is on the local reaction to these regional and statewide programs in the Greater Lynn Area, which characterizes the conflicts and incompatibilities in a state coordinated but locally operated public service system, and the interactions of the organizational structures on a regional level. In order to fully understand the relationships between towns, agencies, and institutions, we first present the demographic characteristics of Region IV identified by the NSHPC as the regional context. These characteristics serve as important indicators of local institutional interests, of possible opposition to the regionalization of EMS, and the potential dynamics of creating an EMS System in this region.

An Introduction to Region IV

Region IV is heterogeneous in nearly every respect. Comprised of 27 cities and towns with a total population of over 650,000, the communities range from highly urbanized industrial cities such as Lynn to rural areas such as Essex in the Cape Ann section of the region. The area covered by the NSHPC extends from several miles north of the border of Boston as far North along the coast as Cape Ann and some twenty miles inland. Thus, a broad span of the socio-economic spectrum is included in the region, from wealthy professional communities to decaying industrial areas. In the original DMH arrangement, Region IV was divided into five Areas, but the EMS Project has tentatively defined three Areas as the geographic sections that will be developed as Area EMS networks. We have focused our efforts on the section they have termed Area 19, and in particular, on

five municipalities in that Area.

The five towns on which we will concentrate are Peabody (population 48,080), Lynn (90,294), Lynnfield (10,826), Saugus (25,110) and Swampscott (13,578).⁴ While Area 19 includes three other towns -- Salem, Marblehead, and Nahant -- we will in general be analyzing relationships only among these five communities, and for simplicity, we will be referring to the first five towns as Area 19. The socio-economic makeup of the population, geographical eccentricities, forms of government and existing EMS resources within the Area all play a part in some of the problems the EMS Project has encountered in Area 19. In particular, differences in the abilities of their residents to pay for services appears to play an important role in the willingness of towns to undertake cooperative arrangements for service provision. In Area 19, considerable differences in the economies of the towns has proven an important factor limiting the EMS Project's ability to foster regional cooperation, especially in the provision of ambulance service.

The Area, in the extreme southern portion of Essex County, is centered around the city of Lynn, an old industrial city with several large appliance manufacturing installations inside its borders. The economy of the city has been on the decline for a number of years, resulting in the concentration of most of the poverty areas of Area 19 within Lynn. The residences in Lynn are mostly two and three story walkups, with suburban areas located in West Lynn and in the other towns in the area. Peabody also has a substantial industrial base, but, along with Swampscott and Lynnfield, serve as middle and upper middle income suburbs to Lynn, and as a professional residential community. The coastal portions of the Area serve as a resort area for the Greater Boston area. The town of Saugus is primarily a middle income blue and white collar residential area.

The political structure of town government also plays an important role in the responses of the towns to proposals for changing their EMS provision. The structure of town expenditures and the differing levels of public exposure of actors in the political process came into play in the decisions that were made in considering alternative arrangements for ambulance services. Decisions about the EMS activities of Lynn, too, in particular, were strongly shaped by these types of political factors.

With the exceptions of Lynn and Peabody, the towns in the area use a town-manager town meeting form of government, peculiar to New England, in which the authority to allocate town funds is reserved by the town meeting of all residents, and the executive functions of the towns are served by an elected Board of Selectmen and a town manager, who provide the day-to-day administrative functioning for the towns. Lynn and Peabody use a strong city council, weak mayor form of government, in which the town decision-making takes place through council ordinances executed by the mayor.

In order to understand the particular problems faced by the EMS Project in Area 19, it is important to be familiar with the resources in the Area. The project's objective was to assess the appropriateness of the EMS facilities, treatment patterns, and transportation capabilities, and bring together the providers of EMS to organize these resources more effectively. A presentation of the current resources and their operations is necessary to understand the Project's objectives and processes of change in each of the EMS system components.

Current EMS Resources

The hospitals in the area are well located to provide emergency care and have well-established policies for handling emergency cases. There are four hospitals in the Area which provide emergency services. (See map 1) Two of them, Lynn Hospital and Union Hospital, are located in the city of Lynn, on Route 129, approximately four miles apart. Lynn is in the center of town and Union is located in the middle class suburbs near the Lynnfield and Peabody borders; J.B. Thomas Hospital is in the center of Peabody; and Saugus General Hospital lies on the eastern outskirts of Saugus, near the Lynn border. In addition, the Mary A. Allen Hospital in Marblehead and Salem Hospital in Salem provide emergency services in the Area. The major hospitals, in terms of size and staffing are Salem and Lynn, which contain some of the more specialized and expensive equipment in the Area. Clearly, these hospitals are well located for fast easy access to the closest emergency department (as are the hospitals in the other Areas of Region IV), so that all parts of the towns in Area 19 have hospitals within 10 minutes travel time. In these sense, the Area is a somewhat typical suburban region with well-dispersed and numerous emergency care facilities.

Judged by the quality of care,⁵ the hospitals are fairly uniform for "routine" cases but individually have tended to develop specialized capabilities and referral practices. Confronted with steady rises in demand for services, the availability of resources, and the pressures of being "community hospitals", the hospitals expanded at approximately the same rate until the early Seventies. With the exception of differentials in the availability of certain specialists and expensive and highly specialized equipment (such as the cobalt therapy unit at Lynn), the Area 19 hospitals

have all developed a very similar breadth of capabilities. The most obvious differences in care capabilities may lie in the degree of care available for a particular type of emergency in the different hospitals. Specialists in the Area are typically on the staffs of several hospitals. The specialists appear to have developed their own preferences of hospitals in which to treat their most severe cases, based on their perceptions of the depth of support capabilities available. In cases which require the use of these specialized capabilities, transfers and referrals are routine practice.

One implicit practice that has arisen is for the hospitals to handle all but the most severe cases that arrive at the emergency department, while the severe cases that require more indepth treatment are transferred to a facility that can support that treatment capability. An average of approximately 1% of emergency intakes are transferred to other hospitals. When a patient is transferred from these hospitals, they are generally transferred to another facility in the Area, with the teaching hospitals in Boston, or specialized facilities like the North Shore Childrens Hospital, the primary exceptions.⁶

The ambulance services are the other main set of existing EMS resources with which the Project must deal. The basic tasks of the Project's involvement in transportation have required assisting in the implementation of the Ambulance Law (i.e. quality assurance) and insuring the development of appropriate interfaces with the emerging hospital network. The important issues in these tasks revolve around the structure of the delivery of ambulance services and the implications that this structure has for the effectiveness of the efforts to develop a high-quality EMS Network.

The provision of ambulance service, like hospital services, reflects well-entrenched methods of service provision, though not a coordinated EMS system. The five towns in the area operate a total of seven ambulances, three of which are provided under contract from private ambulance companies, while the remaining four are operated by the police departments in the towns. Due to the small population and size of most of the towns in the Area, the ambulances are underutilized, indicating that the vehicles are idle a considerable amount of the time so the ambulance attendants infrequently use their medical skills. The towns that operate police-run services are Lynn, Lynnfield and Swampscott. The vehicles in these towns are located at the police department headquarters in the center of each town, with Lynn operating two vehicles, and Lynnfield and Swampscott each using one. Peabody contracts to provide two vehicles, one located in the rest of the town by Route 1. Saugus, similarly, is under private contract for one vehicle located in the police headquarters in the center of town.

For backup services to these formal facilities, Saugus and Lynn both have rescue vehicles operated by their fire departments, and these vehicles answer calls that come in when the regular vehicles are unavailable. Another common arrangement for provision of backup is an informal agreement with a private service to respond to calls in congested situations.

Implications for Area 19's Objectives for Change

The overriding problem that is presented by the current arrangement of resources in the Area is to organize them into a coherent system for the delivery of EMS in the face of the diversity of settings in which they pre-

sently operate. The EMS Project, in their attempt formulate an Area EMS Network for Area 19, is faced with the task of confronting directly the institutional and political conflicts that the present hospital and ambulance services engender. Their efforts in this direction will provide us with an understanding of these conflicts and their implications for the possibility of joining EMS services in regional arrangements.

In particular, the perceived similarity of the hospitals' emergency capabilities sets a difficult task for the EMS Project. Their objectives require a refined definition of capabilities, far beyond those indicated by the categorization scheme. They want the hospitals to state precisely their capabilities to handle the six types of cases specified in the EMSS Act.⁷ Furthermore, the hospitals should, according to the Project's program, organize their patient treatment protocols, in formal recognition of differences in capabilities, and take steps to make intake and transfer patterns conform to this organization. As we have seen, the hospitals had developed their own patterns of division of labor.

The main tasks imposed on the EMS Project for intervening in the ambulance system are insuring that service exists for all those who need it, training ambulance personnel to the level required by the Law (and maintaining that level), establishing arrangements for secondary coverage (mutual aid), and insuring the use of adequate vehicles to transport emergency patients. The training and mutual aid areas are noticeably deficient in Area 19. In an ambulance survey taken by the Project, the police services contended that they maintain mutual aid agreements with surrounding towns, but in situations where these agreements might be used, the most common practice is to transport patients in police cruisers, or to call a private service. A common complaint with using the private services for backup is

that their response times tend to be unacceptably high according to police department standards.

Taken together, in the face of potentially expensive legislated change in the quality of service, these issues serve to raise fundamental questions about the efficacy of continuing EMS services in their current form. The immediate questions revolve around the potential status of the service -- municipal, private, non-profit -- and the cost of providing service in alternative structures under the upgraded situation imposed by the Law.

Hospital Committees: Planning, Problems and Procrastination

The thrust of the planning initiatives of the NSHPC EMS Project reflects the State's emphasis on the hospitals as the center of regional EMS systems. As a result of this emphasis, planning has revolved around the hospital emergency care capabilities in six particular categories. The categories (medical including cardiac, trauma, point/drug overdose, pediatric/prenatal, psychiatric, and alcohol intoxication)⁸ are defined in the federal EMSS Act guidelines and reiterated as part of the State's program. The critically ill and injured patients in these categories, about 5% of the total real emergencies in all categories, were not considered salvagable a few years ago but are now regarded as the patients whose lives could be saved if definitive care is provided at the scene and at the appropriate facility.⁹

The first effort of the NSHPC was to form hospital committees, including the administrator, head ED nurse, and head ED physician of each facility within the area boundaries. Each hospital committee's initial agenda was to develop plans which recognized the different care capabilities needed for the effective treatment of the several categories of emergency patients and the differential capabilities of the individual facilities to

care for patients in each of these categories. These plans, called point of entry plans, addressed the sorting of patients to appropriate facilities after entry into the EMS transportation system. These plans can affect only those patients the system can now control, that is ambulance patients. Thus, if a severe burn patient was picked up by an ambulance and stabilized at the scene in a town whose hospital is not able to treat that patient, the ambulance attendant might make the decision to by-pass the closest facility in favor of a more distant hospital capable of providing superior burn care. The small number of real emergencies in these categories would appear to make such planning activities relatively unthreatening to the individual hospital. This should be especially true in Area 19, where all the facilities are likely to be typed as routine, and the number of transfers mandated by a plan would be especially small.

The process of pursuing a point of entry plan, on the other hand was uncomplicated because the similar capabilities of the hospitals meant that the category which would describe a facility did not prove to be useful information for planning purposes. As a means of getting finer data, the Project attempted to have the hospitals differentiate their own critical care capabilities. While this approach may yield more useful information for state and regional planning, the process does reveal problems with the State's methodology of planning based on hospital self-definition. In fact, the similarities between the hospitals and their desires to maintain a high level of care capability have made the differentiation process long and difficult.

It is important to note the problems of such a regional planning methodology because it may indicate the potential barriers to the implementation

of the plans. When asking facilities in a defined geographical area to develop their own hospital systems, planners must confront issues which cannot be addressed with this strategy. In the Lynn area, the relationships between the emergency department and the rest of the hospital -- the ED's role in provision of primary medical care by hospitals, the percentage of patients entering the hospital through the ED who are eventually admitted, and the economic return of the emergency department patients -- may influence the degree to which a hospital administrator is willing to alter the behavior of the facility to influence the flow of these patients.

Relationship of the ED to the Rest of the Hospital

All of the hospitals in the Greater Lynn area consider themselves community hospitals, and this self-image makes them aware of certain pressures from the "community". One of these pressures is the increased burden of providing a greater majority of the primary health care which was previously furnished by the family physician. The decline of the general practitioner has contributed to the view that the hospital is now the hub of an organization of medical care programs that includes emergency departments, outpatient departments and home-care.¹⁰

The increased flow of patients through the emergency and outpatient departments has made hospitals more aware of their new perceived role and image in the community. Anything which might reflect upon this image has taken on an increased significance. Returning to the previous example, a plan which would divert burn patients from a facility might, from the hospital's viewpoint, negatively affect its relationship with the community by carrying with it the implication that perhaps the hospital is not able to care for other emergencies as well. In essence, the hospitals have been asked to comply with a scheme that may be damaging to its participants.

Implementing the program then, will require an effective public education program which would provide information about which facilities residents should use for particular problems, so that emergency department users will not think that delineating care capabilities in a particular category reflects on a facility's ability to treat patients in other categories.

Another relationship that exists between the emergency department and the rest of the hospital is the flow of patients from intake in the emergency department to inpatient beds. A certain percentage of patients that enter the hospital from the emergency department end up as inpatients. If this represents a high percentage of total inpatients, a decrease in the number of emergency patients might reduce the hospital's ability to maintain their bed census. This data reflects on the utilization of the hospital, and such information is frequently used by the hospitals to defend their need to expand. In addition, one criterion used by the decisionmakers in reviewing the application for expansion is the hospital's normal occupancy rate. Certainly a hospital would not like to divert patients from its services if it would severely affect this occupancy rate.

