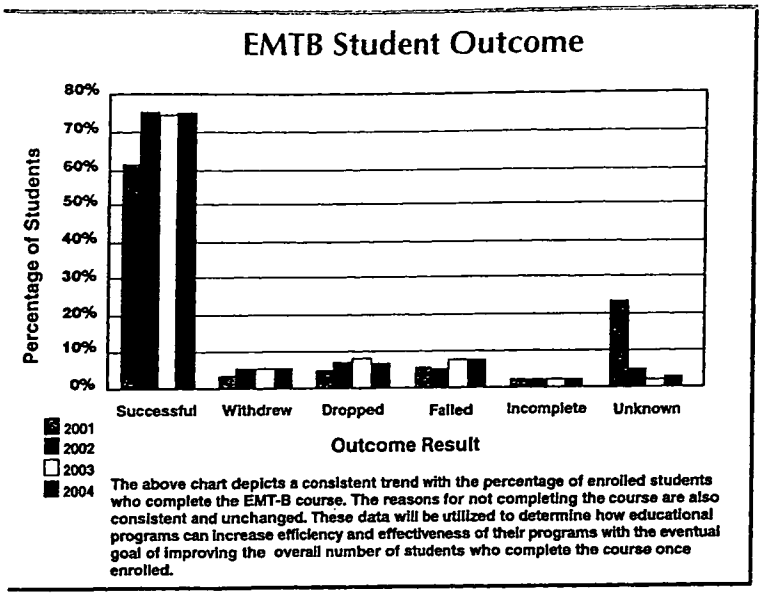
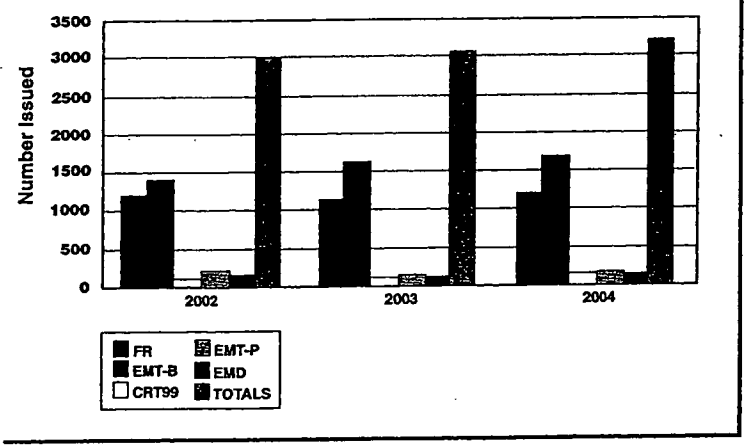


The above chart depicts a consistent trend with the percentage of enrolled students who complete the EMT-B course. The reasons for not completing the course are also consistent and unchanged. These data will be utilized to determine how educational programs can increase efficiency and effectiveness of their programs with the eventual goal of improving the overall number of students who complete the course once enrolled.



certificates to prehospital providers. This number is the highest in nearly a decade. The largest growth, by percentage, was with CRT – I and paramedic, followed by EMT-Basic. (See "Initial Certifications and Licenses Issued" chart.) The Office worked with other departments throughout the agency by providing provider data and trends to the Workforce Committee, which was developed to analyze trends pertaining to the recruitment and retention of prehospital professionals.

With the full implementation of the EMS education program approval process, the Office has committed to focus on EMS education quality improvement and assurance. In January 2004, the Office offered a workshop for ALS educational programs which focused on quality improvement within the educational program. Sandy Hunter, PhD, from Eastern Kentucky University, a leading expert on implementing quality improvement within EMS educational programs, provided insightful tips and tools to those in attendance.

The workshop also allowed for best practices to be shared among the educational programs. In addition to the workshop, the office has initiated an EMS education program quality assurance committee that primarily focuses on analyzing program methodologies correlated to student outcome. Specific to BLS educational programs, the Office continues to review and compare data gathered from the Maryland Emergency Services Student Application (MESSA). (See the "EMTB Student Outcome" chart.) The ultimate goal of all of the above mentioned projects is to promote increased quality and outcome throughout the state by sharing of best practices between educational programs and objectively analyzing and using data collected.

