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SPONSORED PROJECT INITIATION

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Date: July 8, 1977

Project Title: MEMS (Community Outreach Program)

Project No: E-22-521

Project Director: Dr. J. A. Myrick

Sponsor: Metropolitan Emergency Medical Services, Inc.

Agreement Period: From 7/1/77 Until Open

Type Agreement: Agreement dated 7/5/77

Amount: \$3,000

Reports Required: Final Report

Sponsor Contact Person (s):

Technical Matters

Contractual Matters

(thru OCA)

Mr. Steve Chandler  
Executive Director  
MEMS.  
3340 Peachtree Road, N. E.  
Atlanta, Georgia 30326

Defense Priority Rating: N/A

Assigned to: School of Health Systems (School/Laboratory)

COPIES TO:

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Project File (OCA)  
Project Code (GTRI)  
Other \_\_\_\_\_

GEORGIA INSTITUTE OF TECHNOLOGY  
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SPONSORED PROJECT TERMINATION

no action  
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OHL

Date: 11/2/77

Project Title: MEMS Community Outreach Program  
Project No: E-22-521  
Project Director: H. E. Smalley  
Sponsor: METROPOLITAN EMERGENCY MEDICAL SERVICES, INC.

Effective Termination Date: 9/30/77

Clearance of Accounting Charges: 9/30/77

Grant/Contract Closeout Actions Remaining: NONE

- Final Invoice and Closing Documents
- Final Fiscal Report
- Final Report of Inventions
- Govt. Property Inventory & Related Certificate
- Classified Material Certificate
- Other \_\_\_\_\_

Assigned to: Health Systems (School/Laboratory)

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- Other \_\_\_\_\_

EVALUATION OF YEAR 02 ACTIVITIES OF MEMS

Independent Review and Evaluation of  
Year 02 Program Implementation

Under Section 1203  
of the  
EMSS Act of 1973

Prepared for  
Metropolitan Emergency Medical Services (MEMS), Inc.

by the  
Health Systems Research Center  
Georgia Institute of Technology

September 1977

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Prepared by  
Clifford S. Goodman, MSHS

Health Systems Research Center  
Georgia Institute of Technology  
Atlanta, Georgia

September 1977

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## INTRODUCTION

This report, prepared by the Health Systems Research Center of the Georgia Institute of Technology, presents an independent review and evaluation of Year 02 (1 July 1976 - 30 June 1977) program activities of Metropolitan Emergency Medical Services, Inc. (MEMS). Such an evaluation is mandated by law for those EMS systems receiving support under the Emergency Medical Services Systems Act of 1973.

Consistent with the HEW Program Guidelines for the Act, this report provides a descriptive evaluation of the 15 system components enumerated in the Act under Section 1206. The components are examined with respect to the following:

- System resources, capabilities, and performance prior to Year 02.
- Interventions in the system occurring during Year 02.
- System resources, capabilities, and performance at the end of Year 02.
- Recommendations for future activities.

In particular, the report compares Year 02 project accomplishments with specific project objectives as they are stated in the MEMS Continuation Project grant application of March 1976.

Information for the report was obtained through site visits, interviews with MEMS and other personnel, and through the examination of project records, reports and grant applications. Although not limited by MEMS personnel, who were most cooperative in providing available information, the scope of the report was necessarily limited by the financial support made available for the evaluation itself, and by the scarcity of useful data required for a more thorough assessment of the progress and impact of MEMS.

## EMSS COMPONENTS

In this section is a descriptive evaluation of MEMS Year 02 activities as they relate to each of the 15 system components enumerated in the EMSS Act of 1973. For each component, system resources, capabilities, and performance prior to Year 02 are discussed under "Pre-Year 02." Year 02 interventions, system resources, capabilities, performance, and recommendations are discussed under "End-Year 02."

Preceding the discussion of each component is the appropriate excerpt from the Act. Following the discussion of each component is a parallel listing of specific project objectives as they are stated in the MEMS Continuation Project grant application of March 1976, and actual Year 02 accomplishments.

## Manpower

An adequate number of health professionals, allied health professionals, and other health personnel, with appropriate training and experience.\*

### Pre-Year 02

EMS manpower status and needs were well documented. The level of manpower resources indicated that the Atlanta area had access to adequate manpower to achieve an effective level of emergency medical services. All of the approximately 350 employed ambulance attendants had successfully completed, as a minimum, the 125-hour emergency medical technician ambulance course offered by the State in compliance with the Department of Transportation's EMT standards. There were approximately an additional 770 firemen and policemen in the Atlanta area who had completed the State's EMT-ambulance course but were not employed by area ambulance or fire department EMS providers.

Although disaster drills had been held on a local basis, no system-wide disaster drill had been held, and the capability of mobilizing and assembling adequate manpower to meet the medical requirements of a disaster had not been demonstrated.

### End-Year 02

MEMS has not been continuously aware of the system manpower available to provide routine manpower services. In preparation of the MEMS Continuation Project grant proposal of March 1976, MEMS surveyed system manpower, but has undertaken no efforts since then to monitor system manpower. There is no computerized information management system as

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\*At the beginning of the discussion of each EMS component is the appropriate descriptive excerpt from the EMSS Act of 1973.

such, and MEMS did not collect weekly personnel logs from ambulance providers. Because there were no procedures for continuously monitoring manpower levels, manpower information reports were not supplied to providers. No objective determination of areas of under- or over-utilized manpower could be made, and no action to address manpower needs was taken.

The MEMS orientation toward manpower has been that there is no manpower shortage in the Atlanta area, and that no perceived shortage of service could be traced to a lack of manpower. MEMS has operated under the assumption that, because State law requires that every ambulance have two EMTs, any ambulance dispatched by a provider contacted by MEMS will be properly manned. Thus, each provider in the MEMS system has been expected to monitor its own manpower needs. It should be more clearly determined exactly what agency is to monitor ambulance staffing, in what manner this is to be accomplished, and how MEMS is to be involved.

MEMS has not demonstrated that it is capable of mobilizing or assembling manpower to meet the medical requirements of a disaster. Although the major area hospital and civil defense disaster plans were obtained and reviewed, available staff reserves were not identified or verified. Manpower reserve data were not incorporated as such into the disaster plan. The area disaster plan accounts for reserve manpower on an as-needed basis; i.e., in the event of a disaster, area components will be asked to identify reserve manpower if normal levels of manpower are insufficient. Alerting procedures to inform on-duty ambulances, hospital emergency departments, public safety, and civil defense agencies have been developed, but these procedures do not include specific procedures for mobilizing reserve manpower.

Because MEMS did not conduct a disaster drill to test manpower mobilization, there has been no indication of how MEMS and system components would react in the event of a disaster requiring manpower beyond normal, on-duty levels. MEMS did participate in the two "Big Bird" disaster drills at Hartsfield International Airport (the second was in July 1977) and the Paulding County airplane disaster (November 1976). As a result of the two mock disasters and the airplane disaster, MEMS did participate in, comment, and review system mobilizations.

To be "continuously" (and truly) aware of system manpower may be an overly ambitious undertaking for any EMS coordinator. Given the relative stability of a large EMS system's manpower capabilities, it is unlikely that significant corrective intervention of system manpower can be accomplished within very short periods of time. Therefore, it may not be particularly worthwhile to make large investments to continuously monitor manpower levels. MEMS did a relatively thorough job of identifying system manpower levels in preparation of the MEMS Continuation Project grant proposal of March 1976; it may be sufficient and quite worthwhile to repeat this same procedure on a yearly basis rather than attempting to update system manpower levels on a weekly basis. Although MEMS does not have the authority to alter manpower levels or distribution, a thorough annual survey of available manpower would be valuable for identifying manpower requirements for potential disasters as well as "routine" emergency services. Some of the evaluative measures which would be most helpful in regard to system manpower might include:

1. Number and proportion of fire, police, and ambulance personnel with specific levels of EMS (e.g., CPR, EMT I, EMT II) training.

2. Number and proportion of emergency department RNs and physicians with specific levels of EMS training and/or qualifications.
3. Number of full-time equivalents of various categories of emergency department personnel per 1,000 emergency department visits for each hospital.
4. Number and proportion of EMS system directors, coordinators, and related personnel who have participated in specific EMS conferences or training courses.

1.0.0. MANPOWER

Year 02 Objectives	Year 02 Accomplishments
<p>1.1.0. To be continuously aware of the system manpower available to provide routine emergency services.</p> <p>1.1.1. Review data collected through computerized information system, including standardized weekly personnel log for ambulance providers.</p> <p>1.1.2. Provide information reports to each provider for their management uses.</p> <p>1.1.3. Determine any areas of under- or over-utilized EMS manpower based upon above data.</p> <p>1.1.4. Work with area providers to assist in correcting manpower needs as determined.</p>	<p>1.1.0. MEMS has not been continuously aware of the system manpower available to provide routine emergency services.</p> <p>1.1.1. The "computerized information management system" contains no manpower data. Standardized weekly personnel logs for ambulance providers were not collected.</p> <p>1.1.2. No information reports to providers for their management use were provided (data unavailable).</p> <p>1.1.3. No determination of areas of under- or over-utilized EMS manpower was made (data unavailable).</p> <p>1.1.4. No work with area providers to assist in correcting manpower needs was undertaken (data unavailable).</p>
<p>1.2.0. To be capable of assembling adequate manpower to meet the medical requirements of a disaster.</p> <p>1.2.1. Obtain disaster plans from system hospitals.</p> <p>1.2.2. Review plans to identify staff reserves available.</p> <p>1.2.3. Meet with individual hospitals as necessary to verify staff reserves.</p>	<p>1.2.0. MEMS has not demonstrated that it is capable of assembling manpower to meet the medical requirements of a disaster.</p> <p>1.2.1. Disaster plans have been obtained from some, but not all, system hospitals, and some local civil defense agencies.</p> <p>1.2.2. Disaster plans were reviewed.</p> <p>1.2.3. Meeting was held with Grady Hospital; however, staff reserves were not discussed.</p>

Year 02 Objectives	Year 02 Accomplishments
1.2.4. Request ambulance components to describe manpower reserves.	1.2.4. Ambulance components provided information on manpower reserves prior to Year 02, but have not been requested to update information since that time.
1.2.5. Incorporate manpower reserve data into disaster plan.	1.2.5. No manpower reserve data have been incorporated into disaster plan (data unavailable).
1.2.6. Develop alerting procedure to inform components of disaster status.	1.2.6. An alerting procedure to inform components of disaster status has been developed.
1.2.7. Develop procedures for components to report readiness of reserve manpower.	1.2.7. No procedures for components to report readiness of reserve manpower have been developed (no data on reserve manpower).
1.2.8. Review procedures with components, and finalize.	1.2.8. No procedures.
1.2.9. Disseminate procedures to components' EMS procedure manuals.	1.2.9. No procedures.
1.2.10. Test ability of components to assemble manpower reserves in a disaster drill.	1.2.10. No disaster drill undertaken.
1.2.11. Review manpower problems observed in drill.	1.2.11. No review of disaster drill was undertaken (no disaster drill).