A last major issue, and probably the one most commonly voiced, is the economics of the ED-hospital relationship. Hospitals, in general, do not keep very good records of their emergency departments so they cannot cite figures which indicate if theirs is a profitable or losing operation. This makes it difficult for them to assess the affects of reducing the number of patients in a particular category on the profitability of the ED and the rest of the hospital. But hospital administrators are well aware how much the hospital gains or loses on patients with a given kind of insurance.

The sources of income to the hospital are divided up into third party payments, self-pay, and unpaid accounts. Third party payments include

such groups as Blue Cross, commercial insurance companies, Medicare, Medicaid, Workmen's Compensation, etc. which reimburse the hospital at different rates. Blue Cross, the federal government (Medicare), and the state government (Medicaid), because they are wholesale buyers of health care, reimburse on "cost" or "cost plus" basis, whereas the remainder of the purchasers pay rates which are not directly related to the cost of services to the hospital. Those who purchase health care without insurance pay much higher retail prices which attempt to make up the deficit the hospitals realize from the wholesale buyers and uncollectable bills. The state government reimburses welfare patients (Medicaid) entirely for emergency services rendered, but reimburses a flat rate for inpatient hospital use. Often a large difference exists between the cost of a patient to the hospital and the reimbursement structure which pays for the service.

In addition, the time until the fees for service are reimbursed varies with the type of insurance. Private insurers usually provide prompt reimbursement although most insurance plans have some deductible costs from the total charge to the patient, which may become uncollectable debts. Government reimbursements, on the other hand, often become uncollectable on the short term which can create a serious shortage of immediate cash intake for the hospital. In the interim the hospital must find money to pay its daily operating expenses. In situations where there is a severe cash flow deficit because the hospital is waiting for reimbursement, a facility is unable to support health programs for the residents that might reinforce community rapport. This cash flow issue plays an important part in the planning for emergency services in the Greater Lynn area.

These issues arise when regional planning presents the potential for exchanging patients between facilities and hence altering the "mix" of in-

surances that a hospital must rely on for part of its income. Regional planning and cooperation has the potential of equalizing the deficit burden on some of the hospitals, though at the disadvantage of others. Those hospitals who have a large number of welfare patients, for example, where the state government has been known to take in excess of three years to reimburse, would like to have more patients who will pay amounts that will cover their treatment costs and will pay cash so that the hospital has a good cash flow balance.

Another effective way to alter patient mix is by controlling whether the hospital's inpatient load arises from elective treatment patients or emergency admissions. Elective treatment patients tend to be those who can afford such health care and as a result usually have insurance that covers most of the cost. This makes them more reliable economically than the average emergency patient who could be anywhere from completely insured to uninsured. The important potential of reallocating patients in a regional system, then, is that those hospitals suffering poor cash flows from an excess of welfare patients could receive more elective patients whose reimbursement may help counteract the cash deficit realized by welfare patients. The immediate concern of the economic argument is to maintain a healthy cash flow to meet day to day operation expenses.

Hospital Service Planning in Lynn

The problems which arise in accomplishing a point of entry plan are illustrated by the efforts of the two hospitals located in the city of Lynn. In this instance, each hospital found that the relationship between the emergency department and the rest of the hospital became a source of difficulties in the process of emergency care capability categorization. Al-

though care capability categorization was not an immediate threat to the emergency department operations of either hospital, the close relationship of the ED and the overall stability of the hospitals led the administrators to fear that problems might occur in the inner operations of the hospital.

The two hospitals in Lynn are Lynn Hospital and Union Hospital. Lynn Hospital is located close to the downtown area, in a much older and larger facility, and has a long history of providing emergency health care for Lynn residents. It is also the "city hospital" without any subsidy from the city government. Union Hospital is located further from the center in the more suburban parts of the city, and just opened its emergency facility for 24 hour service in July of 1974. Union is an example of a hospital that didn't overexpand when most others did and so has a relatively well controlled operation and a good financial base.

The locations of the two hospitals affect the type of patients who compose the inpatient and user populations. Lynn Hospital has a much larger percentage of welfare patients, which, from earlier discussions, means it has a less healthy cash flow. They have a large outstanding debt from the State which has been accumulating for over three years. Emergency department patients generate many of Lynn's inpatients, and since the Lynn Police Department ambulance brings 95% of the city's emergencies to Lynn, they end up with a majority of the welfare inpatients. Union Hospital does not receive many emergencies from the ambulance service, but they customarily get the elective patients who are displaced from Lynn Hospital due to the influx of emergencies. From the standpoint of the public interest, this situation is inefficient and possibly detrimental to overall quality of service. Cooperation between the two hospitals potentially could equalize the burden of the welfare patients and balance the distribution of elective surgery to emergency patients so that the deficit suffered from the delayed

reimbursement of the state be more equitably distributed. Cooperation of this kind was attempted during the summer of 1974. The obstetrical/gynecology unit at Union Hospital was unprofitable because the birth rate was dropping and all the other hospitals in the area had ob/gyn units with low utilization rates. This prompted an arrangement between Lynn and Union Hospitals which resulted in Union closing their ob/gyn unit and Lynn taking on the extra load of patients. But at the same time, Union had increased their emergency capabilities by contracting with a physicians group to provide 24 hour coverage. Lynn could then send more emergencies to Union to ease the burden on Lynn's emergency department and to compensate for the decreased number of ob/gyn inpatients that Union would have.

This instance of regional cooperation would greatly improve the elective surgery and emergency patient mix and the insurance mixes at both hospitals. Significantly, however, the exchange never occurred because Lynn Hospital realized how many patients and how much money they would be sending to Union Hospital. Union closed their ob/gyn unit but few emergency patients came from Lynn Hospital.

This case illustrates that implementation issues as well as the planning issues must be considered when hospitals are asked to do their own planning. It is also clear that in regional planning, these issues are compounded because of the nonhomogeneity of the population in a region that is defined around an urban area. The principal consequences of nonhomogeneity are primarily economic and force those hospitals with poor cash flows to resist changes in the allocation of patients in their region if it will alter the type of patients using their facility.

In the case of hospitals, those same considerations which give rise to regional planning also promote insecurity in the relationships between facilities. The ability to reallocate patients through regional planning can

potentially ensure that the most appropriate care is provided for the critically ill and injured, but it also might have negative effects on the hospital's role in the community. The economic advantage gained from sharing those patients who contribute to a cash flow deficit might also conflict with other economic constraints, such as the need to do short term economic planning and pay operating expenses. The fierce competition between the facilities has hindered an honest confrontation of the realistic capabilities of each hospital in conjunction with the economic issues. The cooperation attempts between Lynn and Union Hospitals indicates that hospitals are only beginning to see themselves as part of a system which collectively provides the entire range of emergency care.

A general discussion of the hospitals' point of view evidences some of the economic and role conflicts which affect the way hospitals will react to regionalization. It is also apparent that adequate hospital resources exist, but there is no direct linkage to EMS, and in particular, regional EMS activities. This is further verified in an examination of the activities which proceeded from the NSHPC's first intervention into the hospital system. The differentiation of critical care capabilities and the development of point of entry plans began to indicate some of the problems of dealing with hospitals on a regional scale one level above the case of two hospitals in the same city.

The Hospital Committee Confronts the Emergency Department Issue

The same economic and role conflicts which dominated the earlier Lynn-Union debate surfaced in modified form at the hospital committee meetings, usually in arguments stressing the hospitals' similar staffing patterns, staff characteristics, and care capabilities. Important points of view were put forth by both the hospital administrators and some of the physicians,

therefore it is important to recognize the various positions held by those who composed the hospital committees.

The Interest Groups

The hospital administrators were the group with the largest number of pressures and conflicting roles. They had to respond to the policies of the hospital board of directors who are businesspeople rather than medical people. The board certainly did not want the hospital to lose money. Another pressure arose from the medical staff who control patient care. The staff's priority was to provide the best care possible and this frequently took precedence over economic issues. The community placed immediate demands on the hospital to provide all types of medical care, which affected the hospital's efforts to plan for future needs. The state health department and its regulatory powers were a potential threat to the way the administrator might deal with the demands of local interests. Finally, there was the economic condition of the individual hospital.

When the EMS Project placed the hospitals in a situation where they were told to do their own planning, the administrators became overprotective of their facilities. At the same time, due to all the conflicts, the administrators were vulnerable on many fronts. They wanted to save money, provide good comprehensive care, meet the community's needs, and avoid any downgrading due to the state's regulations.

Some of the physicians, who were tied to a particular institution, felt the hospital specialization of emergency cases would affect their ability to provide quality care. They thought the diversion of ambulance patients in a particular category would reduce their ability to treat the same patients who arrived at the facility by another mode of transportation because they

needed continual exposure to these patients to maintain their treatment skills. These physicians also believed the ambulance attendants were not capable of diagnosing a particular critical injury or illness in the field, so the patient should always be taken to the nearest facility for stabilization. In addition, they cited existing informal protocols for transfers as evidence that formalisms were unnecessary since existing procedures adequately provided for exceptional cases.

These physicians were countered by the specialist physicians whose interests tended to be separate from a particular hospital. They rotated through the facilities in the area and provided services to their patients regardless of the hospital. These doctors were able to differentiate between the facilities based on the support capabilities they knew from their experience were available. They consequently saw the usefulness of categorizing these capabilities. In particular, one group of emergency physicians which staffed both Lynn and Union's emergency departments, advocated the categorization of facilities. But they also sensed a need to expand the interests of the hospital committee to include the other EMS subsystems, especially transportation and communications. These doctors witnessed daily what they considered to be the mishandling of patients during transport by the ambulance services. The lack of communications between the hospital and the ambulance, especially prenotification of impending arrivals, they felt, also left the physicians unprepared for some emergencies.

It is important to note, however, that neither the hospital administrators nor the specialist physicians had a good knowledge of any EMS component other than the hospital. The administrators and physicians were aware of the issues involved in regional hospital planning and the linkages that were necessary among the hospital, transportation and communications systems to make the hospital component effective as the center of the EMS

system. But they did not understand the way the other components of the EMS system operated, and as a result, the hospital committee's later interventions into the communications and transportation systems reflected these misunderstandings.

The hospital committee meetings served as a forum for the interplay of these interest groups. Throughout the discussion the recurring theme was that all the hospitals had the same care capabilities. The procrastination in differentiating care capabilities and developing point of entry plans was primarily due to the conflicts previously described. The powerful interest groups, especially the hospital administrators, were wary to reveal their own problems without similar information surfacing from the other hospitals.

The NSHPC was caught between the State and the Hospital Committee. The State required the EMS Project to provide assistance and guidance to the committee in their planning activities and to stress the importance of resolving institutional conflicts. Conversely, the Hospital Committee was pressuring the EMS Project to concede that the hospitals were similar enough to eliminate the need for care capability categorization.

The state anticipated the reactions of the hospitals to this planning strategy by the development of a questionnaire that sought to obtain uniform information from all the hospitals for the evaluation of ED care capabilities. The questionnaire, developed by a statewide physician committee, ensured that a consistent mechanism was used across the state to guide the hospital committee discussions and to identify the appropriate hospital point of entry for emergencies in particular categories. The major intentions of the questionnaire were to serve as a stimulus for honest disclosure of previously confidential information, to provide an educational tool to teach the hospital administrators about the capabilities of their ED and to tell the

administrators what the state considered important in evaluating care capabilities.

The questionnaire was successful in providing another pressure on the hospital administrator. They were now answering the same questions and providing the same information. Along with the specialist physician's presence, the results of the questionnaire furnished a more realistic set of data for the eventual development of the point of entry plans. This planning strategy, although not action oriented, created an environment where some of the committee members were well motivated to act on these plans.

The Emergency Physicians Emerge as the White Hats

One important thing that emerged from this planning process was the consciousness of the emergency physicians that more action had to occur and that they were partly responsible for motivating that action. The physicians' concerns were transmitted, through the medium of the hospital committee, to other actors in the system who were part of the hospital committee. Two of their major complaints, the deficiencies in the communications system and the inadequacies of the transportation system, evolved into attempts to implement programs -- neither of which involved emergency departments directly. The initial development of a communications system and the attempt to promote a regional ambulance service are processes which suggest some important lessons in regional EMS planning and implementation.

The effort to implement a communications system points out a situation where a hospital committee can get things accomplished despite the lack of a well defined plan for action. Their attempts to rationalize emergency transportation failed even with the existence of an operational plan for the system. If both experiences are assessed in the same context, it becomes clear that regionalization has limited power to alter the operation of an

EMS system. What emerges is a set of considerations that reflect the feasibility of regionalizing components of the EMS system given the different nature of these components.

The Development of a Regional Communications System

The extension of the hospital committee into the development and implementation of a communications system occurred as a direct extension of the interaction between the specialist physicians and the hospital administrators. The problem of prenotification had continually plagued the ability of the ED doctors to prepare for emergencies and to reroute patients when a hospital was busy with other serious emergencies. If such communications could be established, it was believed, cases would no longer overload one facility while another in the area was not busy. Richard Jandl, administrator of Union Hospital, adopted the idea of a regional communications system as one the hospitals should develop and implement. It would not only enable the transmittal of administrative information but also permit a dialogue between the attendants in the field and the medical experts in the hospitals.

While these plans were being developed (in late 1974), no ambulances had radios to connect them with hospitals and none of the hospitals had base stations to communicate with the ambulances. It appeared to the planners that this lack of equipment was the only thing to prohibit a regional communications system. The need for communications was voiced by the emergency physicians in the hospital committee, and Union Hospital had reserve funds to engage in a program to assist the health needs of the community. The time was apparently ripe for some action to evolve.