In collaboration with the BLS Committee of the Statewide EMS Advisory Council (SEMSAC), the Office completed development and implementation of the 2005 EMT-Basic refresher curriculum. The curriculum took the committee over two-years to develop and is subtitled "Back to the Basics...." The curriculum emphasizes basic EMT-B skills and within the 24-hour course, students are afforded more opportunity to practice and refine skills, especially those skills with high-criticality and/or low frequency of use. The design and development of the curriculum were driven by data from EMT-B tests and from the Maryland Ambulance Information System (MAIS), as well as instructor input. After analyzing the data, the committee, comprised of educational and content experts, continually fine-tuned the document and brought the curriculum to fruition. Throughout the months of May and June 2005, the Office, in conjunction with Maryland Fire & Rescue Institute staff, rolled out the new curriculum across the state to all EMT-B instructors. The curriculum was implemented on July 1, 2005.

EMERGENCY HEALTH SERVICES DEPARTMENT

UNIVERSITY OF MARYLAND, BALTIMORE COUNTY

Mission: To provide leadership in the field of emergency health services through excellence in education. This educational excellence is supported by an active research agenda, service to the University and EMS communities, and provision of professional continuing education. The EHS Department recognizes as constituents the University of Maryland at Baltimore County, MIEMSS, and the Maryland, national, and international EMS communities.

The Emergency Health Services (EHS) Department received a continuation of its contract for the fifth year with the Department of Homeland Security (formerly with the U.S. Public Health Service) to develop and provide training and education for over 8,000 members of the National Disaster Medical System (NDMS). The department is also working with the Maryland Department of Health and Mental Hygiene on a number of training projects. To accommodate the department's expanding external contracts and grants, the department created the Center for Emergency Education and Disaster Research (CEEDR) under the leadership of Richard Bissell, PhD.

Demand has increased for EHS students upon graduation, with an increasing shortage of qualified paramedics nationwide and rapidly growing employment for management and graduate students in the realm of homeland security.

Undergraduate enrollment continues to increase, especially in the paramedic track, which opened a designated laboratory for skills and individualized instruction. One reason for the enrollment increase is the EHS Living Learning Center, an academic residential community for EHS majors. The department continues to maintain Maryland accreditation from MIEMSS and national accreditation through CAAHEP. EHS majors are active members of 27 Maryland emergency services organizations.

To date, EHS has contracts with over 40 educational institutions nationwide to provide critical care transport training utilizing the department's Critical Care Transport course.

EMERGENCY MEDICAL SERVICES FOR CHILDREN

Mission: To provide the leadership, direction, and expertise in the coordination of resources that focus on the unique needs of children and their families in a manner that facilitates the efficient and effective delivery of prehospital, hospital, and restorative care throughout the state. These resources include injury and illness prevention, clinical protocols, standards of care and facility regulation, quality improvement initiatives, interagency collaboration, and initial and continuing education for providers across the continuum of care that will promote the health and well-being of children in Maryland.

The Emergency Medical Services for Children (EMSC) Program is responsible for the development of statewide guidelines and resources for pediatric care, the review of pediatric emergency care and facility regulations, coordination of pediatric education programs, and collaboration with other agencies and organizations focused on childhood health and illness and injury prevention. The EMSC Program coordinates the state Pediatric Emergency Medical Advisory Committee (PEMAC), the state Pediatric Quality Improvement Committee (QIC), and the five Regional Pediatric EMS Advisory Committees. Federal EMSC grants are coordinated through the Maryland EMSC Program Office, involving statewide projects, specialized targeted issues, projects, and research initiatives at academic universities. The Maryland RISK WATCH® Champion Management Team is led by the MIEMSS EMSC Program and the Office of the State Fire Marshal in collaboration with state and local SAFE KIDS coalitions.