## Training

The provision for appropriate training (including clinical training) and continuing education programs which (1) are coordinated with other programs in the system's service area which provide similar training and education and (2) 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 areas.

### Pre-Year 02

There was no apparent shortage of trained EMS manpower or training facilities. The need for coordinated training among training schools was not great, since these resources had apparently avoided duplication among themselves.

No clearinghouse existed in the region for interested individuals to learn what EMS training courses and programs were available.

No organization was actively encouraging the recruitment of appropriate military and public safety personnel in EMS training programs.

### End-Year 02

MEMS has not acted as a clearinghouse for EMS training; it has acted only as an informal referral source. MEMS refers inquiries regarding EMS training to the Emergency Health Section of the State Department of Human Resources or to specific training schools, depending upon the nature of the inquiry or the person's county of residence. MEMS has not formally disseminated information regarding training program curricula or course schedules, although it does receive information periodically about area training programs. MEMS has not acted to coordinate the scheduling of the EMS training programs in the area. MEMS has assisted in the development and provision of

training for the new Georgia State University Associate Degree Program in Emergency Medical Services.

MEMS has not actively emphasized the recruitment of EMS personnel. As an informal referral service, MEMS refers inquiries regarding EMS employment to various providers of care, such as the major ambulance providers. MEMS has made no formal provisions for maintaining awareness of EMS job openings for persons desirous of employment. Thus, MEMS is unable to disseminate such information on a regular basis.

Although EMS training schools in the MEMS region do not apparently duplicate their efforts, and persons seeking EMS training or employment have little apparent difficulty in locating EMS training schools or employers, MEMS might pursue monitoring system training in a more active fashion in order to better evaluate system capabilities and needs. This would, in conjunction with monitoring manpower levels, help establish whether or not there exists a need for better training program coordination or recruitment efforts. Some of the evaluative measures which would be most helpful in regard to system training might include:

1. Percentage of persons enrolled in and graduating during the previous year from various EMS training courses (e.g., CPR, EMT I, EMT II, EMT refresher).
2. Percentage of nurses and physicians enrolled in and graduating during the previous year from emergency nurse training courses and trauma care physician training courses, respectively.
3. Number of all types of EMS training courses offered during previous year.
4. Graduates of specific EMS courses as a percentage of all corresponding EMS personnel (e.g., graduates of EMT I courses as a percentage of all EMTs).
5. Percentage of EMS course graduates who are Armed Forces veterans.

2.0.0. TRAINING

Year 02 Objectives	Year 02 Accomplishments
<p>2.1.0. To coordinate training programs provided through agreements to MEMS, with other training programs conducted in the service area.</p> <p>2.1.1. Survey training schools in the service area to identify programs with compatible curricula and training schedules (duration of programs, beginning dates).</p> <p>2.1.2. Establish mechanism for receiving announcement of course offerings.</p> <p>2.1.3. Disseminate information regarding available training to system components.</p> <p>2.1.4. Work with training schools in area to schedule training programs to minimize duplication with other schools and maximize availability to system component employees, when possible.</p>	<p>2.1.0. MEMS has not coordinated training programs in the service area; it has acted in a referral capacity only.</p> <p>2.1.1. No formal survey of training schools in the service area was made to identify programs with compatible curricula and training schedules.</p> <p>2.1.2. MEMS receives announcements of course offerings from the State and other sources as they choose to inform MEMS.</p> <p>2.1.3. Information regarding available training was informally disseminated upon request; no formal or periodic dissemination of such information was made.</p> <p>2.1.4. No work with training schools in the area to schedule training programs was undertaken.</p>
<p>2.2.0. To emphasize recruitment of appropriate military and public safety personnel.</p> <p>2.2.1. Establish routine communication procedures with system components to receive notification of vacant EMS positions and to advise components of persons requesting EMS employment.</p>	<p>2.2.0. MEMS did not actively emphasize the recruitment of appropriate military public safety personnel; it acted only in an ad hoc referral capacity.</p> <p>2.2.1. No routine communication procedures were established with system components regarding EMS employment.</p>

Year 02 Objectives	Year 02 Accomplishments
<p>2.2.2. Establish communication with MEDIHC to receive notification of persons desirous of employment in EMS and to notify MEDIHC of vacant positions in MEMS system components.</p>	<p>2.2.2. No formal communication was established with MEDIHC regarding EMS employment.</p>
<p>2.2.3. Establish communication with area public safety personnel administrators to receive notification of persons desirous of employment in EMS and to notify these agencies of vacant positions in MEMS system components. Disseminate information periodically.</p>	<p>2.2.3. No formal communication was established with area public safety personnel administrators regarding EMS employment; information was not periodically disseminated regarding EMS employment. Again, MEMS personnel responded to telephoned or written inquiries to the best of their abilities on an ad hoc basis.</p>

## Communications

The EMS system shall 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 (1) utilizes emergency telephonic screening, (2) utilizes or will utilize the universal emergency telephone number 911, and (3) will have direct communication connections and interconnections with the personnel, facilities, and equipment of the system and with other appropriate emergency services systems.

### Pre-Year 02

The MEMS communications center and computer-aided dispatch system had been installed and was functional. The MEMS communications hardware and software resources and capabilities, too extensive to describe here, were documented in the MEMS Continuation Project grant application (March 1976) and other reports and publications. The portable and mobile radios for area providers had been distributed. The communications center was staffed with medical communicators. Operational and cooperative procedures with system components were still being developed; e.g., the MEMS communications manual had not yet been completed and distributed to users of MEMS communications equipment. Certain public information and education programs had just started in June 1977 to inform the public of how and when to access the regional system. The communications objective of developing a single number accessed, centrally coordinated regional ambulance dispatch system had apparently been accomplished by the end of Year 01. No major new expenses for communications were anticipated for Year 02.

There was a need to develop communication capabilities with EMS resources outside of the MEMS service area.

There was a need to initiate formal action regarding the development of 911 for emergency services in the MEMS service area.

End-Year 02

MEMS has operationalized, though not formalized, a number of communications procedures with EMS resources in areas outside of the MEMS service area. These procedures have been worked out through meetings and phone conversations. They include putting certain outlying providers on the "auto-dial" system for the purpose of contacting them for emergency calls in certain outlying areas, and arranging for phone-patches with outlying providers who enter the MEMS service area without the proper radio frequency to contact facilities in the area. Other communications procedures are worked out on a day-to-day, as-needed basis. These procedures do not appear in formalized agreements or in communications manuals.

MEMS did not receive a response from ARC in regard to its request that ARC initiate procedures to study the feasibility and implementation of 911 in the area. The Georgia General Assembly has passed legislation enabling a State-wide 911 plan for Georgia, to be administered by the State Department of Administrative Services. MEMS has strongly supported 911 and has offered to assist the State in addressing 911; however, MEMS has not yet been invited to partake in the State's 911 efforts.

In an independent effort, the DeKalb County government has planned a 911 system for ambulance and fire calls (not police calls) which is scheduled for implementation in October 1977. Because some telephone exchanges extend across county borders, it is possible, for example, that a Clayton County resident could dial 911 and be connected to a DeKalb County emergency answering center. Such calls are to be transferred to Clayton County officials. Cobb County is also examining the possibility of its own county-wide 911 system.

No other significant changes were made in system communications hardware and software resources and capabilities. Several radios changed hands, and the satellite ambulance dispatch stations experienced several site changes. The MEMS communications manual was completed during Year 02 and distributed to users of MEMS communications equipment.

Certainly, valuable experience has been gained in the use of an advanced, sophisticated, and unique system-wide communications network. This experience, once it can be adequately documented and described, may prove invaluable to other developing, region-wide communications systems, EMS or otherwise. The ability, however, of the sophisticated and expensive MEMS communications equipment to accomplish what it was purchased to accomplish, i.e., positively impact upon the quality of EMS in the seven county metropolitan Atlanta area and in outlying areas, has been severely handicapped by communications problems of another kind. MEMS communications with State and county officials, ambulance providers, and other vital components of the EMS system have been poorly planned and inadequate, especially early in MEMS development when problems being experienced now might have been alleviated.

Useful monitoring of the communications component should encompass, to the best extent possible, the EMS system, rather than just the MEMS communications center capabilities. To reliably document system communications capabilities would require a major improvement in cooperative arrangements among system components. Evaluative measures such as these would be useful for monitoring the communications component:

1. Proportion of all ambulances accessible through a common radio frequency.

2. Proportion of all hospital emergency departments accessible through a common radio frequency.
3. Proportion of all ambulance dispatches from the MEMS dispatch center and other dispatch centers.
4. Average minutes between dispatchers' receipt of ambulance request and vehicle leaving for scene.
5. Proportion of all requests for ambulance aid received through the common access number (231-2323 or 911).

3.0.0. COMMUNICATIONS

Year 02 Objectives	Year 02 Accomplishments
<p>3.1.0. To develop communication capabilities with EMS resources in appropriate areas outside of the MEMS service area.</p> <p>3.1.1. Meet with non-system disaster and routine EMS components to develop procedures for communication via the State EMS radio network.</p> <p>3.1.2. Finalize and adopt procedures.</p> <p>3.1.3. Distribute procedures to appropriate non-system components.</p>	<p>3.1.0. MEMS has developed unwritten communication capabilities with EMS resources in areas outside of the MEMS service area.</p> <p>3.1.1. Meetings and phone conversations with non-system disaster and routine EMS components have been made to develop communications procedures.</p> <p>3.1.2. Procedures such as telephone, radio, and phone-patch arrangements have been implemented, and various similar cooperative arrangements are made on a day-to-day, as-needed, basis. However, they have not been formally written or adopted.</p> <p>3.1.3. These procedures have not been formally distributed.</p>
<p>3.2.0. To request, on behalf of all public safety agencies, the Atlanta Regional Commission to determine the feasibility of and implementation strategy for establishing one police department, fire department, and other emergency telephone number to be 911.</p> <p>3.2.1. Request, by resolution from the MEMS Board, the ARC to develop a task force consisting of representatives of police and fire departments in the Atlanta region, and also representatives of MEMS, to investigate 911 and to make recommendations regarding procurement, by ARC, of consultants to perform technical evaluations; this task force shall examine</p>	<p>3.2.0. MEMS requested the ARC to look into the establishment of a 911 system in the region. ARC has not responded to the request. The Georgia General Assembly passed legislation enabling a State-wide 911 plan for Georgia.</p> <p>3.2.1. ARC did not respond to the MEMS request, and no 911 task force has been formed.</p>

Year 02 Objectives	Year 02 Accomplishments
<p>the feasibility of implementing 911 in the call free area for EMS only as a first priority.</p> <p>3.2.2. Provide appropriate representation for MEMS and provide data as appropriate.</p>	<p>3.2.2. Although MEMS has offered to assist in 911 efforts by the State, MEMS has not been asked to do so.</p>

## Transportation

This component shall include an adequate number of necessary ground, air, and water vehicles and other transportation facilities properly equipped to meet the transportation and EMS characteristics of the system area. Such vehicles and facilities must meet appropriate standards relating to location, design, performance, and equipment; and the operators and other personnel for such vehicles and facilities must meet appropriate training and experience requirements.