The fact that the communications system was a prime target for the Committee's initiative is not surprising in light of the way such a system would function. Communications was an unthreatening component of an EMS system because it was not embedded in an organizational or institutional structure. There were no complications due to the non-homogeneity of the towns or the unequal usage of the communications links because as the system was envisioned, that is hospital to ambulance linkages, each town would

own their ambulance radios and the hospitals would have their base stations. Thus the program would be implemented so as to enable communications but not involve any cost sharing. As a capital intensive component, communications would link medical knowledge, administrative notifications and calls for service in an efficient information network. It could exploit the agreement that all emergency medical personnel need to have the potential to converse with each other quickly and easily. The barrier to implementation appeared to be a financial one that only needed initial money to buy the equipment. Once in place, the radios and base stations would be almost costless to operate and would require no reorganization of the provision of services.

These characteristics of the particular hospital to ambulance system permitted Dick Jandl to proceed without extensive preparation. A commitment was made to build the system around a Federal Communications Commission approved radio frequency, and the equipment for the hospital base stations was ordered, using the funds from Union Hospital with the intent to seek contributions from civic groups or the industrial sector. Having prepared a system for Lynn, the Committee solicited the cooperation of the other towns.

Efforts to gain cooperation from the towns were not difficult given Jandl's persistence. Since agreement had been reached that a radio system was needed, the Hospital Committee organized itself to locate money to support a region-wide communications network. In Lynnfield, Jandl's hometown, he convinced two members of the Union Hospital Board of Directors to support the project; Swampscott's money was raised by the committee responsible for the ambulance service. Due to the favorable publicity given to those who bought radios, the remainder of the towns readily joined the regional system.

There are critical points to be learned from the way the communications system was developed and implemented. The federal and state programs to develop EMS systems involved expanding definitions of the types of services that comprise EMS and developing upgraded and coordinated hospital networks to serve as foci for an expanded system that included communications as one of the system components. In the Greater Lynn case, the communications component did not previously exist, so the expansion of the EMS system could proceed by establishing the communications network and then identifying it as part of the hospital-based system. The fact that the communications system did not exist prior to the Hospital Committee intervention was crucial to the implementation of the system because there were no providers to include in the system planning process. More importantly, there were no existing vested interests in the way the service had been provided.

The EMS Project, while successfully implementing a communications network, also turned to the problem of integrating the EMS transportation services into the now growing network of emergency services. This venture into the ambulance services failed despite the fact that the planners used substantially the same methods as they had in their two previous attempts to institute changes in EMS. Their defeat, which appears to derive from the misapplication of their planning methods, the complexity of community political interests surrounding ambulance services, the difficulties of intermunicipal relationships, and some inherent flaws in the incentive structure offered by the EMS legislation, provides an instructive contrast to the Committee's previous successes.

In the section that follows, we will trace the development of a regional ambulance proposal from its initial planning stages through its

eventual failure. In this development, we will observe some of the problems that the Project's planning process encountered as a result of their isolation from the municipal decision structures in the region. The proposal that was developed required, for its implementation, extensive interventions in the municipal provision of ambulance services and several important conflicts arose within the towns in response to this proposal. From the proposal and other attempts at changing municipal ambulances that occurred in the region, the patterns of conflict and isolation between the planners, town officials and providers of service emerge as controlling factors in all attempts to modify the way ambulance service is provided. With the added complication of the plan's regional scope, the Project faced the difficulties of resolving conflicts among the diverse towns as well as within each town. In the face of these problems, it is not surprising that the Project failed in its initial attempt at planning for the transportation component. But in its failure, it uncovered some valuable insights into the comparative incentives that must be provided to towns to insure their adoption of such proposals, and into the planning process that is required to minimize the conflicts that inhibit these changes.

The Transportation Planning Process

When the Project became involved in planning for the transportation component of EMS, an important step was taken. Previously, the planning activities had revolved almost exclusively around the development of the hospital aspects of Area EMS Networks. These planning activities had taken place in the Area Hospital Committees, internal to the hospitals themselves. The extension of Project activities into transportation services in the Area represented the first attempt to expand the process of Area EMS planning to components that existed in other non-EMS systems, out-

side the realm of the hospitals. As proposed by the EMSS Act and the OEMS program, the Project hoped to expand the scope of planning activities by establishing a "Task Force" in the transportation component. The Task Force was to engage in activities in the transportation component that paralleled the activities of the Area Hospital Committee in the hospital component. As this was the first attempt by the Project to apply the Task Force concept, it constitutes an important test of this mode of planning.

In Area 19, the Task Force planning mode was altered somewhat when the Emergency Physicians Group provided the initial impetus to extend the EMS Project's activities into the transportation component. In the summer of 1974, several of the physicians had begun to express dissatisfaction with the quality of the existing police ambulance service of the city of Lynn and with the city's apparent lack of concern for complying with the Ambulance Law. Several of the doctors recalled incidents where apparent mistreatment in transit had worsened an emergency patient's condition. They also noted that none of the Lynn police force had enrolled in EMT Courses at the Union and Lynn Hospitals, the two hospitals served by the Group. With these concerns in mind, Dr. James Wasco, the director of the Lynn Emergency Physicians Group, contacted the EMS Project, and, with the Project's assistance, began to plan alternatives to the Lynn Police ambulance service. The people at these meetings, eventually constituted by the EMS Project as the Greater Lynn Emergency Medical Transportation Task Force, were motivated by a common concern about the quality of pre-hospital EMS in Lynn. The Task Force had a membership which resembled that of the Project's Hospital Area Committees'; Union and Lynn Hospitals were represented by their emergency physicians and administrators, and the EMS Project provided staff assistance to their efforts.

Initially, the Task Force considered municipal alternatives to the Lynn Police ambulance service. They examined the fire department, private companies and the establishment of a new municipal EMS department as possibilities, with the ambulances potentially stationed at the two hospitals. None of the municipal possibilities attracted much positive response, but the concept of hospital-based ambulances suggested the formulation of a non-profit EMS service that covered, regardless of municipal boundaries, the entire service area of the hospitals. Once the Task Force had reached this stage they began to assemble the details of their final recommendation as an alternative to the police service -- a unified regional ambulance service for the city of Lynn and four surrounding municipalities (Swampscott, Peabody, Lynnfield and Saugus).

The Task Force, with its original hospital-centered membership supplemented by financial consultation from the comptroller of Lynn Hospital, developed the regional concept into a formal proposal and presented it to officials of the communities involved. The presentation, in September of 1974, marked the completion of the Task Force's planning process, and the commencement of attempts to implement a Greater Lynn ambulance service. In the development of their plan, the Task Force had focused on the details of the alternatives to the present system, rather than the necessary institutional changes implied by their plan, and the political steps needed for its accomplishment. This fact created problems when they had to confront the providers and decision-makers who held sway over the actual delivery of services.

Problems with the Task Force's Approach

The primary flaw in the planning process undertaken by the Greater Lynn Emergency Medical Transportation Task Force lies in the fact that those who devised the plan and those who were to implement the plan were two separate groups of people, each with its own set of concerns and decision criteria. Those town officials and providers of service who were responsible for ambulance services were concerned with issues of cost and institutional relationships which the planners were not prepared to address, and this situation contributed to the eventual demise of the plan. The decision taken by the Project in adopting this mode of operation, therefore, must be viewed as a procedural error with important consequences for future planning efforts for the components of EMS which involve a wider circle of decisionmakers than the hospitals and medical community.

The Task Force model of EMS planning envisioned the application of the Area Hospital Committee's approach to the other components. The Area Hospital Committee had included the providers and administrators of emergency hospital services, thus including the entire range of concerned groups in the planning process. The issues that surfaced in this process did not always relate directly to the provision of emergency service (e.g. the cash-flow difficulties and patient mix problems in Area 19), but considering these issues both resolved substantial conflicts among the interested groups and increased the prestige of the Hospital Committee. The Transportation Task Force, however, failed to engage a realistic range of concerned people to address their issues.

The Transportation Task Force brought two sets of concerns to bear on the ambulance services of Greater Lynn -- the medical concerns generated by the emergency physicians and the Area Hospital Committee, and the EMS plan-

ning concerns of the EMS Project dedicated to the development of an EMS system for the Area. For instance, one of the basic features of the plan was that all services for the towns would be performed by four vehicles with 36 attendants. The Task Force pointed out that these attendants would receive much more frequent exposure to emergency patients, which would enable them to maintain their skills better than the 219 attendants currently serving the Area.¹¹ Also, with the ambulances stationed at hospitals, the attendants could receive ongoing training in the emergency rooms to supplement their EMT skills. These arguments, among the major points presented by the Task Force, illustrate their concern for quality of care and their attempts to develop EMS systems through proper planning for service provision, and reflect the preoccupations of the Task Force's membership.

The nature of the Task Force's membership, while it closely resembled that of the Area Hospital Committee, represents a major deviation from the Area Hospital Committee's approach in its translation to the transportation component because providers of ambulance service and political decision-makers in the Area were not represented on the Task Force. As a result, the concerns of the municipal providers of service were not adequately presented to the Task Force and the interactions that had occurred between planners and providers on the Hospital Committee were not paralleled in the Task Force. In the case of the transportation plan, the health personnel participating in the Task Force, who had served as providers in the Hospital Committee, acted essentially only as planners since they played no role in the provision of ambulance service. The ambulance providers, on the other hand, had little expertise in hospital matters, nor were they planners. So, in omitting ambulance providers from their membership, the Task Force failed to preserve the elements of the Hospital Committee's successful process when

they applied their planning model to the transportation. In effect, they transferred the form but not the substance of their process to the transportation component. The efforts of the Task Force to change Lynn's ambulance service illustrate clearly the difficulties inherent in the planning process chosen by the Task Force.

Problems within the Task Force: The Health Decision Process

In February of 1975, long after the development of the regional plan, the mayor of Lynn approached James Wasco, of the Emergency Physicians Group, and Dick Jandl, the Union Hospital Administrator, about the possibility of a hospital-run ambulance service for the city. In response to this request, Jandl and the Task Force quickly reworked the major aspects of the regional plan into a hospital-run proposal for the mayor's consideration. The shift that this necessitated (from an unspecified regional administrative body to a hospital-run service) raised the first major problem in this implementation effort of the Task Force. This shift constituted an inconsistency with a position that Lynn Hospital had established early in the regional planning process. It was the Lynn Hospital's position that their cash flow deficit would make it impossible for them to consider any subsidy of an ambulance service for the city.

Six months later, an article appeared in the 'Lynn Daily Item', prompted by a press release from the mayor's office, that quoted him as saying that the hospitals had offered to run the city's ambulance service. The publication of the idea in the 'Item' placed Jandl in a rather embarrassing situation because it had mentioned both hospitals and Lynn Hospital had not yet been approached on the subject. The article had also placed Harrison, the Lynn administrator, in an uncomfortable position. His hospital could not afford

to subsidize the service, but he was afraid that the article sounded like a public commitment that the hospital had to meet or risk losing credibility with the community.

The ambulance question, thus, had resurrected some of the problems that had transpired in past relations between the two hospitals. Union, using its favorable financial situation, was trying to increase the number of in-patients in its recently expanded emergency department, and an ambulance service might contribute to this effort. Lynn Hospital, while it could not become financially involved in the ambulance venture, did not wish to lose any public relations benefits that might accompany the service. These concerns were resolved at a joint meeting of the Boards of the two hospitals, where agreement was reached that Union would bear all costs of the service.

Another concern that was expressed at the meeting was a hesitance to get involved in the political processes of the city. The hospitals followed this policy by awaiting a commitment from the city, before the hospital service was activated. This commitment was never forthcoming, and, although Jandle and other members of the Task Force continued to discuss alternatives with the mayor and the city council, the hospitals never really pressed the issue with the politicians or the public.

Two observations can be made about the health decision process on the basis of this abortive attempt to become involved in municipal services. First, the hospitals are relatively naive in their dealings with the political process. The newspaper article essentially forced Union Hospital into the agreement. It also prematurely upset Jandl's approach to Lynn Hospital, which could have caused serious problems between the two hospitals. But, the article served the mayor's needs quite well, as he was then under attack for inaction of the ambulance question. A second observation is that the hospitals are reluctant to intervene in the political process, even as an

extension of concerns that arise within the hospital. They preferred to deal indirectly (i.e. through the mayor) with the decision-makers and providers of the present service. Their actions closely resembled the Task Force's, in that they were prepared only to propose an alternative, and were neither willing nor prepared to do the political groundwork necessary to insure that the proposal was adopted.

Problems with the Task Force's Isolation from Political Questions

Because of its isolation from the Area ambulance providers and the controlling political processes, the Task Force was not adequately prepared to adapt their proposal to meet the demands or the arguments of the decision processes that controlled the municipal services. When Jandl was exploring the hospital service with the mayor, he had begun to bridge the dichotomy between the health and political concerns. However, even in this attempt, the municipal service was treated as a monolithic structure, with one pressure point, where, in fact, there were two distinct sets of considerations involved in responding to such a proposal. In the towns of Area 19, we observed that responses to attempted interventions in ambulance service were formulated through a process of interaction between the elected officials and administrators of the towns, on the one hand, the providers of the service, on the other. Moreover, these two groups of people each had different criteria for the formulation of their positions about the intervention in question, and these criteria were similar throughout all the attempts to alter ambulance service that we encountered.