The EMSC Program staff and medical directors from PEMAC continue to support the Maryland Enhanced Prehospital Education for Prehospital Providers (PEPP) courses and coordinate the PEPP statewide steering committee to facilitate sharing of faculty resources, plan for recertification, and identify material that correlates with the Maryland EMS Medical Protocols. This steering committee meets jointly with the state PEMAC and the Maryland chapter of the American Academy of Pediatrics' (AAP) Committee on Pediatric Emergency Medicine. Based upon the consensus process, the 2004–2005 Maryland Enhanced PEPP program been expanded to include partnering with Pediatric Advanced Life Support (PALS) programs to offer recertification within PEPP courses and additional advanced airway management for the Maryland State Police Aviation Division. Maryland PEPP instructors and medical directors conducted two PEPP ALS course and course coordinator rollouts for Delaware EMSC in collaboration with Shore Health System and Cecil–Kent counties (www.miemss.org/EMSCwww/PEPPEnhanced.html).

Through the Maryland Medical Protocol review process, establishment of current state-of-the-art clinical approaches to managing children with poisoning, pain, cardiac, and Apparent Life Threatening Emergencies (ALTE) have been developed and implemented. Protocol revisions were based upon a comprehensive evidence review and expert consensus process of the

PEMAC. During each of the educational seminars and conferences in Maryland during 2004–2005, pediatric case reviews were presented to highlight the protocol changes for July 1, 2005. The EMSC staff developed a CD-ROM training resource on child victimization with an expanded recognition component. This resource has been made available to all county and college training programs. The EMSC program and PEMAC members are participating in the revisions of the Volunteer Ambulance Inspection Program to ensure that pediatric protocols are incorporated, along with national EMSC performance measures.

Prehospital continuing education programs were offered at several conferences throughout the state. Pyramid 2004 included pediatric JUMP-START and burn workshops. Winterfest 2005 featured a preconference on child abuse and children with technology-assisted care and a conference presentation on protocol updates through case reviews. The Miltenberger EMS & Trauma Conference included displays on family preparedness and child passenger safety and a workshop on pediatric case reviews. The EMS Care 2005 state conference piloted a preconference on family preparedness, as well as presentations on child victimization, poisoning, neonatal resuscitation, pediatric case reviews, and ALS pediatric airway management. The EMSC disaster project and Child Passenger Safety project were presented at the state Emergency Nursing Association annual conference in May.

Maryland EMS for Children Program

2004 Injury Prevention Special Projects

EMS Based Injury Prevention Program for Children

July 2004–December 2004

Applicant	Summary of Project	Target Audience
Region IV Shore Health Systems EMS Program with Easton, Suddlersville & Preston FVDs	**"Can You See Me Now?":** Pilot program targeting rural families to increase use of helmets and reflective gear for bikes, ATVs, and motorized vehicles. Focus is to educate families on the importance of the correct helmet for each activity and the developmentally appropriate ages for each type of vehicle.	Queen Anne and Talbot Counties
Region IV United Communities VF&RD with Queen Anne's Sheriff Kent Island Elks Lodge	**"Bike Safety Promotion":** implementation of a bike safety program to coincide with brand new bike path on Kent Island with no sidewalks and a growing young population.	Queen Anne County
Region V Emergency Education Council Region V with Tulip Grove Elementary and Bowie VFD	**RISK WATCH®: Before & After School Program – Disaster Curriculum Pilot:** Pilot project with elementary school to introduce Disaster Modules of RISK WATCH® with the EMA office and start RISK WATCH® prevention in the before & after school program.	School-age children in Bowie Maryland
Region V Montgomery County Fire & Rescue and Montgomery County SAFE KIDS	**"Gear Up for Bike Safety":** Bike helmet and safety intervention with high- risk multi-lingual communities. Partnership between Fire & Rescue, SAFEKIDS Coalition and National Capital Park Police with activities integrated into schools participating with RISK WATCH®.	School-age and middle-school children in Montgomery County
Region V Greenbelt VFD & Auxiliary with Prince George's County SAFE KIDS & RISK WATCH® Coalitions	**RISK WATCH for Frances Fuches Special Needs Center:** Replication of successful project in Special Needs Centers with the adaptation of the NFPA RISK WATCH® curriculum tools, presentations, and evaluations.	2-6 year olds with special learning and medical needs
Region V Montgomery County Fire & Rescue with Maryland Sportsplex & County SAFE KIDS	**"Every Second Counts":** sports complexes are adding automatic external defibrillators (AEDs). Coaches' seminar will focus on not only CPR & AED but also injury recognition and hydration. Local partners are providing the AEDs that have pediatric capabilities.	Coaches for youth & children in Montgomery County