### Pre-Year 02

All 18 ambulance providers in the service area and their vehicles had received full State licensing, all conformed to at least minimum standards, and all had two-way radio communications. Seventeen of the 18 ambulance providers had agreed to participate in the regional system.

Forty-one UHF mobile and portable radios purchased by MEMS were installed in area ALS ambulances; three were being held to substitute when repairs were to be made. Seven VHF radios were provided by MEMS to BLS ambulances in the region. The MEMS Board of Directors had established a priority system for responding to emergency calls.

No arrangements had been made to coordinate the use of MAST helicopters in the MEMS service area.

There was a need to objectively and continually monitor transportation response capabilities in the region. Ambulance providers were not well distributed throughout the service area in all cases.

### End-Year 02

MEMS did not pursue the use of MAST helicopters during Year 02. MEMS decided that, for its generally high-density, metropolitan service area, there would be few, if any, situations where an ambulance would not prove more useful than a helicopter. MEMS felt that the use of

ground transportation would be more practical and safer to the public than using a helicopter, especially since the nearest MAST operations were located in Augusta (Ft. Gordon) and Columbus (Ft. Benning), Georgia. MEMS assumes that MAST helicopters would be available from these locations if they were needed, and that MEMS would coordinate their response in the MEMS service area. No request was made for helicopters during the year.

Although the MEMS computer is fed the relevant information and is capable of assessing the frequency and location of calls, it has not been used to do so. No computer programs have been used to access the proper data. MEMS has not yet undertaken this activity because (according to MEMS) its ability to prompt ambulance providers to modify unit location assignments is questionable, regardless of assessments of call frequency and location. MEMS has made such assessments on a subjective, "seat-of-the-pants" basis, such as in the two separate cases where three ambulance services were located within blocks of each other in Buckhead and East Point. Following Year 02, after urging by MEMS, Grady Hospital decentralized its ambulance service. However, no documentation exists which indicates this move was done as the result of MEMS urging. Moves were also made by the South Fulton and METRO ambulance companies, and although MEMS did not urge these moves, the ambulance companies may have undertaken these moves to take advantage of MEMS calls in the new locations. The fact that such moves were made infers that ambulance providers would respond to feedback regarding frequency and location of calls.

In regard to ambulances meeting appropriate standards, MEMS has operated under the assumption that any ambulance responding to a MEMS call meets all State standards. Thus, each ambulance provider

is assumed to monitor the standards of its own units. It should be more clearly determined exactly what agency is to monitor ambulance standards, in what manner this is to be accomplished, and how MEMS is to be involved. Relevant data should be monitored accordingly.

Certain valuable information regarding transportation is available in the MEMS computer and elsewhere in the system; however, it has not been accessed. MEMS has had considerable difficulty in regard to standardization of ambulance trip report forms and associated data collection. MEMS has not yet received January 1977 ambulance trip report data from the State which are necessary for the RAND Corporation to complete an evaluation of MEMS. MEMS has not had reliable response from ambulance providers regarding status, location, and dispatch and arrival (response) times. As of April 1977, MEMS was receiving ambulance response times (via radio) for only about 40 percent of MEMS-dispatched calls. As of the end of Year 02, the ambulance providers in the MEMS system were responding according to a "zone" system, wherein MEMS contacts the base station of the provider nearest a call. MEMS now receives no status, location, or other similar information. These and other conditions have obviated the opportunity to reliably evaluate the transportation component of the system, especially in terms of frequency, location, and response time of calls. Other transportation evaluation measures, such as percentage of EMS patients in the various critical care categories arriving at emergency departments by means other than ambulance, and proportion of ambulances transporting patients with myocardial infarction receiving cardiac telemetry, would be desirable. However, it is unlikely, given the existing state of the transportation component and the difficulty of obtaining relevant data, that MEMS will be able to reliably make these types of measurements in the near future.

4.0.0. TRANSPORTATION

Year 02 Objectives	Year 02 Accomplishments
4.1.0. To coordinate the use of MAST helicopters in the MEMS service area.	4.1.0. MEMS has decided not to address the issue of coordination of the use of MAST helicopters in the service area.
4.1.1. Meet with MAST program personnel to finalize arrangements for receiving helicopter service through MEMS.	4.1.1. No meeting with MAST program personnel was held.
4.1.2. Identify landing sites at area hospitals.	4.1.2. No MAST.
4.1.3. Obtain agreements from hospitals to construct landing facilities.	4.1.3. No MAST.
4.1.4. Solicit funds for construction.	4.1.4. No MAST.
4.1.5. Award contracts.	4.1.5. No MAST.
4.1.6. Develop procedures to be used by EMS components to summon helicopter.	4.1.6. No MAST.
4.1.7. Distribute procedures to components' EMS procedure manuals.	4.1.7. No MAST.
4.2.0. To continually monitor transportation response capabilities in the region.	4.2.0. MEMS has not continuously monitored the transportation response capabilities in the region.
4.2.1. Utilizing the computerized information management system, assess the frequency and location of calls for advanced and basic life support units.	4.2.1. The computerized information management system has not been utilized to assess frequency and location of calls.

Year 02 Objectives	Year 02 Accomplishments
<p>4.2.2. Determine areas of under- and over-utilized transportation resources based on above data.</p>	<p>4.2.2. Certain areas of under- and over-utilized transportation resources have been determined; however, this has been done by subjective means only, and has not been based upon hard data.</p>
<p>4.2.3. Work with appropriate ambulance providers to change location assignment of vehicles as indicated by above needs.</p>	<p>4.2.3. Changes in location of assignments of ambulance providers have occurred; however, MEMS influence in this regard has not been documented.</p>

## Facilities

The EMS system shall 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, personnel, and equipment, and which are coordinated with other health care facilities of the system.

### Pre-Year 02

MEMS was in the process of compiling a vertical categorization of area hospital critical care facilities. The latest hospital categorization completed had been a horizontal categorization developed by the EMS Task Force of the Atlanta Regional Commission in 1973. The MEMS vertical categorization instrument was a self-administered survey form designed by MEMS to be completed jointly by hospital administrators and emergency department physicians in area hospitals. The survey form covered critical capabilities for burns, poison and drug overdose, trauma, high-risk infants, cardiac care, and behavioral emergencies. MEMS had acquired necessary information on the Shepherd Spinal Cord Center at West Paces Ferry Hospital, which was the only area facility fully equipped to treat cranial and spinal injuries. West Paces Ferry had signed a transfer agreement in Year 01 enabling acceptance to the Clinic of any patient in the seven county metropolitan area with cranial or spinal injuries.

By the end of Year 01, most hospitals surveyed had completed the form and returned it to MEMS. By that time, MEMS had compiled adequate information on the capabilities of most critical care facilities in the area. This information was to be used in generating critical care plans, associated transfer agreements, and related recommendations for increasing accessibility to critical care.

There was a need to complete and periodically update the vertical categorization of area hospitals. There was also an ongoing need to monitor and evaluate patient flow within the area for the purpose of altering patient flow where appropriate.

#### End-Year 02

MEMS completed a thorough vertical categorization of all 21 hospitals in the seven county metropolitan area with 24-hour emergency departments during Year 02. The categorization was distributed to all hospital administrators, emergency department directors, and MEMS critical care committee chairmen. No update of the vertical categorization was made during Year 02, as there were no significant changes in area critical care capabilities.

MEMS did not meet the need to monitor and evaluate patient flow and distribution among area EMS facilities during Year 02. One major difficulty in collecting data for evaluating patient flow and distribution stems from MEMS inability to effectively manage the use of standardized data collection forms. MEMS reviewed, and forwarded to the RAND Corporation for evaluation, April 1976 dispatch log, emergency room log, and ambulance trip report data, and January 1977 dispatch log and emergency room log data. However, MEMS has not yet acquired the January 1977 ambulance trip report data from the State which is needed for RAND to complete the evaluation. Even if RAND did have the designated data to complete that particular evaluation, which will compare system performance before and after MEMS operation, it is doubtful that it would provide sufficient information to describe the capabilities of area EMS facilities and patient flow among them. The April and January 1977 sampling of data is, in many ways,

inappropriate for evaluating MEMS effect on the EMS system, and inappropriate for evaluating patient flow and distribution among facilities. MEMS has no provisions for following a patient's movements through the system once the patient has left the emergency department. Thus, although MEMS did a thorough job of categorizing facilities, it is not adequately documenting the ability of the facilities to meet patient needs.

In order to evaluate its performance in the categorization of facilities, MEMS should periodically update indicators such as these:

1. Percentage of area hospitals which have been horizontally categorized by onsite inspection, by self-categorization, and by indirect means.
2. Percentage of area hospitals which have been vertically categorized by onsite inspection, by self-categorization, and by indirect means.
3. Proportion of random sample of emergency department records that, in the judgement of specified qualified personnel, indicate that the patient was treated in a facility significantly lacking the clinical resources necessary for appropriate treatment.
4. Proportion of hospital facilities in compliance with Joint Commission on Accreditation of Hospitals standards.