When the Task Force presented their regional proposal to the towns that were to be involved, problems of municipal political decision-makers immediately began to make themselves felt. The failures of the plan, originally intended to include all eight towns in Area 19 but ultimately rejected by

each of them, reflects not only the inadequacy of the planning process that developed, but, perhaps more critically, the complexity of the problems raised in restructuring municipal services to conform to a regional plan. Implementation of the regional concept required that the towns intervene in their present ambulance provision, either to eliminate the present service or to alter its operating procedures. In addition, the regional proposal required that the towns resolve to cooperate in the provision of ambulance services.

Issues in the Towns: Considerations Neglected by the Task Force

The alteration of municipal ambulance services in response to the regional proposal required the concurrence of three groups of people in each town -- the Task Force planners, the decision-making bodies and elected officials in the town, and the present providers of the service for the town. Our case provides ample evidence that these three groups tend to operate independent of each other, and, with the exception of confrontation in public situations, the influence that each exercises on the other groups is either subtle or nonexistent.

Intervening in Municipal Services: The Conflicts that Arise

In the absence of other constraints or influences, officials of the towns placed the major emphasis in their consideration of proposals on the immediate cost of implementation as compared to the present operating cost of implementation and to the present operating cost of their ambulance service. However, the structure of costs, because of the accounting systems of both private and public ambulance services, tends to produce great conservatism toward revision of the structure by which ambulances are pro-

vided. The tendency to retain their original service arises from two characteristics in the town decision processes about their ambulance services.

First, the services are provided in a manner which makes it difficult to determine the exact present cost of operation for use in comparison with the cost of a proposed change. Except in situations where there is an anticipated rise in present cost which can be calculated, town officials are left with no possibility of a substantive cost comparison to consider as a benefit of the alternative service. This leaves officials without considerations that would counter the second characteristic of municipal ambulance services -- their ability to generate favorable externalities for the providers (publicity, overtime pay, etc.) and the resultant desires to retain the service in its present institutional environment.

In terms of these characteristics, two observations can be made of the North Shore case. Only when the cost considerations clearly outweigh the externalities, will the providers agree to proposed changes that adversely affect the externalities. And only when the providers accede to a change or the cost benefits can be clearly demonstrated to town officials, will the officials press for action that runs counter to externalities that benefit the providers. An examination of some situations in which changes in the municipal ambulance service of the North Shore were accomplished bears out these observations.

The systems of cost accounting and externalities in municipal ambulance services have their roots in the structure of service delivery in Area 19. In all the towns of Area 19, the police were the original providers of ambulance service, dating back, in some cases, more than forty years. The three ambulance services still provided by police (Swampscott, Lynnfield, and Lynn) operate in response to calls for service which come to the police

headquarters, where the ambulances are located. Upon receiving a call, the dispatcher will dispatch a police cruiser to the scene of the incident, a policeman from headquarters with the ambulance will meet the cruiser at the scene and one of the men from the cruiser will accompany the patient and the ambulance driver to the hospital. This arrangement allows the patrolmen to perform routine police duties when they aren't servicing an ambulance call.

The ability of patrolmen to perform dual functions in police ambulance services is the factor which makes cost accounting complex because it is difficult to allocate manpower costs between the police and ambulance functions. In this arrangement, the cost of ambulance services, with the exception of the cost of vehicles, becomes subsumed into the general budget of the police department, with the result that it is sometimes argued that police ambulance services are cost-free. This argument, of course, ignores the decrease in police services that occurs during ambulance calls, but it cannot be ignored since its common use in debates about ambulance service does point out the difficulty involved in placing an unequivocal cost figure on the police provision of services. It thus becomes difficult to support an argument for changing from police service based on cost comparisons. An examination of the conditions under which two towns in the areas changed from police to private provision of service illustrated the magnitude of comparative benefits that must exist to cause such a change to be financially sound in the face of the "cost-free" status of police ambulances.

Conditions for Change in Area 19: A Favorable Cost Comparison

When Saugus originally changed to a private service, the company offered to provide coverage without charge to the city, as an alternative to the

police service. The town was able to agree to this arrangement for two reasons. The first reason, of course, was that the cost to the city was demonstrably less. The police might have objected to the removal of the service, except that the demand for transport services to the town's four nursing homes had grown immensely, and the service had become a nuisance to the police without the benefits that might have come had the rise been in emergency calls. The provision of this non-emergency service was moreover, becoming a hindrance to the performance of regular police duties. So, in the case of Saugus, the town officials and the providers both had strong financial incentives to find other means of providing the ambulance service. In Peabody, the change to a private company occurred when both of the town's police ambulances were demolished in accidents over the course of one month. The town was in a position where the immediate purchase of two vehicles (each \$20,000) was required to maintain the police ambulance service. This expense overrode all other considerations and the mayor signed an emergency contract with a private provider. In both towns, an offer was made that the town "couldn't refuse".

Institutional Inhibitors of Change: Externalities for the Providers

In attempts at changing service in two other towns, Lynnfield and Lynn, the cost considerations were not as clear cut, and the institutional concerns of the providers assumed the major role in the outcomes of the towns' decision processes. An examination of these attempts reveals the importance with which the providers view the externalities associated with the ambulance service, and the great degree of influence they can exert in protecting their interests from outside interventions.

In Lynnfield, an abortive attempt was made to develop an ambulance service provided by an agency other than the police. The response of the police to this effort indicates the extent to which police have come to view the ambulance service as being an essential part of their purview, and some of the problems that can arise in trying to influence their delivery of the service. The two main advocates of the program, Tom Flaherty and Dick Jandl, had been very successful in generating substantial interest in the concept of a volunteer ambulance service for the town. Their arguments in favor of the volunteer squad rested on two issues -- the police were not sufficiently trained as ambulance personnel, and a serious delay could result if the two Lynnfield police cruisers were involved in police work when an ambulance call arose. They maintained that the volunteers would be more enthusiastic and better trained in the provision of emergency medical assistance than the police, and that they would constitute a dedicated service, as opposed to the police dual-function.

The police chief responded to this attempt in a particularly defensive posture, and began the process of lobbying against the proposal. He thought that the ambulance service was an essential part of the department's relationship with the community, and interpreted this attempt to remove the service as an attack on the police service in general. In one of the meetings called to consider the matter, he promised that his men would voluntarily receive EMT training, which resulted in the training of a third of the force. Furthermore, he argued that a volunteer service would be beyond the control of the town, and that experience had shown that volunteer efforts tended to dissipate after a period of time, leaving the town without an ambulance service. He pointed to the problems of the fire department in their recent conversion from an all-volunteer service to one that was half composed of full-

time employed fire personnel, due to an inability to obtain reliable volunteers in sufficient numbers.

The Concerns of Municipal Providers of Ambulance Service

In Lynnfield, then, the ambulance providers had two main concerns. They wanted to insure that the town would retain control over the service, which was interpreted as requiring that it be provided by a municipal agency. They also wanted to protect the department's image (and the boost that it received as an externality from the department's provision of ambulance service) from what was perceived as an attack on the quality of service that they provided. In the city of Lynn, these concerns are echoed by the Lynn police union, in response to attempts to intervene in their service. But in Lynn, there are several added threats to the providers implicit in removing the ambulance service from the police department. The effect of these threats was to make the department almost totally inflexible to attempts at intervention by town officials, planners, and even the police chief.

The department's response to the proposed changes in its ambulance service was complicated by a long-standing conflict between the Lynn Police Chief and the police union, the Lynn Branch of the Massachusetts Police Association. This conflict gets to the roots of the types of externalities that can accrue to municipal providers of ambulance service. It revolved around the Chief's efforts to assign more men to police duties by reallocating men presently assigned to the ambulance detail.

Lynn is a high crime area and the Chief had been trying to increase the size of the force for some time to alleviate the crime problem, but he was frustrated in his attempts by the very strong police union, who saw additional men as a threat to the high rate of overtime pay possible under the exist-

ing work rules. The union's contract with the department includes a clause that specifies minimum levels of police on patrol duty for each of the three shifts in the day. This requirement, the "minimum manning clause", was intended to maintain an adequate level of police protection for the city. However, it also generated a demand for massive levels of overtime work since the minimum staffing figures were computed without taking into account such items as vacations and sickdays. A revealing investigation by the "Lynn Daily Item" pointed out that, in an average two day period, 54 men had to be called in on overtime to meet the minimum quota.¹²

When the full extent of the ambulance regulations became known, the Police Chief tried to seize this opportunity to remove the ambulance service from the duties of the police department in an attempt to alleviate both the crime problem and the demand for overtime personnel. The Chief was acutely aware that every time a call arose for medical assistance, a minimum of three men were required from the force to service the call and thus diverted from police duties. In addition, there were 11 men assigned as chauffeurs whose tasks were solely associated with the ambulance service. These men directly contributed to the overtime requirement since chauffeur duty was not considered as "patrol duty" in the contract with the union. The Chief, thus, was very responsive to all of the Task Force proposals that included removing the ambulance service from the department.

The union took active steps to block any of the proposals for altered ambulance service which the Task Force developed. They attended public meetings in force, and distributed a handbill that presented their arguments for retention of the service. On the handbill, they appealed to the residents' familiarity with the service that was now being offered, arguing that it would be superior to an unknown service. Their points were;

-- police services are on duty around the clock and available

for calls on an immediate basis

-- the force was well known for their compassion in assisting citizens

-- the cost to users would be minimized if the service was financed with municipal tax revenues

-- the police response time was excellent

-- the service had operated without complaints from users and inspired trust as a result

-- vital evidence might be disturbed in crime-related injuries by services other than police. In such cases, the police can serve as "expert witnesses" in court where other providers could not. 13

The union's public arguments, thus, revolved around cost comparisons, their positive relationship to the community, the quality of service provided by the police, and the requirements of the police function. While it may not have represented all of the union's motives for keeping the service, the handbill did make clear their intentions to press for its retention. In this effort, the union entered the political arena and eventually emerged with their desired result.

Conditions for Conflict in the Towns' Political Process

In both Lynnfield and Lynn, the providers had been able to dominate the municipal decision processes. In Lynnfield, the planners abandoned their proposal before it was raised at a selectmen's meeting, thus avoiding a conflict between the town officials and the providers. However, the situation in Lynn was different, and a confrontation did develop. In Lynn, the union, with its ability to mobilize several thousand votes in municipal elections, was able to convince the city council to vote unanimously to upgrade the police service to comply with the Ambulance Law without receiving an estimate of the cost of doing so or an assurance that the union's plan

would, in fact, comply with the Law.

The mayor was caught between the unrelenting union and the planners armed with the Ambulance Law. It was at this point that the mayor approached the hospitals as a last attempt to escape from his political trap. However, the time had passed when any of the three groups were amenable to compromise, with the result that Lynn remains committed to the police service, possibly in violation of the Law.

In the four towns that we have examined, the outcomes of the attempts at intervention in the ambulance service have all been resolved unilaterally by one of the two groups of municipal interests. In Saugus and Peabody, the officials of the towns and their concern for cost prevailed, whereas in Lynn and Lynnfield, the providers' position, in protection of their externalities, dominated the outcomes. In all four cases, there was essentially no compromise within the municipal decision processes, and, in Lynn, this fact lead to direct confrontations between the two groups. In Swampscott, the fifth town of the regional plan, town officials and service providers entered the planning and decision processes together and emerged with a set of alternatives that included compromise positions on the behalf of both groups.

The Case of Swampscott: A Compromise is reached

Swampscott's consideration of the future of its ambulance service predated the Ambulance Law by two weeks. The town fathers were concerned about the replacement of their decrepit, eleven year-old ambulance, and the Board of Selectmen appointed an Ambulance Needs Study Committee to investigate the purchase of a new vehicle. Various members of the Committee represented the police department (providers of the town's service), the fire

department, the Selectmen, and the media (in marked difference from the restricted membership of the Task Force). When the Ambulance Law was passed, the responsibility of the Committee expanded to include all the ramifications of the Law.

Swampscott's position with respect to the Law was typical of many of the small towns in the state. The Committee's initial interpretations indicated that the town would be required to purchase a new vehicle and train the entire force in order to comply with the Law. The Committee worked out an estimate of the annual cost of this upgrading and operation of the service, which, amortized over ten years, totalled \$20,000 per year. Town officials expressed the feeling that this annual cost figure was totally out of proportion to the small number of calls (250) that Swampscott generates each year, and, at this point, the Committee began to search for alternatives to the police service.

The police chief had been involved in this process from its beginning, and he realized the reasoning that went into this decision. His only concern was that the police department should retain the transport of non-emergent cases, which would provide the department with ample public relations value and serve as a cost reduction to residents in need of routine transfers and non-emergency transportation.

As a result of this broad representation in its planning process, the Swampscott Committee was able to reach three major accomplishments that had not been attained in the other towns of the Area. First, the Committee had accurately defined the concerns of town officials by reaching a realistic assessment of the cost of their present service. Second, they had acknowledged the providers' concerns by recognizing the external public relations benefits to the department that were created by the police ambulance service.

Finally, they were able to incorporate both of these concerns in a compromise position that allowed them to search for less expensive sources of emergency ambulance service while retaining the non-emergency aspects (and resultant favorable externalities) with the police. These accomplishments placed the town in a position which was extremely receptive to the regional ambulance proposal of the EMS Project Task Force.