MIEMSS has again been awarded an EMSC State Partnership Grant from the Maternal Child Health Bureau of the Department of Health and Human Services in joint sponsorship with the National Highway Traffic Safety Administration (NHTSA). The 2003–2006 EMSC Partnership Grant continues to build on the integration of EMSC with new interagency collaborations with the Maryland chapter of the (AAP) and the Maryland State Department of Education. This grant will provide for further integration of the Kids in Disasters initiatives with a review of existing programs, plans, and policies for inclusion of the needs of children and families and expansion of the JUMPSTART triage training and disaster preplanning with schools. The Kids in Disasters project includes the following initiatives:

1. Pediatric Triage Training with START and JUMPSTART workshops with corresponding tabletop exercises and scenarios focused on children. Educational opportunities are being expanded to include school and public health nurses with scenarios involving children with special learning and health needs.

2. A Maryland Moulage Team continues to assist in the preparation of victims for full-scale drills. Resources on moulage are available on the Emergency Education Council of Region 5 website http://www.eecreg5.org/moulage/index.htm.

3. The Maryland Virtual Emergency Response Systems (MVERS) is a joint project with the Maryland State Police, the MIEMSS Operational Support Team, and school partners. The MVERS program provides worksheets for gathering information and the page-builder software on CD-ROM to store and recall the essential data in an organized format for all aspects of an emergency response. The program focuses on improving and enhancing the communication and coordinated response of public safety, public health, and educational professionals to critical incidents, both man-made and natural. Anne Arundel County schools are utilizing the MVERS project through a federal Department of Education grant they received.

The Maryland EMSC program received a second EMSC Regional Symposium grant and coordinated the third Mid-Atlantic eight-state EMSC Regional Symposium with Delaware EMSC in November 2004. The Mid-Atlantic EMSC group includes Virginia, West Virginia, the District of Columbia, Maryland, Delaware, Pennsylvania, New Jersey, and New York.

The federal EMSC research agenda continues to be implemented through the Chesapeake Applied Research Network (CARN) of the national Pediatric Emergency Care Applied Research Network (PECARN). The CARN project is based at Children's National Medical Center and through partnerships with Johns Hopkins Children's Center provides the academic base for the nodal network in Maryland that have the first EMS and Emergency Department collaborative research projects within the PECARN project. The CARN is establishing data linkage projects and the structure to apply for and implement pediatric EMS and emergency department research initiatives.

During May 2005, EMS for Children's Day was celebrated across Maryland through the recognitions of children and youth who have demonstrated one of the 10 Steps to Take in an Emergency or one of the 10 Ways to be Better Prepared for an Emergency. On May 13, 2005, Governor Robert L. Ehrlich, Jr. presented eleven young Marylanders with awards for their actions that ensured anther person would receive "The Right Care When It Counts." Public service announcements and a Maryland EMSC Day poster are available in English and Spanish to continue the public education message promoting injury prevention, family preparedness, and appropriate emergency actions (www.miemss.org/EMSCwww/RightCare.html).

The EMSC Program continues to receive a Maryland Department of Transportation Highway Safety Grant focused on improving the child passenger safety resources within Maryland hospitals and health care professional practices. Maryland's Child Passenger Safety Law changed on October 1, 2003 (with the inclusion of booster seats). MIEMSS collaborated with the Maryland Highway Safety Office, the Kids in Safety Seats (KISS) program, and the Maryland chapter of AAP to host a conference call focused on the importance of using booster seats for preschool and early school-age children. The project has also included the following projects:

1. CPS website (www.miemss.org/EMSCwww/CPSHome.htm) resources
2. "Child Passenger Safety: Best Practice for Health Care Facilities" workbook and introductory PowerPoint training program (CD)