### 5.0.0. FACILITIES

Year 02 Objectives	Year 02 Accomplishments
<p>5.1.0. To monitor and evaluate data describing patient flow patterns within the regional system for the purpose of altering patient distribution where appropriate.</p> <p>5.1.1. Review data received from standardized ER logs, dispatch logs, and ambulance report (votomatic) cards on a monthly basis.</p> <p>5.1.2. Summarize data pertinent to flow of critically ill or injured patients between facilities.</p> <p>5.1.3. Identify areas of inappropriate patient distribution of certain patient categories.</p> <p>5.1.4. Present findings with supporting data to EMS provider as appropriate.</p>	<p>5.1.0. MEMS has minimally monitored and not evaluated patient flow within the EMS system. MEMS has not documented patient distribution in the system.</p> <p>5.1.1. MEMS reviewed, and forwarded to the RAND Corporation for evaluation, April 1976 dispatch log, emergency room log, and ambulance trip report data, and January 1977 dispatch log and emergency room log data. Because MEMS has not yet acquired the January 1977 ambulance trip report data from the State, the evaluation has not been completed.</p> <p>5.1.2. No data pertinent to patient flow between facilities have been summarized.</p> <p>5.1.3. No areas of inappropriate patient distribution have been identified.</p> <p>5.1.4. No findings have been made.</p>

### Critical Care Units

The critical care component requires providing access (including appropriate transportation) to specialized critical medical care units. These units should be in the number and variety necessary to meet the demands of the service area. If there are no such units in the EMS region, then the system will provide access to units in neighboring areas if feasible in terms of time and distance.

#### Pre-Year 02

The MEMS service area had comprehensive capabilities for providing medical care for most critical patients. There was a need to establish ongoing access for critically ill or injured patients anywhere in the region to the appropriate level of each of the critical care categories. Specifically, there was a need to continue the development and review of critical care plans addressing specific patient flow patterns within the region. These plans needed to be based upon a current vertical categorization of facilities, and to be distributed to appropriate system components.

#### End Year 02

The vertical categorization of area emergency departments was completed early in Year 02. Critical care plans were completed by six of the seven MEMS critical care committees, and in August 1977 were reviewed and approved by members of the emergency physicians group. Critical care plans were completed and approved for poison control, behavioral emergencies, trauma, cardiac care, cranial and spinal cord injuries, and burns. The plan for high-risk neonates was not completed. The MEMS Board felt that high-risk neonatal care rarely interfaces with EMS in the Atlanta region; therefore, a critical care plan was not developed for that category of care.

Certain of the emergency physicians group were not present at their August 1977 meeting and have not yet seen the critical care plans. The plans have not been distributed to ambulance providers. The content of the plans does not differ significantly from traditional and informal critical care procedures that had previously been in operation.

The need for MEMS to improve its ability to access and compile data for evaluating the EMS system is especially important in regard to critical care. In order to properly monitor the EMS system's ability to provide critical care, evaluative measures such as these would be helpful:

1. Proportion of poison, alcohol, or drug abuse patients treated at poison or detoxification centers.
2. Proportion of behavioral emergency patients treated at psychiatric units or centers.
3. Proportion of severe multiple trauma victims treated at trauma units or centers.
4. Proportion of myocardial infarction patients treated at coronary care units.
5. Proportion of patients with suspected spinal cord injuries treated at spinal cord treatment centers.
6. Proportion of severe burn victims treated at burn units or centers.
7. Proportion of high-risk neonates treated at high-risk infant centers.

6.0.0. CRITICAL CARE UNITS

Year 02 Objectives	Year 02 Accomplishments
<p>6.1.0. To continually update regional critical care plans (including proposed distribution of patients) to reflect changing capabilities of area emergency departments.</p>	<p>6.1.0. Critical care plans for poison control, behavioral emergencies, trauma, cardiac care, cranial and spinal cord injuries, and burns (but not high-risk neonates) were developed during Year 02. These six critical care plans were approved by an emergency department physicians group in August 1977.</p>
<p>6.1.1. Present patient distribution data as described above to emergency department physicians group semi-annually for their review.</p>	<p>6.1.1. Limited patient distribution data were presented to emergency department physicians group in August 1977.</p>
<p>6.1.2. Request each emergency department to update its vertical categorization assessment at least semi-annually.</p>	<p>6.1.2. Each emergency department was requested to assess its vertical categorization one time prior to Year 02. The categorizations were completed and returned to MEMS on or about the beginning of Year 02.</p>
<p>6.1.3. Present updated vertical categorization assessments to emergency department physicians group for their review.</p>	<p>6.1.3. The vertical categorization assessments were presented to the emergency department physicians group for their review.</p>
<p>6.1.4. Update existing critical care plans as needed based upon above information.</p>	<p>6.1.4. Critical care plans were developed for poison control, behavioral emergencies, trauma, cardiac care, cranial and spinal cord injuries, and burns based upon the vertical categorization assessments. A plan was not developed for high-risk neonates. Critical care plans for the six categories (other than high-risk neonates) were approved by the emergency department physicians group in August 1977.</p>

Year 02 Objectives	Year 02 Accomplishments
6.1.5. Inform appropriate EMS providers of changes in existing regional critical care plans.	6.1.5. Critical care plans have not been distributed to all of the members of the emergency physicians group, and have not been distributed to ambulance and other providers.

### Public Safety Agencies

Provisions must be made for effective utilization of appropriate personnel, facilities, and equipment of each public safety agency in the area.

#### Pre-Year 02

There were approximately 3,480 policemen and sheriffs and 2,720 firemen employed by the region's 47 different police departments and 35 fire departments. The extent of EMS training among these personnel was not well documented.

Public safety agencies were represented on the MEMS Board of Directors, Advisory Council, and Communications and Ambulance Providers Committees.

A number of cooperative arrangements were being developed with public safety agencies. These included automatic dialing arrangements with the Atlanta Police Bureau, Cobb County Police Department, Fulton County Police Department, and Atlanta Fire Bureau. MEMS planned to notify appropriate police agencies of every ambulance dispatched within their area, and the police agencies planned to transfer to MEMS all ambulance requests they received. MEMS had developed a number of operational agreements with the Georgia State Patrol, including notifying appropriate local ambulance providers for emergencies reported by the State Patrol in any county in the 17 county toll-free call area. The MEMS communications center included a hear radio tuned to the area law enforcement frequency in order to enable monitoring of emergencies.

There was a need to extend appropriate medical aid capabilities within the respective area public safety agencies, including but not limited to CPR training.

End-Year 02

The ability of public safety agencies to provide medical aid in the event of a medical emergency has been extended with MEMS assistance. In regard to training public safety personnel, MEMS acts, for the most part, as a referral source and lender of CPR equipment. "Most" (an accurate count is unavailable) of the Atlanta Fire Bureau firemen received CPR training on MEMS equipment during Year 02.

The MEMS Medical Director trained about 40 firemen in the Atlanta and College Park fire departments to the level of cardiac technician for the purpose of functioning as first responders. Each of these two fire departments has a sufficiently manned and equipped ALS unit which is available to answer a MEMS call (in their service areas) in the event that an ambulance is not available.

MEMS ability to communicate with public-safety agencies has proven exceptional. MEMS has direct telephone lines to the Atlanta Police and Fire Bureaus, the Cobb County Police Department, and the Fulton County Police Department. MEMS notifies appropriate police agencies of every ambulance dispatched within their area, and the police agencies transfer to MEMS all ambulance requests they receive. MEMS worked closely with several public safety agencies during the response to the Paulding County airline crash. In the final quarter of Year 02, public safety agencies were the sources of nearly half of the approximately 6,000 MEMS dispatches. Cobb County public safety agencies were the sources of about seven percent of those dispatches. As of September 1977, Cobb County public safety agencies stopped routing emergency calls to MEMS, and contacted ambulance providers in the county directly.

Public safety agencies were represented on the MEMS Board of Directors, Advisory Council, and Communications and Ambulance Providers Committees. The Atlanta Bureau of Police Services and the Fulton County Police Department printed and distributed about 70,000 telephone stickers with the appropriate police and fire department numbers, and the MEMS number.

The extent of EMS training among public safety personnel, although significantly improved during Year 02, is still inadequately documented. Some evaluative indicators which would be helpful in monitoring the public safety component of the EMS system include:

1. Proportion of all non-EMS public safety personnel who have completed specific EMS training courses.
2. Proportion and attendance rates of MEMS Board and committee members who represent public safety agencies.
3. Proportion of public safety radios that are frequency-compatible with MEMS dispatch frequencies.

7.0.0. PUBLIC SAFETY AGENCIES

Year 02 Objectives	Year 02 Accomplishments
<p>7.1.0. To develop a system of resource mobilization to allow public safety agencies to provide emergency medical service aid and to assist those agencies in developing a medical treatment plan.</p>	<p>7.1.0. Resource mobilization procedures have been developed and operationalized on a limited basis to allow public safety agencies to provide medical service aid.</p>
<p>7.1.1. Meet with those agencies that will provide EMS medical aid to identify individual training needs.</p>	<p>7.1.1. MEMS met with public safety agencies to discuss cooperative arrangements and training needs.</p>
<p>7.1.2. Assist public safety agencies in developing training by providing liaison between agencies and area EMS training schools.</p>	<p>7.1.2. MEMS has not acted as a liaison between agencies and area EMS training schools. The major contribution of MEMS to the training of public safety personnel has been in loaning CPR training equipment to agencies on a top priority basis.</p>
<p>7.1.3. Develop, in conjunction with the agencies' communication departments, procedures for initiating a response of medical aid, jointly with ambulance response.</p>	<p>7.1.3. MEMS has developed procedures with the Atlanta Fire Bureau and the College Park Fire Department for initiating a response of medical aid; in the event that an ambulance is unavailable, MEMS may request that an ALS unit from one of these fire departments answer a call (if it is in their service areas).</p>
<p>7.1.4. Finalize procedures and obtain endorsements from public safety agencies.</p>	<p>7.1.4. These procedures have been reviewed and approved by the public safety agencies and MEMS.</p>
<p>7.1.5. Incorporate procedures into MEMS communication center operating procedures.</p>	<p>7.1.5. These procedures have been incorporated into MEMS communication center operating procedures.</p>

Year 02 Objectives	Year 02 Accomplishments
7.1.6. Develop procedures and policy for identifying emergencies that require an EMS response from agencies.	7.1.6. Procedures and policies for identifying emergencies that require EMS response from agencies have been developed.
7.1.7. Train MEMS communicators to notify appropriate public safety agencies for EMS responses.	7.1.7. MEMS communicators have been trained to notify public safety agencies for appropriate EMS response, and to process all other communications between public safety agencies and MEMS.

### Consumer Participation

The EMS system must make provisions in its management that persons residing in the area and having no professional training or financial interest in the provision of health care may participate in policy making for the system.

#### Pre-Year 02

Fifteen of the 80 members of the MEMS Advisory Council were listed as consumer representatives. Consumers were represented on the Steering Committee, and the Communications, Constitution and Bylaws, Information Management, and Public Information and Education subcommittees.