Patterns of Isolation and Conflict in the Town's Decision Processes

The central point that emerges in considering the towns' decision processes arises from the isolation of the three components in the process -- planners, providers, and town officials -- from one another. We have seen two patterns of isolation in consideration of proposed changes in ambulance service, with the planning process isolated from the municipal political processes, and, within the towns, with providers isolated from town officials. These dichotomies produced decision processes in which the outcomes were based on incomplete consideration of the quality of emergency care that might result. In the North Shore case, the emergency medical care questions were dealt with by health personnel isolated, during the planning process, from the political process that must consider their plan, with the result that, in the implementation process, these health considerations seldom surfaced. Furthermore, the dichotomy within the political process, between the decision-makers and the providers of the service, served to further remove the public debate from EMS-related issues. Within the towns' decision processes, considerations were focused on reconciling the cost issues of town officials with the external incentives of the providers. This resulted in directing municipal attention to issues that were almost exclusively externalities to the actual provision of service, and, were far

afield of the concerns of the planners to develop an integrated regional service from the existing, municipally-based fragments.

Response to the Regional Plan: Issues between the Towns

When the Greater Lynn Task Force presented their proposal for a regional ambulance service to the towns, they assumed that the towns would resolve their individual internal conflicts and thus could consider the proposal on its merits compared to the present services. As we have pointed out, this was, in general, not the case. The towns remained caught in internal battles between the providers and the town officials throughout the process. But the Task Force seldom addressed the issues that contributed to the conflict, concentrating, instead, on comparisons of quality of care and costs of the services proposed. As a result, the towns could only approach the proposal at a hypothetical level, and were forced to consider the plan based on the assumptions under which it was made.

The proposed regional ambulance service offered two main features as potential improvements over the current service arrangement -- improved coverage characteristics and a better cost profile for the towns. When the towns considered the regional proposal, isolated from the intra-town issues, these features became the main questions for debate. An examination of the towns' treatment of these two features reveals three sources of complexity in working out details of regional ambulance services. With regard to the coverage characteristics, the towns displayed an inability to assess the benefits that arose from changing the coverage characteristics. This became obvious, first, when they failed to appreciate the potential for maintaining attendants' EMT skills offered by the greater rate of attendant activity provided by the more efficient regional arrangement. Second, the

towns demonstrated a highly unsophisticated notion of the concept of coverage with their expressed preference for "a vehicle in every town". By believing that their present coverage was at least the equivalent of the plan's, the towns ignored the benefits of high utilization of the ambulances and attendants, and the advantages of more effective backup coverage and lower average response time to calls provided by the regional scheme.

Allocating Cost Among the Towns

The final source of difficulty in the regional proposal was allocating cost among the participating towns. One fundamental characteristic of the regional proposal was that the provision of services was not tied to the municipal boundaries. Under the proposal, there were to be four strategically located ambulances serving the five towns, with service areas that corresponded to demand characteristics rather than municipal boundaries. This arrangement caused substantial debate concerning different strategies of dividing the operating costs equitably among the participating towns.

The regional ambulance service was to be financed in much the same way as a private ambulance service. As proposed by the Task Force, the basic revenues of the service would be generated by billing patients for ambulance runs, and would be subject to reimbursement by third party insurers. Insurance regulations that apply to private service would also cover the regional service, limiting their fees to a fixed service charge plus a mileage charge. The revenues that could be generated through patient fees were thus influenced by two factors -- the demand for service, and the types of reimbursement schemes possessed by the patients. The costs, on the other hand, are mostly fixed with respect to these factors. Roughly 85% of the cost of operating an ambulance typically accrues from wages paid to

the attendants who staff the vehicle. The depreciation of the vehicle and equipment accounts for most of the remaining costs, thus leaving only a small portion of the total cost that varies with usage of the vehicle. The characteristics of cost and revenue -- that cost is proportionate to the number of vehicles and revenue is dependent upon the number and economic status of the population -- and the main complicating elements in the allocation of costs among the towns.

Sources of the Financial Problem: The Effect of Socio-Economic Diversity

Problems involving cost allocation arise because of the tendency of an emergency ambulance service to operate at a deficit. The private companies serving Saugus and Peabody encountered this problem, with the result that both companies required a subsidy to meet the cost of stationing vehicles in the towns. The deficit was caused by a demand level that, coupled with the rate ceiling imposed by insurers, generates insufficient revenues from patient fees. This situation is aggravated by nonpaying patients (destitute or without insurance), and cash flow problems similar to those experienced in the hospitals can develop with high percentages of government insured patients. The private services can offset this deficit somewhat with routine transfers and other non-emergency patients, which often have the advantage of being schedulable. An emergency service, such as the proposed regional system, has neither of these advantages working in its favor, with the result that the municipalities in the proposal would be required to underwrite the entire operating deficit. It was the distribution of this deficit that raised the major inter-town problems in the consideration of the regional plan.

The concerns raised by the towns about cost allocation can be traced to an uncertainty about what, exactly, constitutes ambulance service, and to the socio-economic diversities in the region. The towns wanted to insure that they pay only for services that their taxpayers received. With service provision not in correspondence with town boundaries or with particular vehicles, the service received by individual towns became difficult to determine. There are two extremes to the range of definitions considered. One extreme would be to define the ambulance service as "coverage" for a town. The regional service would provide coverage to a town by insuring that it would service all calls from that town. Under this definition, the deficit might be apportioned according to the potential demand for service, based on the relative populations of the towns. At the other extreme, service might be defined as the number of runs made to a particular town. In this arrangement, the deficit would be allocated proportionate to the calls serviced in each town. Given the socio-economic characteristics of our region, a relatively impoverished densely populated central city surrounded by more affluent, less populous suburbs, both of these definition cause problems in the division of costs.

The size of the deficit "run up" by each town varies with the definition of ambulance service and with the revenue-generating potential of the town. Among the towns included in the regional plan, Lynn has, by far, the largest population and the highest percentage of uninsured and impoverished residents, so that service for Lynn would contribute most to the regional deficit. The other towns in the region, in considering the plan, were wary of assuming responsibility for any deficit generated by Lynn, and asked for precise definitions of cost allocation formulas and statistics of the revenue-generating potentials of the other towns. The

towns realized that, under any arrangement, Lynn, with 48% of the population and 46% of the runs in the region, would be responsible for a high percentage of the subsidy.¹⁴ Furthermore, Lynn was geographically in the center of the region, so that its presence in the regional plan did not place undue requirements for additional vehicles. For these reasons, the towns realized that Lynn's participation in the system was necessary to sustain the cost of maintaining the number of vehicles required for the dispersed locations of the other towns. But they sought to insure that Lynn's deficit would not offset any of the benefits that the other towns accrued by Lynn's participation, especially since a small percentage decrease in Lynn's deficit could mean a large increase in the other towns' required subsidies because of the difference in magnitude. With these considerations being predominant, there was no alternative presented that would alleviate the burden on Lynn, which could least afford to bear it.

Because the conflicts between providers and town officials were not directly raised in consideration of the regional proposal, the main concerns were with cost and institutional power. Had the plan progressed beyond the hypothetical stage, it might have been possible for the planners to propose their regional service on the basis of its cost characteristics and institutional structures. Unfortunately for the regional planners, there were two seemingly insurmountable obstacles -- the inability of the towns to resolve the internal conflicts and the lack of precise cost comparisons. As a result, the planners were unable to present the favorable aspects of their proposal before the providers and politicians faced their own conflicts.

Inadequate Incentives for Change

These obstacles to implementation of the regional proposal point to inadequacies in the incentives offered to the region by the Transportation Task Force. When the Task Force first conceived of an attempt to intervene in Lynn's ambulance, and, later, in the other towns' in the Area, they had relied on the Ambulance Law and on quality of care consideration to provide the towns with sufficient incentives to change their services. The Task Force assumed that the Law would aid in resolving the internal conflicts by making the cost of compliance too high to retain the present services. This, they thought, would make the towns amenable to suggestions for alternatives. The Ambulance Law, thus, was relied upon to cause internal institutional changes in the municipal service, and to achieve these changes by requiring that additional resources be devoted to the ambulance function. The Task Force saw its activities as providing a viable alternative to the financially untenable positions that they assumed the Ambulance Law would cause in the towns' services. As we have seen, the cost structures of town services did not allow the full impact of the Law to surface. The Law, as a result, failed in this respect, because it specified only resource levels of services and omitted the structure of the services from its regulations.

The Task Force also assumed that the comparative quality issues raised by the emergency physicians group would provide convincing arguments in favor of their proposals. As we have seen, the decision processes within the towns were almost totally isolated from both health personnel and health issues because of the dichotomies and conflicts within these processes. This left the outcome of these processes to be determined by cost and political issues, so that health considerations also failed to bring about the institutional changes sought by the Task Force.

One obvious element that was lacking in both the Ambulance Law and the federal involvement in Massachusetts EMS was a subsidy to ambulance services that were attempting to regionalize or to involve themselves in an Area EMS Network. With this subsidy as an incentive, the regional proposal in Area 19 might have been able to generate favorable cost comparisons necessary to overcome the internal factors mitigating against changes in the provision of municipal ambulance services. However, in the absence of a sufficient cost incentive and with the Task Force's failure to stimulate a sufficient incentive through quality of care arguments, the Project's regional proposal was at the mercy of municipal politics, and the negative outcome of the proposal reflected this.

FOOTNOTES FOR CHAPTER FOUR

1. From "Instructions for Regional Medical Program Grant Application for Emergency Medical Services Systems," Regional Medical Program Service, February 25, 1972.
2. from "Grant Proposal for the Planning and Implementation of Emergency Medical Services in Region IV, Massachusetts", April 3, 1972.
3. from the files of the North Shore Health Planning Council Emergency Medical Services Project.
4. Document of the North Shore Health Planning Council: Profile of Region IV.
5. Hospital planning in Massachusetts presently uses a categorization scheme to address the problem of providing comprehensive, high-quality emergency services in all facilities. Since adequate medical resources to continuously staff emergency departments does not exist, different categorization schemes have been devised by various organizations to differentiate emergency care capabilities (staffing patterns, equipment, etc.) indicating the quality of service in each facility. Massachusetts uses a three category scheme: Comprehensive, Routine, and Standby. All of the hospitals in the Area anticipate a rating of Routine (Category 2) Emergency Facility.
6. Jerri N. Udelson, Utilization of Emergency Departments in the North Shore, North Shore Health Planning Council, Inc., Emergency Medical Services Project, April 1, 1974.
7. The critical patient categories specified in the EMSS Act for the purposes of EMS planning are: trauma, cardiac, burns, high risk infants, poisonings, alcoholism, and drug overdose, and acute psychiatric problems.
8. Office of Emergency Medical Services, Massachusetts Department of Public Health, Guidelines for Development of the Massachusetts Emergency Medical Services System, August 20, 1974
9. U. S., Department of Health, Education and Welfare, Emergency Medical Services Systems: Program Guidelines, DHEW Publication, No. (HSA) 74-2009, Revised January 1975, draft.
10. Robert E. Walsh, Your Community Hospital, (Boston: Beacon Press, 1969)
11. North Shore Health Planning Council Emergency Medical Services Project, Emergency Medical Transportation: A Regional System, January 2, 1975, p.7.

FOOTNOTES FOR CHAPTER FOUR, continued

12. Robert Marder, "Police Protection: Costly, Inadequate", Daily Evening Item, Lynn, Massachusetts, October 16, 1974.
13. paraphrase of a handbill distributed by the Lynn Branch of the Massachusetts Police Association at a public forum sponsored by the Lynn Jaycees, September 15, 1974.
14. North Shore Health Planning Council Emergency Medical Services Project, Emergency Medical Transportation: A Regional System, January 2, 1975, p. 6.

CHAPTER FIVE

FINDINGS

In setting the policy debate in EMS, we have identified several problematic aspects of the current directions at the federal level. Since the passage of the EMSS Act of 1973, massive federal efforts and funds have been expended to establish hospital-centered regional EMS systems. We discovered a considerable body of literature devoted to the assessment of regionalization of government services, but this literature had several difficulties. First, the criteria developed to determine the efficacy of regional provision of services were oriented solely to public sector services, which left open the appropriateness of private sector (emergency hospital facilities) regionalization. Second, the literature was devoted almost exclusively to static normative assessments of the regional provision of services and had very little to offer about the dynamic process of achieving a particular regional assignment of services. Finally, the dynamic problems faced in developing regional EMS systems from component services provided in both the private and public sectors were an added layer of complexity in the federal policy and had been virtually untouched by the literature of regionalization. The literature, thus, had very little to contribute specifically to the process of evaluating the current regional systems policy in EMS.

From the data presented in our case study, we are attempting to examine three important areas of the regional EMS systems policy. First, we are addressing the normative issues arising from the regional scale of the service proposed by the EMSS Act. Second, we are examining the process of planning and implementation of regional EMS service systems.

And, finally, we are exploring the complexities of creating regional EMS systems from an initial state where components of service exist in a broad range of institutional contexts and scales, spanning both the public and private sectors.

The Application of Federal Criteria at the Regional Level

The area we chose for our study, Greater Lynn, was a subregional section of the North Shore Health Planning Council's (NSHPC) primary area of responsibility for health care planning. This region (Area 19), located in the northern part of the metropolitan Boston area, is composed of 8 towns. However, we addressed the events that united only 5 of those 8 towns.

The NSHPC conducted a patient origin study over their entire region (27 towns) in order to determine for planning purposes, the patient flow patterns around the hospitals. We found, then, that our region was defined as such because the residents of the area primarily used the hospitals within the 8 towns, hence spillover effects from other areas into Greater Lynn and effects from Greater Lynn to other areas would be minimized. Thus, the towns in Area 19 were identified explicitly by observing the existing patient usage of hospital emergency facilities within the Area. This definition was also implicitly hospital-based, which became obvious when the state's regional definition, based on hospital emergency care capabilities, yielded the same boundaries for the Area. The state's definition required the planners in the North Shore region to examine each of their existing regions and determine if the necessary hospital capabilities were present in each of the subregions. This finer delineation of regional boundaries was also necessary to enable

the statewide program to begin its agenda with the development of Area EMS Networks.

The criteria used for defining the Greater Lynn area patient flow patterns, is in full accord with the EMSS Act program guidelines which state: "A regional EMS system is one that is geographically described by the existing natural patient care flow patterns."¹ But the EMSS Act also stated four other criteria essential for planning and operating an EMS region: regional contiguity, medical competence, conformance with geopolitical boundaries, and sufficiency of population, resources, and financial support.

The entire state of Massachusetts is presently working under an EMSS Act grant program which is being uniformly performed across the entire state. This means that the state is divided up into 8 regions according to the state Mental Health planning regions, but also in line with the Comprehensive Health Planning Regional boundaries. These 8 regions are further subdivided by the regional EMS planners into Areas centered around the hospital facilities. This geographical pattern implies that each town in the state is part of a larger health planning Region and part of a smaller EMS Area. Each of the Regions and Areas is contiguous with the others, in conformance with the EMSS Act recommendations.

The Act loosely defines "medically competent" as capable of providing definitive care to a majority (95%) of general, emergent, and critical patients. Our Area contains four hospitals, collectively capable of providing almost all the emergency care needed. In addition, Boston serves as a resource for the most highly sophisticated care when needed. According to the federal definition, then, our Area is medically competent because it is able to provide definitive emergency care for a majority of

of the cases that arise within the boundaries. Those that need more sophisticated care are transferred to the hospitals in Boston, but this only comprises 1 percent of the cases,² which indicates that the hospitals within the Area provide care for most of the patients of the Area.

The area we studied was a five town subsection of Area 19, which retained the essential characteristics of the federal definition of an EMS region. Defining the region as such formalized the boundaries around the urban center of Lynn. This in reality is a natural way to group the towns because it provides a typical small metropolitan region. The city of Lynn, at the center of the region, is a densely populated city with high unemployment and a declining economic base. The surrounding area is primarily residential with a higher median income and no industry. We found then, that our region not only conformed to the Act's requirements, but also naturally formed a small metropolitan region.

The five town area of our case study had a total population of about 190,000 people. The resources included in the area for EMS purposes were four hospitals with well established policies for handling emergencies and well located for fast access to the closest emergency department. In addition, the five towns operate a total of seven ambulances through police departments and private contract. This means that there is at least one vehicle in each town that respond to calls only within their borders. The financial support of these services is through municipal budgets and in the case of the hospitals, private sources. We found in our study that the Area would be capable of sustaining an EMS system according to the federal criteria.

According to the above analysis, we found that we had a valid region

by federal standards. But at the same time, we wanted to discover what capabilities were added by enlarging the geographical area, to assist in developing regional EMS systems. We found that when the area expanded to include more than one town, no well-defined institutional base existed for regional decisionmaking. Each town still had to make their own decisions and then join together voluntarily as a region. In addition, no management capability existed at the regional level so that regional systems would be forced to create both a management capability and an institutional base at the regional level. Without an institutional base, the region so defined had no capability to create incentives for change. The only incentives that could be used were those that were created at the state level and those that arose out of the individual towns. The state level incentives were certainly not catered to our region, and town-generated incentives were of limited use in the scope and degree of regional influence.

We found that the only potential which increased by expanding the geographical boundaries was the planning agency, with a small project staff responsible for EMS planning. This agency provided the necessary guidance and technical assistance to the entire region in their attempt to develop regional EMS plans. In addition, the staff worked with the individual towns to help them with their problems in upgrading EMS resources and development of coordinated services with neighboring towns. This agency was well established in the health care system, so the EMS Project staff could rely on their connections with existing health care services to provide assistance to the towns. Since the only capability that the region gained by expanding its geographical boundaries was EMS planning, we decided to examine in greater detail the nature of the planning process.

The Nature of the Regional Planning Process

In the Massachusetts program, regional EMS systems were to be achieved through a planning process designed to incorporate planning and implementation activities into the same programmatic structure. The EMS Projects, the arm of the state program at the regional level, were to develop this planning and implementation structure and guide activities to establish regional EMS systems. The North Shore EMS Project, in pursuing this program, encountered many of the fundamental problematic aspects of the regional systems policy in EMS.

Guiding Values of the Planning Process

The fundamental problem encountered by the North Shore EMS Project was the divergence of values and interests among the participants in the planning process. The EMS Project hoped to guide the planning process to a consensus among all participants, which recognized the need for a regional EMS system and to accomplish this by effectively inculcating their values in the other participants. In this fashion, they hoped to motivate the adoption of their programmatic goals. They were unsuccessful in this critical endeavor because the values which the EMS Project applied to the planning process were systematically obscured and coopted by the institutional settings of the other participants.

From the data presented in our case study, we are attempting to examine three important areas of the regional EMS systems policy. First, we are addressing the normative issues arising from the regional scale of the service proposed by the EMSS Act. Second, we are examining the process of planning and implementation of regional EMS service systems. And, finally, we are exploring the complexities of creating regional

EMS systems from an initial state where components of service exist in a broad range of institutional contexts and scales, spanning both the public and private sectors.

The EMS Project was the only full-time advocacy force for quality of emergency care that we encountered at the local or regional levels in our case. Their concern for quality was coupled with a programmatic approach which sought to achieve higher quality service with the least additional long-term cost of operation. The quality and efficiency concerns of the EMS Project were exhibited throughout the case in ways consistent with their programmatic goal of regional EMS systems. In the hospital component, they advocated specialized definitions of emergency room capabilities which would foster concentrations of treatment facilities while ameliorating the costly duplications of lower quality facilities that currently predominated. In the transportation component, the EMS Project sought a regional ambulance service which would reduce the overall number of ambulance vehicles and attendants in the system. This would also increase the utilization of the attendants and, as a result, foster the retention and further development of the attendants' skills. Finally, they served as advocates within the planning mechanism for efforts to upgrade quality of service which arose outside the process. This function resulted in the development of the communications system and the efforts to improve the Lynn ambulance service.

Participants in the Planning Process and Their Interests

The role of the EMS Project as a consistent advocate of quality and efficiency is critical when viewed in relation to other participants in the

planning process. The planning process, as specified in the EMSS Act and the Massachusetts program, is designed to incorporate all the institutions and interest groups in EMS, and this presented the EMS Project with a wide range of interests to resolve into the consensus they sought. We found that both the regional scope and the multi-component nature of their planning efforts detracted from the development of this consensus in the planning process. However, we also found that the consistent quality concern of the EMS Project contributed to incremental changes towards conformity in the interests of the participants.

We found three distinct levels of involvement in the regional planning process. First, the state was implicitly involved by their determination of the overall policy directions and their performance contract with the EMS Project. The state, thus, had tied the EMS Project to the particular programmatic direction of hospital-centered regional systems. In our region, we found that this direction caused few explicit conflicts with the EMS Project, because they had preceded the state in adopting this focus. The Project constituted the only regional level involvement, however, and in their capacity as executors of state policy, we found them often caught between state-level performance demands and the recalcitrance of local participants in the regional planning process.

Of the three levels of participants, we found that the interests of local components of the planning mechanism were at greatest variance with the guiding principles of quality and efficiency. The local participants in the hospital component planning process included the administrators of all the hospitals in the region, emergency room physicians, emergency department nurses, "citizen representatives" and members of the EMS Project. We found that the most active participants in the process tended

to be administrators, emergency specialists, EMS Project personnel, and more sporadically, the citizen representatives.

We found that the participants in the hospital planning process divided into characterizable interest groups in their responses to initiatives of the EMS Project. Moreover, we found that these divisions were different when the planning process addressed issues of hospital resource allocation than when it focused on other EMS components. In the hospital planning process, the EMS Project could count on the allegiance of those specialists and citizen representatives who were not affiliated with particular hospitals. We found throughout the planning process, that these three groups consistently allied around quality issues. The cooperation of the specialists was particularly critical to the hospital planning process because they constituted the only consistent allies of the EMS Project within the hospital component.

Balanced against these interests were the hospital administrators and the physicians who were affiliated with only one hospital. We found that these individuals were extremely reluctant in concurring with particular quality of care arguments that would affect the operation of their hospitals. Hospital administrators responded to and represented the most complex set of interests in the planning process. These specialists were concerned that changes in patient allocation among hospitals might decrease the number of patients they treated.

The actions of the hospital administrators were reflections of pressures that originated within their hospitals, in the community, and from the state. Within the hospital, we found two distinct sources of pressure on the administrators--the financial situation of the hospital as interpreted by the Board of Directors, and the medical departments' competition

for hospital resources. The hospital planning process could aggravate both of these pressure points through its potential for altering the patient flow into the emergency department. We found also that the image that the hospital maintains in the community was of vital interest to the administrators and the emergency department was viewed as an important determining factor in this community relationship. We found that these factors motivated the administrators to try to conserve or expand the present emergency service capability of their hospital, often in conflict with the intentions of the EMS Project to upgrade the quality of services in the region. These pressures on the administrators were countered, to an extent, by the threat of a pending state hospital categorization law which the EMS Project used to encourage "voluntary" cooperation, and, also, by the quality of care arguments raised by specialists who were on their staff as well as the staffs of other hospitals.

We found that the interests of the participants in the planning process were a reflection of the professional and institutional setting that they represented. Administrators were interested in the same concerns which shaped their role in the hospitals--the financial and community relations implications of the planning process. Medical specialists were interested in the ways in which the planning process would affect the allocation of patients and resources to their specialties. Those specialists with the patients and resources of several hospitals available to them, were relatively unthreatened by the process. Furthermore, they devoted their efforts to the quality concerns of the EMS Project, as they perceived these concerns from their vantage points in the hospitals.

The Roles of Participants in the Planning Process

The roles which these participants adopted in the planning process were determined by the degree to which the planning focus was on subjects that could impact their interests. In the three endeavors we have examined--hospital, transportation and communications planning--we detected noticeable shifts in the participants' roles, depending upon which component was the focus. In the hospital planning process, the interests of specialists and administrators were potentially threatened and they continually questioned the aspects of the plans which were of greatest potential impact on their interests. However, when the focus shifted to transportation and communications, the issues were substantially removed from direct patient allocation, and the roles of administrators and specialists reverted to those of advocates for quality in these components.

As long as the resources of the hospital were not being committed in ways that were inconsistent with their financial positions, the administrators pursued the quality issues in other components. However, this pursuit could be self-serving in two ways. First advocacy efforts contributed to favorable publicity for the hospitals. We saw this in both the communications and the transportation planning endeavors (where Lynn Hospital, while unable to commit resources to these efforts, took steps to insure that their community relations were augmented by establishing that their hospital was not conspicuously absent from these advocacy efforts). Second, the communications and transportation efforts had the potential to subtly alter the emergency patient allocation process among the hospitals. We found that, although this was a relatively minor consideration, it did play a part in determining the roles adopted by administrators in the

planning process.

We found that, in planning for non-hospital EMS components, the role adopted by hospital personnel was that of quality advocates. This shift in role placed them in almost complete conformity with the planning process as established by the EMS Project, and allowed the process to focus on the quality and efficiency values that shaped its outcomes in the non-hospital components.

Interactions in the Planning Process

Interactions in the hospital planning process were extensions of existing relationships among the different hospitals and interest groups. The initiation of EMS Project activities served to focus their attention on the emergency department. This was especially true in the case of Lynn and Union Hospitals, where we found that informal arrangements, both in terms of patient and hospital resource allocation, played a substantial role in delimiting the extent and nature of cooperation among hospital and administrators in the planning process. We found that two separable lines of interaction were generated--interactions among the hospital, and between the characteristic interests of the hospitals and those of the EMS Project.

Interactions among the hospitals reflected their competition for emergency patients, with the cash inflow and public relations benefits that emergency patients can generate. As such, hospital's administrators were extremely wary of planning actions that might yield those benefits to other hospitals. We found this condition in interhospital relations throughout the planning process, and especially on the part of the smaller hospitals, whose patient loads might have been absorbed into the

larger hospital. We found several exceptions to this general principle in the relationship between Union and Lynn Hospitals, but this too was a reflection of past relationships and not a product of the planning process.

Interactions between the characteristic concerns of the hospitals and the EMS Project were somewhat complex. The EMS Project was under pressure from the state to generate point of entry plans, preliminary to planning for specialized facilities and they spent and invested substantial unsuccessful efforts to differentiate among hospitals. A recurring situation in this process was the reluctance of professional medical people to criticize the services of other professionals. The hospitals presented a united front in opposition to the EMS Project's attempts to differentiate among their capabilities with the claim that their facilities were identical. Specialists on the staffs of several hospitals attempted to refute this claim with their own observations, but the administrators were adamant in their contentions of similarity of their facilities. With this contention they were able simultaneously to avoid criticizing other hospitals and to protect their own hospital from changes in patient inflow.

The final critical interaction in the hospital planning process arose when data had been gathered that refuted the administrators' claims of similarity. At this point, the potential for formally recognizing differences among hospitals existed and the administrators reacted by pointing to deficiencies in the prehospital component that would undermine the effectiveness of a specialized hospital component. This reaction was critical because it signified the end of the internal dispute over the concept of defining care capabilities. Although the planning process remained stalled in the details of achieving these definitions, the participants' adoption of the concept constituted the major incremental

change in attitudes that occurred in the hospital planning process. It also provided additional motivation for transportation and communications activities.