#### End-Year 02

Consumer representation on MEMS committees and subcommittees remained virtually unchanged during Year 02. No new committees were formed. Attendance and participation of committee and subcommittee members of all categories, including consumer representatives, was poor. This may have been a reflection of the threatened state of MEMS existence throughout Year 02. However, this lack of constructive input from all facets of the EMS community must certainly have contributed to MEMS threatened existence. The extent of consumer participation in MEMS policy making would be easy to monitor; however, this information has not been made readily available. Simple evaluative indicators such as these would provide minimum documentation regarding consumer participation:

1. Number and proportion of MEMS Board, Advisory Council, and respective subcommittee members who are consumers.
2. Attendance rate of consumer members on MEMS Board, Advisory Council, and respective subcommittees.

8.0.0. CONSUMER PARTICIPATION

Year 02 Objectives	Year 02 Accomplishments
<p>8.1.0. To maintain adequate consumer representation on MEMS Advisory Council.</p> <p>8.1.1. Annually, as provided in Advisory Council Bylaws, choose consumers to serve on the Council.</p>	<p>8.1.0. The level of consumer representation on the MEMS Advisory Council has remained virtually unchanged during Year 02. However, attendance at meetings by all categories of Advisory Council members, including consumer representatives, has generally been poor.</p> <p>8.1.1. As of the last update of the Advisory Council member list in December 1976, consumer representation has remained virtually unchanged.</p>
<p>8.2.0. To maintain adequate consumer representation on MEMS Advisory Council subcommittees.</p> <p>8.2.1. Appoint additional committees, with adequate consumer representatives, to address program components as appropriate.</p> <p>8.2.2. Maintain present subcommittees for ongoing review and program direction.</p>	<p>8.2.0. The level of consumer representation on MEMS Advisory Council subcommittees has remained virtually unchanged during Year 02. Consumer representatives remained on the Steering Committee, and the Communications, Constitution and Bylaws, Information Management, and Public Information and Education subcommittees. However, participation in subcommittee activities by all categories of subcommittee members, including consumer representatives, has generally been poor.</p> <p>8.2.1. No additional committees were appointed during Year 02; however, the Advanced EMT Training subcommittee was renamed "Pre-Hospital Coronary Care" subcommittee.</p> <p>8.2.2. Existing subcommittees were maintained.</p>

### Accessibility to Care

The EMS system must provide necessary emergency services to all patients without prior inquiry as to the ability of the patient to pay.

#### Pre-Year 02

No emergency department in the area refused or delayed treatment for severely ill or injured patients. Most patients were questioned regarding medico-legal data in conjunction with insurance or other fiscal data. Such patients were usually not emergencies according to medical definition.

There was a need to address financial and residential screening prior to treatment of patients requiring critical care. Certain regional critical care units operated to serve patients who resided in a defined area, and may have refused to treat patients residing outside a particular political jurisdiction. The major hospital in the area, Grady Hospital, generally adhered to the policy of not accepting patients from outside Fulton or DeKalb Counties unless a Grady physician made an exception, or if a patient were severely ill or injured. Like the Shepherd Spinal Cord Clinic, the Grady Burn Unit may have been less than fully accessible to area burn patients. A transfer agreement signed by West Paces Ferry Hospital in Year 01 enabled treatment of patients at the Shepherd Spinal Cord Clinic who reside in the seven county area.

Critical care plans were not yet completed which would propose specific recommendations by critical care category to enable treatment and appropriate referral of area patients without financial screening.

The MEMS Board had established the policy that ambulance

response to emergency patients occur without financial interrogation, and this policy was "clearly stated" and "understood" by area ambulance providers.

#### End-Year 02

MEMS made no documented impact upon financial or residential screening procedures during Year 02. In August 1977, twelve area hospitals signed new transfer agreements; however, Grady Hospital, which would be the receiving hospital in many such transfers, has not yet signed a transfer agreement.

Although the MEMS Board had established the policy that ambulance response to emergency patients occur without financial interrogation, and this policy was "clearly stated" and "understood" by area ambulance providers, MEMS experienced a five to seven percent refusal rate by ambulance providers throughout most of Year 02. A significant proportion of this refusal rate may be attributed to the reluctance of private ambulance providers to pick up patients in certain "indigent" neighborhoods. Virtually all of the refusals occurred in Fulton and Cobb Counties. In Fulton County, the Grady ambulance service was able to back up on most refusals. Cobb County has been the only metropolitan area county in which ambulance providers were not receiving government subsidies. For that reason, accessibility to emergency care has been compromised in Cobb County. A series of meetings in August and September 1977 have been held to discuss alternatives for the provision of subsidies to private ambulance providers by Cobb County. One possible outcome is that Cobb County will provide \$15 for every police-dispatched ambulance call, and \$25 for every "indigent" call answered by private ambulance providers in the county.

A stricter policy calling for refusal to treat certain patients who had not paid previous bills was enacted by Grady Hospital during Year 02. The extent to which this policy has been implemented has not been consistent. However, even if the policy were not implemented at all, the adverse publicity surrounding the policy would detract from accessibility to emergency department services.

Some evaluative indicators which may be helpful in documenting the accessibility to care in the EMS system include:

1. Proportion of hospital emergency departments displaying a poster indicating that emergency care will be given without regard for ability to pay.
2. Proportion of service area population within a ten minute travel time of an emergency department by ground transportation.
3. Proportion of all ambulances routinely inquiring as to ability to pay prior to rendering service.

9.0.0. ACCESSIBILITY TO CARE

Year 02 Objectives	Year 02 Accomplishments
<p>9.1.0. To provide policy and operational procedures to enable persons seeking emergency medical treatment at regional critical care units to receive treatment without prior financial screening.</p> <p>9.1.1. Complete development of regional critical care plans for specialized injuries and illnesses (burns, poisons, trauma, psychiatric, neonatal and cardiac emergencies, and drug/alcohol overdoses) through committees of area ER physicians.</p> <p>9.1.2. Assess impact on regional critical care plans of policies requiring financial screening prior to treatment.</p> <p>9.1.3. Recommend to MEMS Board of Directors and area hospital authorities procedures to enable treatment in region without prior financial screening, including equitable governmental agreements as appropriate.</p> <p>9.1.4. MEMS Board worked with MEMS Ad Hoc County Commissioners Council to develop recommendations to local authorities enabling care without financial screening within the region, including reimbursement procedures if necessary.</p>	<p>9.1.0. MEMS has not provided policy and operational procedures to better enable persons seeking medical treatment at regional critical care units to receive treatment without prior financial screening.</p> <p>9.1.1. During Year 02, MEMS completed development of critical care plans. In August 1977, the committee of ER physicians reviewed and approved regional critical care plans for specialized injuries and illnesses (although not for high-risk neonates).</p> <p>9.1.2. The impact of area policies requiring financial screening prior to treatment on critical care has been assessed.</p> <p>9.1.3. During Year 02, MEMS made no specific recommendations regarding procedures to enable treatment without prior financial screening. In August and September 1977, meetings were held with Cobb County officials to discuss financial screening by ambulance providers in that county.</p> <p>9.1.4. No MEMS Ad Hoc County Commissioners Council exists. No formal recommendations to local authorities regarding financial screening have been made.</p>

Year 02 Objectives	Year 02 Accomplishments
9.1.5. Work with local authorities to assist in implementing procedures.	9.1.5. No procedures have been implemented.

## Transfer of Patients

The EMS system shall provide for the transfer of patients to facilities and programs which offer such follow-up care and rehabilitation as is necessary to effect the maximum recovery of the patient.

### Pre-Year 02

A transfer agreement developed by MEMS was signed in Year 01 by the West Paces Ferry Hospital of Fulton County which enabled its Shepherd Spinal Cord Clinic to treat any patient from the seven county area for cranial and spinal injuries. No other written transfer agreements were known to be operational in the area EMS system. The major hospital in the area, Grady Hospital, generally adhered to the policy of not accepting patients from outside Fulton or DeKalb Counties unless a Grady physician made an exception, or if a patient was severely ill or injured. Like the Shepherd Spinal Cord Clinic, the Grady Burn Unit was a unique specialty care facility in the area. Because there was no appropriate transfer agreement, the Grady Burn Unit may have been less than fully accessible to area burn patients. There was a system-wide need to complete transfer agreements, especially for specialty care facilities, in conjunction with arrangements to provide emergency services to critically ill or injured patients without financial screening.

### End-Year 02

MEMS concluded no new transfer agreements during Year 02. Twelve hospitals signed new transfer agreements developed by MEMS in August 1977.

These hospitals are:

Atlanta West	Kennestone	Piedmont	Smyrna
Brawner	Northside	Ridgeview	South Fulton
Crawford W. Long	Physicians and Surgeons	Rockdale County	Southwest Community

The transfer agreements signed by the above twelve hospitals do not represent new avenues of patient transfer as such; the written transfer agreements cover procedures that have already been in operation. Thus, de facto "implementation" of the new agreements existed prior to their being signed in August 1977. Although Grady Hospital has not yet signed an agreement, it is reviewing those which have been signed to assess how Grady will be affected by agreeing to receive patients transferred by other hospitals.

The need will remain to develop new and to update existing transfer agreements according to the evolving status of area critical care facilities in order to maximize area patient accessibility to emergency care. Evaluative indicators which would be useful to monitor in regard to the transfer of patients component include number and proportion of all inter-hospital transfers preceded by physician-to-physician agreement and accompanied by medical records.

10.0.0. TRANSFER OF PATIENTS

Year 02 Objectives	Year 02 Accomplishments
10.1.0. To complete the development of written transfer agreements begun during period one of the project.	10.1.0. No new transfer agreements were completed during Year 02. In August 1977, written transfer agreements were completed and signed by twelve area hospitals. Grady Hospital has not yet signed a written transfer agreement.
10.1.1. Finalize development of remaining critical care plans based upon vertical categorization of area emergency departments which will be completed prior to June 30, 1976.	10.1.1. Critical care plans were completed in Year 02. In August 1977, critical care plans for poison control, behavioral emergencies, trauma, cardiac care, cranial and spinal cord injuries, and burns were reviewed and approved. A plan for high-risk neonates was not developed.
10.1.2. Develop, through emergency department physicians group, proposed transfer arrangements based upon above critical care plans.	10.1.2. Proposed transfer agreements underwent development during Year 02; however, they were not based upon completed critical care plans.
10.1.3. Obtain MEMS Board policy relating to proposed transfer arrangements.	10.1.3. The MEMS Board endorsed the policy relating to the proposed transfer agreements in August 1977.
10.1.4. Meet with area hospital administrators (and that hospital's physician representative to the MEMS emergency department physicians group) to present proposed transfer arrangements pertaining to that hospital.	10.1.4. No new proposed transfer agreements were presented to hospital administrators during Year 02. In August 1977, twelve hospitals approved transfer agreements.
10.1.5. Implement transfer agreements.	10.1.5. The transfer agreements signed in August 1977 have been implemented.