In the transportation planning process, the interests of the participants--hospital administrators, emergency physicians, EMS Project staff, and other hospital personnel--were seldom threatened by the issues that arose, because these issues did not affect the hospital operations directly. As a result, the consensus which developed quickly among the participants embraced the values of quality and efficiency almost exclusively. The remainder of the planning process was essentially a research and development effort aimed at achieving these values in the resultant proposal.

In comparing the transportation and hospital planning processes, we find that the hospital planning efforts were attempts at resolving conflicts that arose from the competition at the regional level for EMS resources within the region, whereas the transportation planning process was a proposal-generating effort in which there was little conflict among the values of the participants. This difference in the nature of these two efforts resulted from the fact that the hospital planning process included the potential implementers of the outcome where the transportation efforts included only participants who acted in the role of planners.

The Mechanism for Interaction in the Regional Planning Process

In order to understand the nature of the interactions which occurred during the planning process, it is necessary to analyze the incentive structure that motivated the involvement of its participants. We found that the incentives which encouraged or demanded the involvement of the participants also determined their roles in the planning process. The

pending hospital emergency department categorization law, which would provide the state with authority to enforce externally developed plans on the hospitals, was a serious threat to the autonomy of individual hospitals' emergency care operations. The planning process presented hospital administrators with an opportunity to moderate the impacts of this legislation on their institutions and awareness of this opportunity was fostered by the state program. In this atmosphere, then, many hospital administrators exhibited a willingness to participate in this process to moderate the impacts of the law. Once such a process began, an incentive was created for other administrators to join, to protect their hospitals from adverse initiatives of the other participants. We found that this incentive structure played a critical part in contributing to the defensive posture of the administrators.

The medical specialists were motivated by the changes in resource and patient allocation that might arise from these planning efforts. They, too, perceived the potential impact that reorganization of emergency capabilities might have upon their specialty, and reacted according to their institutional role in the hospitals as advocates for the quality of service in their specialties. Doctors who were based at particular hospitals interpreted the quality concern as requiring the protection of their specialized resources in the hospital which they serviced. This concern for protection served to motivate their participation in the process. Other specialists, who served more than one hospital (and, thus, could be termed "regional specialists") interpreted the quality concern as the augmentation of their specialty in the region. They saw the regional planning process as an opportunity to effect this augmentation.

The EMS Project was required by the terms of their performance contract

to initiate, direct and participate in the planning process, so their role was relatively clearcut, though problematic, in attempting to establish regional EMS systems in their planning area. The planning process that they established had to meet certain descriptive and operational criteria. The descriptive criteria involved the development of a very delicate relationship with the local participants in the committee planning structure specified by the state. The operational criteria required the exploitation of this relationship, often in opposition to the immediate interests of the participants, to meet the necessities of developing a regional EMS system. These two criteria often worked in opposition during the planning process which placed a great strain on both the EMS Project and the planning mechanism.

The final participant-group in regional EMS planning--providers and administrators of the prehospital service component--was conspicuously absent from the planning process. This can be traced to the incentives that were offered to foster their participation. The major incentive offered to prehospital interest groups was the impending changes in services required by the state Ambulance Law. This incentive, however, did not have a regional focus, unlike the categorization law that was directed towards the hospitals. The Ambulance Law directed its provisions to the individual services, motivating them to seek additional resources within the municipal context.

The municipal incentives to participate demonstrated one critical difference from the incentives in the hospital setting. In the municipal setting, competition for EMS resources was entirely within the confines of the individual towns' budgets. In the hospital component, this competition was on the regional level for EMS resources. We found that this

regional competition generated hospital participation in the planning process, but that no similar incentive was offered to stimulate the participation of the prehospital services.

Institutional Responsibilities for Implementation

The planning process was conducted in the committee structure established by the EMS Project. The central component of the structure was the Area Hospital/Medical Committee, to integrate the plans for other components into the hospital component planning process. Since an essential feature of these committees was their representation of all EMS interest groups, the motivation for implementation was supposed to arise from within the committee structure as a result of the infusion of EMS Project values into the planning process. Since EMS was provided by both hospitals and municipal ambulance services, these two institutional settings were the basic targets for implementation.

In the hospitals, the power to implement changes in resource allocation was vested in the Boards of Directors, as represented by the administrator. In municipal services, we found implementation power to rest with elected town officials, which had legislative authority over the administration of these services. The elected town officials could, theoretically, exercise this power unilaterally, but the policies were generally set in interactions between providers and officials. Thus the implementation results would be determined by two complex sets of interactions--the decision processes in each of the hospitals in the region, and the political and administrative components of each of the municipal ambulance services.

The Outcomes of the Planning Process

The regional EMS planning process produced two forms of outcomes-- the ongoing planning mechanism and a regional EMS plan. The planning mechanism, a network of Area Committees focused on the various components of the EMS system, continued to function and discuss ways of improving the delivery and organization of EMS in the region. The intended outcome of the committee activities was the incorporation of the separate committees into one Area EMS Committee which would serve to maintain the established regional EMS system, and perform the functions of a "lead agency" as envisioned in the EMSS Act.

We found, however, that the Area committee showed little indication of developing the capabilities of a lead agency. In particular, we found the regional EMS Committee would have no source of financial support, apart from the support each individual EMS service could generate from municipal funds (ambulance services), operating funds (hospitals), or public and private contributions (communications). In addition, a separate management and administrative capability would have to be developed to enable the Committee to oversee the EMS system. As envisioned by the state and regional programs, this Committee membership would consist of representatives of all the components to facilitate the coordination of the established regional EMS system. Therefore, we found that the committee structure proposed to serve as the sustaining mechanism of the EMS system during development, implementation, and eventual operation, would have to generate additional institutional base, financial support, and administrative and management capability in order to conform to the EMSS Act's notion of a "lead agency."

The Regional EMS Plan

The regional EMS plan generated in the planning process was actually a set of plans for the system components. The hospital component, for example, produced a point-of-entry plan to advise transportation services and public education programs as to the most appropriate hospital for emergency patients' initial entry into the EMS system. In the process of developing the point-of-entry plan, it was also necessary for the Hospital Committee to determine the exact care capabilities of the regional hospital system. This was accomplished by using a questionnaire to collect the information, suggest standards for judging care capabilities and to make the planning process an educational experience for the administrators, nurses, and emergency department doctors. In addition, transfer protocols were formalized to ensure that the hospitals would be coordinated within their own component.

The Transportation Task Force that grew out of the Hospital Committee, also produced a plan for improving the EMS transportation services in the Greater Lynn area. Their plan involved 5 of the 8 towns in the defined region in a regional ambulance service that would replace the current town services. Each vehicle would be owned or contracted for by an independent non-profit emergency medical authority. This authority would provide independent management of the ambulance resources, coordinate dispatching, manage expenditures and a quality assurance program, and provide for continuing education of ambulance attendants. The number of ambulances in the region would be reduced so that added work experience would insure that their crews remained well-trained. The regional service depended on two sources for financing--subsidies from the towns and third party payments. The fact that the towns were going to subsidize

the service from their municipal budgets necessitated the development of a cost-sharing scheme to divide the subsidies among the towns.

In all respects, this transportation plan complied with the EMSS Act's concern that prehospital components be addressed and linked to the hospital component. As the plan was developed further, the demands of the political processes which ruled on municipal ambulance provision forced the final proposal to be a regional hospital-based service, with the hospitals in the city of Lynn serving as the managers. This further promoted the EMS system as a hospital-centered system with the hospitals in charge of the ambulance service as well.

At the same time, communications activities were in progress to create a regional communications network, but there was no plan to guide these activities. The activities were also guided by some members of the Hospital Committee who saw the need for better prehospital resources in the communications component. The communications system was to provide linkages that would enable ambulances to notify hospitals when they were bringing in a patient, would enable medical consultation between the hospital and ambulances and would facilitate the rerouting of patients if a particular hospital was overcrowded.

When viewing the hospital plan, the transportation plan and communications system activities together, we found that the regional planning process had generated plans or activities in each of the prehospital and hospital components that the EMSS Act emphasized in their policy. The hospital system was the central component around which the transportation and communications prehospital components were planned and coordinated. These plans outlined a regional EMS system that contained the necessary linkages to facilitate the development of a regional hospital-centered

EMS system.

Changes Necessitated by the Regional Plan

The regional plan required many changes in the hospital and ambulance services as a result of these new projected regional relationships within and between components. In the hospital system, the changes required on the short term were not very extensive. The planning process had generated point-of-entry plans that needed implementation, but the changes merely required recognizing the special care capabilities of the hospitals and allocating emergency patients to the appropriate facility. The substantive change was required in the long term, when preliminary data collection was complete. The point of entry plans and transfer protocols would then be used to design a regional hospital system with specialized emergency departments. This change was particularly critical because specialized emergency departments could have serious effects on the inpatient and outpatient allocations. It also had serious implications for other critical indicators of hospital well-being--the need to generate sufficient revenue, and the need to have the proper patient "mix" between emergency and elective surgery patients. Lastly, the regional hospital plan required an effective public education program to ensure that the system really worked.

The transportation component also required critical alterations if it was to function according to the plan of the Transportation Task Force. The proposal required that the services in the town relinquish responsibility for providing ambulance service and yield this service to the regional emergency medical authority. This meant that all the police and private

companies that were presently providing service in the region would have to abandon their ambulance responsibilities. In addition, the town decisionmakers would be taking part in a regional decisionmaking process that required municipal officials to allocate their resources to a service that would accrue benefits outside the town boundaries. This was radically different from the present decisionmaking process, in which benefits from municipal ambulance services were realized within the town. In a sense, each town was giving up a little control over the ambulance service provided in their town, and instead making decisions with four other towns. Most critically, the regional ambulance service demanded that the towns and the hospitals have similar value systems in regard to the regional ambulance service. Thus, an important outcome of the planning process had to be a conformity of consciousness about what good EMS meant and how it could be achieved with the regional service.

Implementation Results

The implementation of the regional plan was so embroiled in conflict that, for the most part, few of the necessary changes to develop a regional EMS system in Greater Lynn were effected. We found that the hospital planning process had accomplished their plan, but that essentially no change of behavior had resulted. The regional transportation plan faced serious and intractable conflicts that thwarted its implementation. And finally, although the communications system was implemented, it failed to alter EMS provision because it was to be used by other EMS components that suffered severe internal conflicts. We found, then, that attempts to create a regional EMS system which included all these components failed to establish the necessary linkages between the

planning stage and the implementation stage.

The Implementation of the Hospital Plan

The implementation of regional hospital plans encountered great difficulties in resolving the institutional conflicts between hospitals and hence fell short of accomplishing any substantive changes in the patterns of care provided. The primary issues that arose in the implementation of the hospital plans were directly linked to the conflicts that had characterized the planning process. First, the hospitals felt threatened by the pending categorization legislation. We found numerous manifestations of this threat in the reluctance of the hospitals to share resources at the regional level because each hospital was in competition for a share of the region's patient population. If the categorization legislation was applied, they would also be competing for the newly fixed hospital resources of the region. At the present time, however, the only competition was for the patient population, hence this surfaced as a major issue in preventing the implementation of the hospital plans.

Another critical issue that the hospitals faced in following a regional plan was the financial stability required to participate in a regional system which potentially altered the internal economics of the hospital. We found that efforts to reallocate hospital patients within the region altered two critical elements of financial stability--the types of patients (elective surgery or emergency) and their insurance types. One requisite of hospital financial security is a favorable cash flow that freed administrators from worrying about their daily operating expenses. Disturbing this cash flow was a critical issue that also

served to hamper efforts towards regional cooperation.

The last major issue in the implementation failure of the hospital plans was the relationship that the hospital had with the community it served. The administrators in particular were concerned that care capability categorization would taint the image of their hospital in the eyes of the community if a particular type of patient was rerouted from one facility to another in the region. We found this to be another manifestation of the regional competition among hospitals which was not reflected in their pattern of frequent transfers to the Boston teaching hospitals. The hospitals were much more hesitant to transfer patients within the region than they were to transfer patients to Boston, because they felt such intra regional transfers reflected more strongly on their image in the region. Since there were no strong public education programs going on in the region to reinforce the categorization efforts, we found the hospitals unwilling to implement their categorization scheme.

The only incentive we found applicable to both planning and implementation in the hospital component was the pending categorization legislation at the state level. The major impact of this incentive was to create a threat to the hospitals because of the future implications of fixed resources within the region and the implicit interhospital competition for patients and resources such a constraint would produce. This resulted in the hospitals resisting the implementation of any regional plans that would limit their immediate and future capabilities to compete for all types and categories of patients and resources available to the region.

The Implementation of the Transportation Plan

The implementation of the regional transportation plan surfaced many conflicts in an attempt to bring the municipal decisionmaking process in accord with the medical decisionmaking process. We found the major conflicts with the regional ambulance proposal were as much within the individual towns as between them. The fact that the ambulance providers were excluded from the planning process was critical to both these sets of conflicts.

The issues that arose within the towns did not address the regional plan explicitly, but reflected the municipal reactions to the demands of the Ambulance Law and the implications the Law had for altering present service provision. The immediate concern that surfaced in the towns was the cost of meeting the minimum standards of the law. We found the concern for cost also arose as a governing criterion when the towns considered the regional ambulance plan. We found that the operating costs of municipal (police) ambulance services were obscured by the dual-purpose nature. This meant that the cost of the regional service could only be compared to the apparently negligible costs of providing present service. The municipal providers of the service also realized benefits (overtime pay, public relations, etc.) which reduced their willingness to relinquish the service within the towns.

These issues served to complicate the situation when the regional plan was presented to the towns. Among the concerns that we discovered in the implementation of the regional plan were the difficulty of determining a cost sharing scheme and the difficulty of joining the health decision processes with the public decision processes. As a result, EMS priorities were dissipated in both the health system where

there was competition among other health services and in the public service system where the ambulance service had to compete for resources with other municipal services.