Year 02 Objectives	Year 02 Accomplishments
10.1.6. Inform all appropriate EMS providers of completed transfer agreements.	10.1.6. Appropriate hospital EMS personnel have been informed of transfer agreements. Ambulance providers have been informed of the West Paces Ferry transfer agreement, but have not yet been informed of the others.
10.2.0. To update written transfer agreements as necessary, reflecting evolving critical care capabilities of regional facilities.	10.2.0. Critical care capabilities of regional facilities did not undergo significant changes during Year 02, and have not undergone significant changes since critical care plans were approved in August 1977. No changes in initial transfer agreements have been made.
10.2.1. Present to area emergency department physicians group updated regional critical care plans for specialty care patients.	10.2.1. No change in critical care plans.
10.2.2. Develop proposed changes in existing transfer agreements based upon updated critical care plans.	10.2.2. No change in critical care plans.
10.2.3. Meet with area hospital administrators to present proposed changes.	10.2.3. No change in critical care plans.
10.2.4. Rewrite transfer agreements as necessary.	10.2.4. No change in critical care plans.
10.2.5. Inform all appropriate EMS providers of updated transfer agreements.	10.2.5. No change in critical care plans.

## Standardized Patient Recordkeeping

Each EMS regional system shall provide for a standardized patient recordkeeping system which shall cover the treatment of the patient from initial entry into the system through his discharge from it, and shall be consistent with patient records used in follow-up care and rehabilitation of the patient.

### Pre-Year 02

MEMS had designed three standard forms to be used in evaluating the EMS system. These were an ambulance dispatch log, an ambulance trip report, and an emergency department record. However, recordkeeping forms were not standard in the system. The Grady Hospital and METRO ambulance providers chose not to adopt the MEMS ambulance dispatch log, but to continue using their own, which called for information similar to the MEMS ambulance dispatch log. Other ambulance providers did adopt the MEMS log. The State Department of Human Resources had approved substitution by area ambulance providers of the MEMS ambulance trip report in place of the State ambulance trip report form. Every hospital emergency department in the region, with the exception of the two largest, Grady and DeKalb General, had adopted the MEMS Emergency Department Record. In cases where MEMS forms were not being used, arrangements had been made for MEMS to access relevant, similar data from existing forms.

Data were collected on appropriate forms during April 1976, before operation of the MEMS communications center, to be compared with data collected in January 1977. These data were to be evaluated by the RAND Corporation.

### End-Year 02

Difficulties regarding standardized patient recordkeeping continued and/or worsened during Year 02. As was the case at the

beginning of the year, the two major ambulance providers, Grady and METRO, use their own ambulance dispatch logs. Rather than allowing substitution of the MEMS ambulance trip report form for its own, the State instead required ambulance providers to fill out the State ambulance trip report form. In some instances, ambulance providers filled out both the MEMS and the State forms; however, the burden of completing two forms caused providers to cease filling out the MEMS form altogether. Grady and DeKalb General hospitals continue to use their own emergency department records. Regardless of which forms have been used, MEMS has experienced difficulty in acquiring and/or has not attempted to acquire the data on the ambulance dispatch, ambulance trip report, and emergency department forms. This is especially true for the State ambulance trip report forms. MEMS has, as of September 1977, yet to acquire the January 1977 State ambulance trip report data necessary for completion of the RAND evaluation. Data collection instruments are in constant use (to an unknown extent) by system components, but MEMS has not adequately monitored the record-keeping process and has accessed minimal data.

Because MEMS has collected little data, it has been limited as to what feedback it could provide to system components. Initially, MEMS provided ambulance dispatch summaries to ambulance providers, and then made the summaries available upon request only. In the latter part of Year 02, ambulance providers did not formally request these summaries.

It is necessary to re-evaluate the use of ambulance dispatch, ambulance trip report, and emergency department forms with the objective of achieving the maximum possible level of standardization, while providing appropriate data for adequate evaluation. This must

be done in light of State and local requirements. Without establishing the full cooperation of all governing agencies, it will be difficult to develop a useful EMS data inventory. Especially noteworthy is the need to establish mechanisms and protocols for data acquisition by MEMS. To evaluate the standardized patient record-keeping component, it would be most useful, as a minimum, to document the proportion of all ambulance dispatches, transports, and emergency department visits recorded on the appropriate standardized forms. More specifically, it would be useful to document (but more difficult to do so) the proportion of patients for whom specific types of data were collected, e.g., patient identification information, how patient arrived at the emergency facility, and ambulance response time. Until these and other such data are routinely collected, attempts to conduct an adequate evaluation of MEMS are severely handicapped, and suffer accordingly.

11.0.0. STANDARDIZED PATIENT RECORDKEEPING

Year 02 Objectives	Year 02 Accomplishments
<p>11.1.0. To insure that the standardized forms in use are revised as necessary to capture data needed by MEMS staff and advisory committees to evaluate and monitor quality of care within the regional EMS system.</p> <p>11.1.1. Review data collected before and after regional system becomes operational in June 1976.</p> <p>11.1.2. Present data summaries to area ambulance providers and emergency departments on a routine basis for their management and review purposes.</p> <p>11.1.3. Meet with area providers to discuss additional informational needs and the effectiveness of the standardized forms in capturing relevant information.</p> <p>11.1.4. Revise standardized forms as appropriate.</p>	<p>11.1.0. The standardized forms have not been utilized as anticipated and have not undergone revision.</p> <p>11.1.1. Data collected in April 1976 before the system became operational have been forwarded to the RAND Corporation. These "pre-MEMS" data are to be compared with "post-MEMS" (January 1977) data for evaluation; however, the "post-MEMS" data have not yet been forwarded to RAND.</p> <p>11.1.2. Limited data summaries of dispatch information were made and presented to area ambulance providers and emergency departments early in the fiscal year but have not been presented to them since that time. The dispatch information is available to providers upon their request, but it has not been requested.</p> <p>11.1.3. No meeting has been held with area providers to discuss informational needs associated with the standardized forms.</p> <p>11.1.4. Standardized forms have not been revised.</p>

### Public Information and Education

The EMS system shall provide programs of public education and information for all people in the area so they know about the system, how to access it, and how to use it properly.

#### Pre-Year 02

The major objective regarding public information and education for Year 01 had been to inform persons residing in and visiting the service area of the proper utilization of the system and of appropriate procedures to use to enter the system. Considerable investments were made in this area in Year 01, and were to continue in Year 02; however, no mechanism had been established to assess the effect of these efforts.

CPR training manpower in the area was adequate, and the number of CPR teaching personnel was increasing. There were certified by the Georgia Heart Association or Red Cross approximately 16 national-program trained faculty members, 45 instructor-trainers, and 109 instructors in the Atlanta area trained under the CPR standards as established by the Supplement to the Journal of the American Medical Association, February 18, 1974. There were approximately 1300 persons in the Atlanta area trained under these standards for basic CPR. Both the Georgia Heart Association and Red Cross provided instructor-trainer and instructor courses (six times per year and as demanded).

There was a need to provide a program of public education to explain the role of and train the public in CPR, and to disseminate information regarding the availability of self-help programs. There was a shortage of CPR training equipment in the area, and in order to meet the CPR needs, more equipment had to be made available. MEMS stated that a reasonable goal for Year 02 was to train 10,000 area people in basic CPR.

MEMS intended to hire a Director of Public Information to direct the coordination of CPR and other self-help programs, and to maintain a public information program. To help develop and carry out these activities, MEMS had established a Public Information and Education subcommittee.

#### End-Year 02

MEMS purchased the following CPR equipment needed for training area residents:

- 3 Recording-Annes
- 6 Resusci-Annes
- 3 Training Films
- 3 Resusci-Babies

MEMS publicized the availability of its CPR training equipment, and met with public safety agencies, the Georgia Heart Association, Red Cross and other CPR coordinators to discuss their needs for CPR training and equipment.

MEMS did not provide CPR training as such during Year 02; i.e., MEMS did not coordinate or schedule CPR training. The major role of MEMS in CPR training was as a lender of CPR training equipment. MEMS also referred inquiries regarding CPR training to proper resources. MEMS estimates that 4,600 area residents and public safety personnel were trained on MEMS CPR equipment during Year 02.

MEMS employed a full-time Public Education Officer during Year 02 for the purpose of establishing an ongoing program of public information and education. The position was terminated at the end of Year 02 due to a budget reduction. The nature of MEMS efforts in public information and education focused on advertisement of the MEMS

phone number and CPR equipment availability via radio, television, newspapers, magazines, letters, billboards, and phone stickers. (A full description of these media efforts is included in MEMS quarterly reports to HEW.) MEMS did not otherwise pursue efforts with public education officials to incorporate programs of medical self-help into the public schools and adult education curricula.

In order to adequately document the extent of public information and education regarding the EMS system, it would be useful to periodically update evaluative indicators such as these:

1. Proportion of a telephone sample of recent users of the EMS system who reported satisfaction with ambulance and/or emergency department services.
2. Proportion of a random telephone sample of the public that knew (a) how to request an ambulance, (b) CPR procedures, (c) nearest hospital emergency department, (d) designated regional facilities for various critical care areas, (e) poison center telephone number, and (f) appropriate antidote for commonly ingested poisons.

12.0.0. PUBLIC INFORMATION AND EDUCATION

Year 02 Objectives	Year 02 Accomplishments
<p>12.1.0. To provide a program of public education to explain the role of the public in CPR and to disseminate information regarding the availability of self-help programs.</p> <p>12.1.1. Provide liaison services to coordinate training needs with area training resources.</p> <p>12.1.2. Determine methods to publicize program.</p> <p>12.1.3. Schedule programs of instruction.</p> <p>12.1.4. Provide CPR training material as needed to public, civic, and private groups.</p>	<p>12.1.0. MEMS did not provide a program of public education for CPR; however, the CPR training equipment which it lent to many area groups was heavily used, and MEMS acted as a referral service for those seeking CPR training.</p> <p>12.1.1. MEMS acted as a referral service on an as-needed basis for individuals and groups seeking information regarding CPR training.</p> <p>12.1.2. MEMS publicized the availability of its CPR training equipment in press releases and letters to community organizations. MEMS met with public safety agencies, the Georgia Heart Association, Red Cross, and other CPR coordinators to discuss their needs for CPR training and equipment.</p> <p>12.1.3. MEMS did not schedule programs of instruction; however, it did schedule the lending of CPR equipment.</p> <p>12.1.4. MEMS provided CPR training material (as available) to public, civic, and private groups.</p>
<p>12.2.0. Establishment of a full time director of Public Education to establish an ongoing program of public information and education regarding self-help programs, first aid, and use of the MEMS system.</p>	<p>12.2.0. MEMS employed a full-time Public Education Officer during Year 02 to establish a program of public information and education. The position was terminated at the end of Year 02 due to a budget reduction.</p>

Year 02 Objectives	Year 02 Accomplishments
<p>12.2.1. Meet with public education officials to obtain agreements to incorporate programs of medical self-help into appropriate public school and adult education curricula.</p>	<p>12.2.1. MEMS met with area CPR coordinators to discuss the role of CPR in the EMS system and the utilization of MEMS CPR equipment. Also, certain adult education programs were among the borrowers of MEMS CPR equipment. MEMS did not otherwise meet with public education officials to incorporate programs of medical self-help into the public schools and adult education curricula.</p>
<p>12.2.2. Work with public education media to provide continuing advertisement of MEMS area-wide single emergency phone number and self-help and CPR programs.</p>	<p>12.2.2. MEMS worked extensively with public education media to provide continuing advertisement of the MEMS phone number and CPR equipment availability. These media included radio, television, newspapers, magazines, billboards, and phone stickers.</p>

### Independent Review and Evaluation

The EMS system must provide for (1) 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 (2) submission to the Secretary of the reports of each such review and evaluation.

#### Pre-Year 02

MEMS had made inadequate provisions for collecting information on the structure or makeup of the EMS system, the processes or characteristics of system activities, and the outcome of system patients. Making inadequate provisions for collecting system information would make it extremely difficult (1) to effectively manage MEMS, and (2) for any independent organization to review and evaluate system performance-- detracting even further from effective management. In addition, MEMS had made little or no attempt to seek assistance to design ways to monitor system performance.

One MEMS evaluation was being undertaken by the RAND Corporation, funded by the Robert Wood Johnson Foundation. MEMS had developed and implemented three standardized patient recordkeeping forms to collect data pertaining to patient care from the time of entry into the EMS system to discharge from the emergency department. These forms (ambulance dispatch log, ambulance trip report, and emergency department log) were to be used by RAND to evaluate the EMS system before and after full implementation of MEMS operations. Baseline data regarding the quality of EMS were collected in April 1976, and data were to be collected again in December 1976 or January 1977.

A number of problems regarding the RAND evaluation were apparent. First, the standardized forms were not used by all system components. The Grady Hospital and METRO ambulance providers chose

not to use the MEMS ambulance dispatch logs, but to continue using their own. The two largest system hospitals, Grady and DeKalb General, chose not to adopt the MEMS emergency department log. Therefore, although MEMS was apparently able to acquire and forward to RAND the designated data, differences in forms may have introduced discrepancies in data characteristics. Second, the choice of sampling procedures was in many ways inappropriate. For one, the seasonal differences introduced by trying to compare April and December or January data raised serious questions about the study's validity. The DHEW Program Guidelines for the EMSS Act suggest that, for this type of evaluation, there should be at a minimum an analysis of 14 days performance throughout the year, and that the 14 days should be a modified random sample chosen so that there is at least one day for each month and two replications of each day of the week. Third, because MEMS was collecting data from forms which did not apply to patients once they left an emergency department, the study would provide inadequate information on the coordination of the system's facilities, and, most importantly, the study would provide inadequate information on patient outcome.

#### End-Year 02

MEMS has not adequately provided for periodic and comprehensive review and evaluation of the extent and quality of the emergency health care services provided in the system's service area. This applies to internal review and evaluation as well as to external, independent review and evaluation. MEMS inability to describe just what comprises, what is going on, and what is coming out of the system has seriously limited opportunities to identify areas where improvements might be made in the quality of care. If MEMS itself

has contributed to improving the quality of care, it cannot be adequately documented.

Completion of the RAND evaluation, which was to compare system performance before and after full implementation of MEMS operations, has been delayed because MEMS has not yet acquired January 1977 ambulance trip reports from the State. This problem results from poor communication between MEMS and the State, which requires ambulances to use State ambulance trip report forms instead of the MEMS forms as originally planned.

Other than the RAND study, only minor efforts to monitor the EMS system have been undertaken. The data that is on the MEMS computer and MEMS standardized forms have not, for the most part, been accessed. Even if MEMS does not have the authority to make changes in the EMS system or significantly affect the system in any way, it should have the ability to provide for monitoring (with sound research design), evaluating, and making recommendations regarding each of the 15 EMS components. The lack of feedback to EMS system providers that results from inadequate evaluation surely has a detrimental effect on the ability of MEMS and the EMS providers to communicate.

To adequately evaluate the impact of the EMS system on patient outcome, measures such as these should be made:

1. Number of automobile accidents.
2. Number of injuries and deaths resulting from automobile accidents.
3. Death rates and three-month survival rates, by age group, due to (a) myocardial infarction, (b) poisoning; (c) trauma, (d) drug or alcohol overdose.
4. Three-month survival rates for high-risk neonates.

5. Ratio of patients dead on arrival of ambulance at emergency site to patients who died after ambulance arrival but before admission to emergency department among all ambulance record transports.
6. Ratio of dead to live hospital discharge for patients with a primary discharge diagnosis of myocardial infarction, poisoning, trauma, drug or alcohol overdose, or high-risk neonate.

13.0.0. INDEPENDENT REVIEW AND EVALUATION

Year 02 Objectives	Year 02 Accomplishments
<p>13.1.0. To select and contract with an independent evaluator to assess the MEMS system.</p> <p>13.1.1. Contact EMS system authorities in neighboring states to identify an agency qualified to perform an evaluation of EMS effectiveness.</p> <p>13.1.2. Solicit bids for EMS evaluation.</p> <p>13.1.3. Review qualifications of interested parties and obtain comments from HEW and local EMS authorities to verify qualifications.</p> <p>13.1.4. Award contract for evaluation.</p> <p>13.1.5. Provide data as required, based upon standardized forms now in use by area ambulance providers and emergency departments.</p>	<p>13.1.0. MEMS contracted with the Health Systems Research Center (HSRC) of the Georgia Institute of Technology to evaluate Year 02 activities of MEMS.</p> <p>13.1.1. MEMS contacted EMS system authorities to identify an agency qualified to perform the Year 02 evaluation.</p> <p>13.1.2. MEMS selected HSRC to perform the Year 02 evaluation.</p> <p>13.1.3. MEMS reviewed the qualifications of HSRC.</p> <p>13.1.4. MEMS awarded the contract for evaluation to HSRC.</p> <p>13.1.5. MEMS has provided required data for evaluation to HSRC.</p>
<p>13.2.0. To implement needed changes in the regional EMS system as evidenced by the evaluation study.</p> <p>13.2.1. Present final evaluation to MEMS Board of Directors, Advisory Council, advisory committees, and staff.</p> <p>13.2.2. Review appropriate sections of evaluation to discover deficiencies or needs within the EMS system.</p>	<p>13.2.0. MEMS plans to implement needed changes as evidenced in the evaluation in Year 03.</p> <p>13.2.1. MEMS plans to present evaluation to appropriate groups in Year 03.</p> <p>13.2.2. MEMS plans to review the evaluation in Year 03.</p>

Year 02 Objectives	Year 02 Accomplishments
<p>13.2.3. Develop specific recommendations to correct identified deficiencies within system.</p>	<p>13.2.3. MEMS plans to develop specific recommendations to improve the system in Year 03.</p>
<p>13.2.4. Implement recommended changes in EMS system in cooperation with appropriate authorities, utilizing evaluation results as basis for change.</p>	<p>13.2.4. MEMS plans to implement needed changes as evidenced in the evaluation in Year 03.</p>

## Disaster Planning

The EMS system must 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.

### Pre-Year 02

In the seven county metropolitan Atlanta region, hospitals and civil defense units had disaster plans and conducted drills periodically. A medical annex to the regional civil defense disaster plan had been established which assigned the responsibility for medical control in a disaster situation to the medical director of Grady Hospital. This annex applied to the seven county metropolitan Atlanta region, and constituted the system-wide plan for disaster manpower. It was a very centralized plan which depended heavily upon Grady Hospital for direction, manpower, and facilities.

Hartsfield International Airport had completed development of a disaster plan for the airport vicinity. MEMS staff, in conjunction with their development of an ALS unit at the airport operated by the Atlanta Fire Bureau, assisted in developing the plan, code-named "Big Bird." MEMS staff was scheduled to participate in updating and periodically testing the airport disaster plan.

The MEMS regional disaster plan was under development, and was scheduled to be completed during Year 02. This plan was to be based upon both existing plans and the critical care capabilities of each hospital which were being identified by the emergency physicians group to enable development of area critical care plans.

The need existed to expand the target area of the regional disaster plan as appropriate to include those counties surrounding the seven county metropolitan area.

End-Year 02

The MEMS disaster plan was completed and approved by all necessary participants during Year 02, including the Medical Director of Grady Hospital. A major improvement of the plan over the existing medical annex plan is that the MEMS plan is considerably more decentralized, depending more upon local direction, manpower, and facilities in eight designated "disaster zones," and less upon Grady Hospital resources. The MEMS plan was not tested in Year 02 due, in part, to the uncertainty of Fulton County's participation in MEMS. MEMS should conduct a disaster drill, given more stable circumstances.

MEMS participated in planning, observing, and reviewing the "Big Bird" disaster drills at Hartsfield International Airport, one during Year 02 and a second in July 1977. MEMS assisted in coordinating the response to an airline crash in Paulding County by contacting local ambulance dispatchers and hospitals to alert them of the disaster. MEMS participated in the review and evaluation of the airline disaster response, and made revisions in the MEMS disaster plan accordingly.

MEMS undertook no formal effort to extend the regional disaster plan beyond the seven county metropolitan Atlanta area. This may have been due, in part, to MEMS efforts in completing the disaster plan for the seven county metropolitan area, and to the unstable state of MEMS existence throughout much of Year 02.

It would be useful to document in the MEMS disaster plan the proportion of EMS facilities (dispatch points, ambulances, emergency departments) with a designated role in the plan. Also, it would be useful to document the proportion of these facilities which participated in a disaster drill (conducted by MEMS, a civil defense agency, an individual facility, or other entity) during the previous year.