We found that the health care interests were concerned with the quality of care that was presented in the regional plan and the municipal interests were concerned with the immediate cost of implementing the system. The two value structures were rendered irreconcilable by pressures from the present service providers who did not want to give up the service. Therefore, the transportation plan never progressed beyond the planning stage.

The incentives for change in the transportation component--the Ambulance Law, the potential for reduced cost in the regional service, and the potential for improved quality of care--proved to be inadequate due to the institutional settings outlined above. Both the Ambulance Law and the potential for reduced cost in the regional proposal failed as incentives because they relied on comparisons with municipal services which successfully hide their total operating costs. The Ambulance Law was a more favorable incentive because it required an identifiable cost increase in present services, simultaneously over the entire region. We found that the operating costs of the regional service were not a strong incentive because they were compared with the hidden present costs of the municipal services. The other major incentive, quality of care, was generated totally within the health sector. We found that the municipal services had developed their own notions of quality care, and so were unresponsive to the health sector's more sophisticated ideas of quality. Moreover, the municipal perspective was reinforced by good public relations which their ambulance services generated, and criticism of the

quality of their services was a threat to these public relations. Thus, municipal decisionmakers were unresponsive to both the cost-related and quality care incentives to alter their ambulance services.

The Implementation of the Communications System

The implementation of the communications system was the most readily accepted endeavor of the EMS planning activities which we observed. We found the communication system to be malleable enough to attract the interest of all the providers of EMS because they envisioned the capabilities of the communications system as having a strong potential for establishing a relationship between the hospital and prehospital systems. In addition, the EMS interest groups saw the communications system as the real power in the EMS system because it could effect patient allocation even without point of entry plans in the hospital or transportation components. The cost of the equipment was not prohibitive, especially because it was only a one-time cost that could be offset by private contributions, and once in place the system maintenance costs were insignificant. Therefore, we found the communications system was implemented in our region.

We found, however, that although the communications system was easier to implement than changes in existing services, it did not change the behavior of EMS institutions that interacted with the new service. Hence, although links were created between the hospital and prehospital components, these links did not automatically result in interactions despite the new capability. In particular, we found that interhospital problems prevented the reallocation of patients, an argument that had been offered for the creation of the communications system. The weakness of existing

relationships between health and non-health systems decreased the willingness of health providers in the hospitals to assist municipal ambulance attendants in the field. Hence we found the communications system was limited in its capability to link EMS components by the severe internal conflicts within and among the components.

FOOTNOTES FOR CHAPTER FIVE

1. U.S. Department of Health, Education and Welfare, Emergency Medical Services Systems: Program Guidelines, DHEW Publication No. (HSA) 74-2009, Revised January 1975, draft.
2. Jerri N. Udelson, Utilization of Emergency Departments in the North Shore, North Shore Health Planning Council, Inc. Emergency Medical Services Project, April 1, 1974.

CHAPTER SIX

CONCLUSIONS

From our holistic analysis of regional EMS planning and implementation, we have attempted to pinpoint those elements of EMS that are critical determinants of responsiveness to policy interventions. All of the EMS components which we encountered were provided by institutions whose major concerns extended far beyond the narrow confines of their EMS elements. We concluded that this characteristic of the EMS institutional setting gave rise to many of the complexities that were encountered in the EMS Project's attempts to translate the EMSS Act to the regional level because it placed EMS components in competition for resources and attention with the other concerns of the institutions in which they operated. This characteristic had four specific manifestations which we have identified as the fundamental descriptors of the institutional nature of EMS provision in determining responses to policy initiatives:

1. The institutions which contain EMS components possess self-serving notions of the quality of the services provided by these components. (Self-serving Attitudes)
2. The cost of providing these EMS components are absorbed into the overall financial structure of the setting in which they are provided. (Hidden Cost)
3. The EMS components serve functions within their institutional settings which are more closely related to the goals of the institution than to the requirements of EMS provision. (Externalities)
4. Because of the secondary role of EMS components in

shaping policy in their institutional settings, the institutions which provide different EMS functions exhibit divergent values and policy directions with respect to the provision of EMS. (Divergent Values)

These descriptors of EMS provision served as the main determinants of the failure of the EMS Project to implement a regional EMS system in Greater Lynn. When we examined the major elements of the EMSS Act policy, these descriptors led us to our major conclusion -- the institutional nature of EMS provision is in fundamental opposition to the concept of hospital-centered regional EMS systems. Moreover, we conclude that this situation indicates two alternative policy directions -- the pursuit of alternative institutional arrangements of EMS that are more receptive to regionalization or an exploration of more refined measures within the present institutional structure to achieve the quality and efficiency goals of regionalization.

Although our conclusions appear to run counter to the present federal commitment to "regional EMS systems," we feel that our case study has revealed some of the generic institutional conflicts of regionalized EMS systems. A further analysis of these conflicts, in the context of the voluntary nature of the EMSS Act's incentive structure, reinforces our conclusion that further strategies must be explored in the two policy options described above. To substantiate our conclusions, we examined the goals of regionalized EMS in terms of our policy response descriptors, in order to explore the nature of alternative regional structures and identify means of making the present local EMS structure receptive to the policy implications of the federal concern for quality and efficiency.

The two steps necessary to achieve the goal of technological upgrading in EMS encounters problems with the self-serving notions of the quality of service in EMS institutions. First, the perception of need

for upgrading must be generated, which requires an awareness of deficiencies in the present capabilities of the service. Second, resources must exist and be allocated to achieve that upgrading. However, EMS institutions have self-serving attitudes about the quality of EMS that they provide, and little awareness of this quality deficiency. As a result, this situation, coupled with the fact that individual providers have insufficient resources to devote to technology for advanced EMS, mitigates against the achievement of the goals of technological upgrading.

The attempts to create linkages among EMS components confront many aspects of the divergent values of EMS institutions, because these linkages require that each component recognize its part in a coordinated EMS system. In order to coordinate EMS components, it is also necessary that the interfaces of the components be defined in the context of the EMS system, rather than the context of the institutions who provide the service. This linking process reveals problems with the fundamental nature of EMS because, in general, the EMS components do not see themselves as part of a larger coordinated system. Several aspects of the different value structure that governs EMS institutions are indicated in the fact that EMS is embedded in other institutions who view EMS values as subservient to the values of their institutions and the fact that EMS exists in both the public and private sectors and is provided by health and non-health institutions.

Finally, the federal goal of hospital-centered EMS systems requires that the hospitals join together into a system where care capabilities are specialized for each hospital. In order to make the specialized care capabilities effective in providing appropriate care to patients, the hospitals need the support of the prehospital services which also

means that they need to integrate the prehospital services with the hospital services. This concept of hospital-centered EMS systems encounters implementation problems because hospitals do not relate on the regional level due to the externalities that each hospital gains from its EMS services. In addition, the integration of prehospital and hospital services is quite difficult to accomplish due to the divergent values among the EMS components.

The comparison between the values of the hospital and prehospital components yielded the greatest divergence in our case and resulted in the most open and obvious conflicts that we observed. There are three important aspects of the conflicts that are caused by this divergence. First, because the prehospital components were provided in a public sector institutional setting, they were placed in competition with other public sector services for resources. Resolution of this public sector competition hinged on public sector concerns that did not address the medical nature of EMS. In contrast, the private sector hospital component was placed in competition only with other aspects of the health system. As a result, the public sector setting of prehospital EMS subjected policy issues to the vagaries of the political process and added an extra measure of conflict (in this case, political) to the decision-making process. As our case clearly indicates, this conflict removed policy questions from quality-related issues. Finally, the absence of mechanisms for regional cost allocation in the public sector served as an important inhibitor to the regionalization of public services. A further comparison of values in the prehospital component yields the observation that prehospital components are also in substantial conflict with the quality and efficiency concerns of the EMSS Act. This leads to our second major conclusion -- EMS should be totally provided within the

health care system.

However, placing EMS entirely in the health care system also generates problems when the service is provided at the regional level. In our case, we found that, although the values of hospital people were more closely related to quality and efficiency, the externalities generated by hospital emergency services created profound difficulties in the process of setting policy for interhospital cooperation. These difficulties were exacerbated by the absence of a mechanism at the regional level to generate and execute policies designed to facilitate such cooperation. It is our conclusion that a strong regional policy mechanism is necessary to resolve the conflicts among hospitals that these externalities create.

In our case, we found that the tendency of EMS costs to remain hidden in the institutional costs of the service providers was a substantial roadblock to the creation of a regional system, especially in the prehospital component. The increased economic efficiency could not be demonstrated, a priori, to the present EMS decisionmakers. Moreover, the change to a regional service was necessarily abrupt, requiring the simultaneous voluntary termination of existing service relationships as a prerequisite to the regional service. From these observations we conclude that a voluntary change from local to regional services can only be accomplished by subsidizing the concurrent establishment and operation of the new regional service. This approach places local services in competition with the new service on the regional level, which would simultaneously establish the service and demonstrate its comparative advantages, both in terms of efficiency and quality, over the present services.

The final problematic aspect that we have identified in the nature of existing EMS institutions is their tendency to adopt self-serving definitions of the quality of services which they provide. In all aspects

of the system, we found that these internally generated definitions of quality were employed to justify resource allocations that, at best, met patient needs in a minimal and inefficient fashion. This aspect of EMS again indicates the need for developing a perspective of quality that extends beyond the limits of single institutions. It adds another component to the functions of the regional EMS mechanism that has been indicated above. The mechanism must have the authority (generated consensually or otherwise) to make resource allocations that demonstrate and contribute to the quality and efficiency of EMS provision, based on assessments that aren't presently made at the local level.

We have explored what changes need to be made in the institutional nature of EMS to make it receptive to the concept of hospital-centered regionalization. In our conclusions, we also posited the policy direction which would explore more refined measures within the present institutional structure to achieve the same goals as regionalization. Essentially, in following this alternative policy direction, we are trying to assess the potential of the relationships in the present EMS institutional structure to pursue the goals of quality and efficiency without having to confront the problems of regionalization explicitly. Our case study indicates that this policy option presents two ways to guide the behavior of the present EMS institutional structure -- a reliance on consensual agreement among the EMS providers and decisionmakers, or the use of legislation to mandate the changes that are necessary to achieve the quality and efficiency goals.

However, our case also revealed one fundamental characteristic of trying to implement change in EMS -- decisions in EMS are strongly influenced by externalities that are generated within the institutions that provide EMS. This is further complicated in the local EMS structure by

the fact that these institutions are in many different service systems where the decision processes do not share common decisionmaking criteria. An unavoidable implication of this characteristic is that policy must be directed by forces external to the local EMS structure. This would indicate that legislation in each component is necessary to gain conformance in pursuing quality and efficiency goals among the institutional providers of EMS.

Another option is to exploit the relationships between and within the interest groups in the EMS structure to alter behavior toward the desired goals of EMS. Our case revealed several relationships which included advocates for the goals of quality and efficiency. In particular, the emergency and specialist physicians served to generate enough awareness and concern in the other interest groups in the planning process that implementation efforts ensued from the regional plans. The emergency physicians group also served to advocate change within the hospitals, and made use of their perspectives on the staff of two hospitals to support their efforts. We found the role of emergency physician specialists had an exciting potential for the provision of emergency hospital care because it gave the physicians a comparative perspective on the care capabilities of the hospitals that contributed to the decrease of the present self-serving attitudes about the quality of care provided in the EMS system. We believe that encouraging the practice of these regional emergency physician groups would be a promising strategy for creating advocates to motivate change in the hospital and prehospital components of EMS.

We have thus outlined two approaches to incorporating the values of quality and efficiency into the provision of EMS. Each of these approaches follows a particular pattern of intervention in the present system. We have found that pursuing quality and efficiency through regionalization

requires that present EMS decision processes be replaced by a regional mechanism for allocating resources. We have also outlined several approaches to changing the values that control the present decision processes. The development of these approaches reflects our conclusion that a new perspective must be added to EMS decision processes that allows the comparative assessment of the roles of individual elements in the total system of service provision.

There are two important sets of hypotheses that we have generated through our holistic exploration of regional EMS planning and implementation. One set of hypotheses addresses the concept of regionalization of EMS and its overriding implications for the entire health care system. In our research we have found inextricable ties that relate EMS to the provision of many other aspects of health care provision, in particular those services based in the hospital component. It is clear that a substantial impact on EMS resource allocation is closely tied to and faces many of the same problems of the reorganization of the health care system. From these considerations we concluded that the potential for regionalized EMS and reorganized health care services relies upon the creation of a regional institutional base in the health care system that would facilitate the allocation of resources to meet the needs of patients in the system.

Finally, the processes that we have explored for regionalizing EMS encompasses the problems encountered in creating a service system from components with diverse institutional bases as well as implementing a regional scale of service. We found the problems involved in achieving these two policies require remarkably similar intervention strategies. Both policies will fail unless narrow institutional interests are made to confront the role of their services in the context of the entire

service system. We have witnessed, in our case study, great reluctance on the part of EMS institutions to confront their roles as cooperative providers in an EMS system, and the strategies that we have explored to overcome these hesitations are addressed equally well to the problems of regionalization and of creation of new service systems. In both of these areas, the need for further research is evident in exploring the problems of mixing public and private provision of services within a service system, developing the particulars of regional mechanisms, examining the implications of establishing competing service systems, and, especially, defining the role of governmental and regulatory in insuring the proper allocation of resources to meet health care needs.

APPENDIX A:

MAP OF REGION IV



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