14.0.0. DISASTER PLANNING

Year 02 Objectives	Year 02 Accomplishments
<p>14.1.0. To update disaster plan annually to reflect changing critical care capabilities and emergency facilities in the area.</p> <p>14.1.1. Review updated critical care plans.</p> <p>14.1.2. Assess need for modification in regional disaster plan based upon above information.</p> <p>14.1.3. Revise disaster plan as needed.</p> <p>14.1.4. Distribute revisions to participants.</p>	<p>14.1.0. The MEMS disaster plan was completed for the first time during Year 02, based upon the level of critical care and emergency facilities capabilities known to be available at the start of Year 02.</p> <p>14.1.1. Critical care plans were developed and completed for the first time in Year 02 and have not since been updated.</p> <p>14.1.2. Regional disaster plan was based, in part, on known levels of critical care and emergency facilities capabilities known to be available at the start of Year 02. The plan was updated following the Paulding County airline disaster.</p> <p>14.1.3. Disaster plan was completed for the first time during Year 02, prior to completion of critical care plans.</p> <p>14.1.4. Initial disaster plan has been distributed to participants.</p>
<p>14.2.0. To conduct a disaster drill to test the disaster plan, and to evaluate system performance to identify weaknesses.</p> <p>14.2.1. Notify all disaster plan participants of intent to conduct a drill, without specifying date or time.</p>	<p>14.2.0. MEMS has not conducted a disaster drill. It has participated in two mock disasters, one actual disaster, and one "minor" disaster.</p> <p>14.2.1. No disaster drill was scheduled by MEMS. Atlanta/Fulton County Division of Civil Defense conducted two mock disaster drills, known as "Big Bird I and II," at Hartsfield International Airport; one was during Year 02, and the second was in July 1977. MEMS was</p>

Year 02 Objectives	Year 02 Accomplishments
	<p>asked to participate in those drills. MEMS participated in the EMS response to the Paulding County airline disaster.</p>
14.2.2. Devise methods of monitoring disaster reaction and choose observers.	14.2.2. MEMS assisted in the planning of "Big Bird I and II."
14.2.3. Brief observers.	14.2.3. MEMS was briefed as an observer of "Big Bird I and II."
14.2.4. Conduct drill.	14.2.4. Drills were conducted.
14.2.5. Receive observer reports, conduct inhouse review.	14.2.5. MEMS observed the drills, and conducted its own review of them. MEMS received reports and reviewed response to the airline disaster.
14.2.6. Conduct meeting with participants to review performance.	14.2.6. MEMS met with drill participants to review performance. MEMS met with airline disaster participants to review performance.
14.2.7. Prepare a report to describe weaknesses.	14.2.7. MEMS submitted critiques of the drills to Atlanta/Fulton County Division of Civil Defense. MEMS was involved in evaluating the airline disaster response.
14.3.0. To extend response capabilities of seven county regional disaster plan to those counties contiguous to the MEMS service area.	14.3.0. MEMS has undertaken no formal effort to extend the regional disaster plan beyond the seven metro-area counties. MEMS met with Cherokee, Fayette, Forsyth, Henry, Paulding, and Walton Counties to discuss mutual aid and other involvements with MEMS; however, disaster planning was not discussed as such.

Year 02 Objectives	Year 02 Accomplishments
14.3.1. Request appropriate agencies and components within counties to describe their disaster role.	14.3.1. No disaster planning with outlying counties.
14.3.2. Review all role descriptions to develop disaster plan describing, as a function of disaster location and magnitude, the role of each public safety agency.	14.3.2. No disaster planning with outlying counties.
14.3.3. Determine medical requirements of disasters in terms of magnitude and location and identify components participation.	14.3.3. No disaster planning with outlying counties.
14.3.4. Request procedural details from public safety agencies.	14.3.4. No disaster planning with outlying counties.
14.3.5. Develop procedural details of disaster plan, for components and MEMS communication center, to be compatible with public safety procedures where necessary.	14.3.5. No disaster planning with outlying counties.
14.3.6. Document comprehensive plan and distribute.	14.3.6. No disaster planning with outlying counties.

## Mutual Aid Agreements

Each EMS system shall provide for the establishment of appropriate arrangements with EMS 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.

### Pre-Year 02

MEMS had met with representatives of the 17 counties within the metropolitan Atlanta toll-free call area to develop operational agreements to enable MEMS to transfer all operator-dialed emergency calls to the appropriate county ambulance provider. Development of written mutual aid agreements with EMS resources outside the MEMS service area had been a low priority during Year 01 due to the need for addressing problems within the MEMS service area.

There was a need to develop written mutual aid agreements with adjoining counties in the toll-free call area for providing for mutual aid in the event of a disaster. There was a need to develop appropriate relationships with the nine counties in the EMS region but outside the MEMS service area, and with the eight counties in the HSA boundary but outside the EMS region.

### End-Year 02

MEMS has implemented a number of operational agreements with EMS resources in the counties outside the MEMS service area but within the toll-free call area. MEMS cooperates daily with public safety officials and EMS-related providers in these counties. These agreements resulted to a great degree from the meetings MEMS had with county representatives during Year 01. The agreements may provide a foundation for establishment of written mutual aid agreements in

the event of a disaster; however, no formal efforts in this area have been undertaken.

MEMS has met with the chairmen of the county commissions and other representatives of Cherokee, Fayette, Forsyth, Henry, Paulding, and Walton counties to discuss mutual aid and inclusion in the MEMS service area. Representatives of these counties wrote letters of support indicating interest in further discussions relating to inclusion in the MEMS service area, but no further related activities were undertaken. MEMS has not undertaken formal activities related to including in MEMS operations those counties in the North Central Georgia HSA but outside the present State EMS region.

There is a need to establish cooperative arrangements with the three counties in the seven county metropolitan area which have not chosen to participate with MEMS, or which do so on a limited basis. These are Clayton, DeKalb, and Gwinnett Counties. There is also a need to establish ongoing cooperative arrangements with Cobb County, which now participates with MEMS on a very limited basis, and is scheduled to cease financial support of MEMS at the end of 1977. Of course, given the day-by-day, threatened state of MEMS existence, it will be most difficult to establish any new formal mutual aid agreements.

If written mutual aid agreements can be developed, it would be useful to monitor this component of the system with indicators such as these:

1. Number of written mutual aid agreements signed by authorized individuals.
2. Proportion of these mutual aid agreements which (a) specify mutual aid, communications linkages, licensure and certification, reimbursement, etc.; and (b) have been reviewed and re-evaluated during the previous year.

15.0.0. MUTUAL AID AGREEMENTS

Year 02 Objectives	Year 02 Accomplishments
<p>15.1.0. To expand existing operational agreements with adjoining counties in the toll-free call area to include mutual aid agreements in the event of a disaster.</p> <p>15.1.1. Invite representative emergency department physicians from adjoining counties to review MEMS disaster plan after it is completed by the MEMS Disaster Committee.</p> <p>15.1.2. Develop proposed mutual aid agreements to enable a regional medical disaster plan for all counties in the call area.</p> <p>15.1.3. Present this plan for review and approval to appropriate county governments.</p> <p>15.1.4. Develop written mutual aid agreements enabling medical response to a disaster anywhere in the toll-free call area.</p> <p>15.1.5. Review and evaluate written mutual aid agreements annually.</p>	<p>15.1.0. No expansion of existing operational agreements with adjoining counties to include mutual aid agreements in the event of a disaster was accomplished.</p> <p>15.1.1. Emergency department physicians from adjoining counties were not invited to review the MEMS disaster plan.</p> <p>15.1.2. No proposed mutual aid agreements were developed to expand the disaster plan to include all counties in the call area.</p> <p>15.1.3. No expanded disaster plan.</p> <p>15.1.4. No written mutual aid agreements were developed to expand disaster medical response.</p> <p>15.1.5. No written mutual aid agreements were developed to expand disaster medical response.</p>
<p>15.2.0. To develop written mutual aid agreements with those nine counties in the State EMS region but outside the present MEMS service area, including possible inclusion in the MEMS service area if deemed appropriate.</p>	<p>15.2.0. No written mutual aid agreements were developed with those nine counties in the State EMS region but outside the present MEMS service area.</p>

Year 02 Objectives	Year 02 Accomplishments
15.2.1. Meet with appropriate EMS providers and county governments to develop arrangements.	15.2.1. MEMS met with the chairman of the County Commissioners from six of the nine counties to discuss mutual aid and inclusion in the MEMS service area.
15.2.2. Finalize written agreements.	15.2.2. No written mutual aid agreements were developed.
15.2.3. Develop operating procedures for initiating and responding to mutual aid requests.	15.2.3. No operating procedures for initiating and responding to mutual aid requests were developed.
15.2.4. Include adjoining counties in regional EMS system if deemed mutually appropriate.	15.2.4. Representatives of the six counties which met with MEMS wrote letters of support indicating interest in further discussions relating to inclusion in the MEMS service area. No further related activities were undertaken.
15.3.0. Develop written mutual aid agreements with those eight counties in the North Central Georgia HSA but outside the State EMS region which includes MEMS.	15.3.0. No written mutual aid agreements have been developed with those eight counties in the HSA and outside the State EMS region.
15.3.1. Meet with HSA planning staff to coordinate planning efforts toward developing a regional EMS system throughout the HSA.	15.3.1. MEMS has met with HSA staff to discuss planning efforts toward developing a regional EMS system throughout the HSA.
15.3.2. Meet with appropriate EMS providers and county governments to develop arrangements.	15.3.2. No meeting was held with appropriate EMS providers or county governments.
15.3.3. Finalize written agreements.	15.3.3. No mutual aid agreements were developed.

Year 02 Objectives	Year 02 Accomplishments
<p>15.3.4. Develop operating procedures for initiating and responding to mutual aid requests.</p>	<p>15.3.4. No mutual aid agreements were developed.</p>
<p>15.3.5. Include adjoining counties in regional EMS system if deemed mutually appropriate.</p>	<p>15.3.5. No formal activity related to including adjoining counties in regional EMS system were undertaken.</p>

### CONCLUDING REMARKS

As evidenced throughout this descriptive evaluation, MEMS has had numerous problems since its inception. These include managerial problems, operational problems, and an inability to adequately monitor the components of the EMS system. These problems have brought on the threatened existence of MEMS and have, in turn, made it difficult to devote sufficient resources toward making MEMS work.

The concept of a single agency being responsible for coordinating emergency medical services within the region still appears to have considerable merit, although as practiced by MEMS this concept has met with unsatisfactory results thus far. As of September 1977, MEMS is faced with the prospect of operating without several of the Atlanta metropolitan area counties, if it operates at all. However, until adequate provisions are made for thorough data collection and analysis, it would be unwise to dismiss MEMS as a failure. MEMS has brought improvements in vital areas such as critical care facility categorization and area disaster planning. MEMS has made significant contributions to and logged experience in implementing a region-wide communications network. Most important, the very existence of MEMS and the controversy surrounding it have surely heightened the awareness of area residents, media, health system personnel, and government to emergency medical services and the need to effectively coordinate them. Effective coordination of the EMS system cannot be accomplished without being able to thoroughly evaluate its performance.

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