3. "Proper Occupant Protection" training video/DVD for hospitals

Maryland was awarded a RISK WATCH® Champion Award for 2003- 2005 from the National Fire Protection Association (NFPA). The EMSC Program at MIEMSS is the lead agency coordinating this initiative, along with the Office of the Maryland State Fire Marshal. Other partners in RISK WATCH® include Maryland SAFE KIDS, the Fire Prevention Committee of the Maryland State Firemen's Association, the State Highway Administration, the Maryland State Police, the Maryland & National Capital Poison Centers, the Maryland Chapter of the American Trauma Society (ATS), and the Maryland Department of Natural Resources. During year two of the Champion Award given to Maryland, four communities have placed the RISK WATCH® program into more than 150 classrooms during the 2004–2005 school year. These communities are Montgomery, Prince George's, special needs schools in Prince George's county, and a parochial school in Charles County. MIEMSS has developed a website page for RISK WATCH® and produced posters to increase the access for teachers and parent in other counties and school systems (www.miemss.org/EMSCwww/RISKWATCH2.htm). The Maryland State Firemen's Association provided the funding for another 9-1-1 simulator to be dedicated to RISK WATCH® programs and for each school to receive at least four "RISKY BUSINESS" boxes that include training equipment and videos on life-safety skills. RISK WATCH® projects were displayed at the June 2005 Maryland State Firemen's Association convention.

The EMSC Program staff actively participates in national, state, and local SAFE KIDS coalitions; the Maryland division of the American Trauma Society; the Maryland Occupant Task Force; and the Child Passenger Safety Board coordinated by the State Highway Administration. This collaboration provides a consistent flow of information to the five regional pediatric committees and the state PEMAC on injury prevention resources and initiatives. EMSC continues to participate on the Child Fatality Review committee in collaboration with the Maternal Child Health Department. Through the federal EMSC Partnership Grant, Special Projects in Injury Prevention continue to be available and awarded through the EMSC program office. The recipients during the federal FY 2004 grant period are listed on page 9.

EPIDEMIOLOGY OFFICE

Mission: To contribute to MIEMSS' mission of reducing preventable deaths, disability, and discomfort from injury and acute illness by supporting the ongoing effort of improvement of the EMS system through scientific analysis of EMS data, research, and development of EMS information collection and dissemination tools.

Maryland Cardiac Arrest Public Defibrillation Study

The Maryland Cardiac Arrest Public Defibrillation Study (M-CAPD) was begun in January 2001 by the Epidemiology Office. This study has two main objectives: (1) to determine the impact of the Facility AED Program; and (2) to identify whether there is a need for the State to require that AEDs be placed in certain public locations. This study is ongoing.

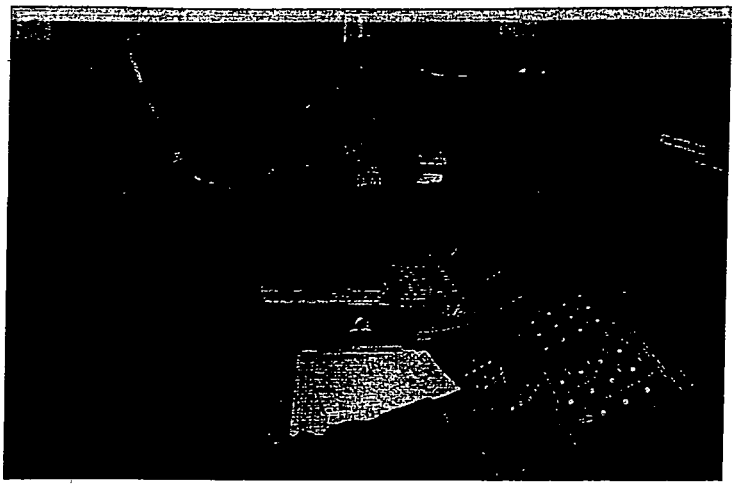
Additional information about the study can be found on the M-CAPD website http://www.miemss.org/m-capd.htm.

Maryland Cardiac Arrest Surveillance System (M-CASS)

The MIEMSS Epidemiology Office established the Maryland Cardiac Arrest Surveillance System (M-CASS) in January 2001.The surveillance system has two main objectives: (1) to identify the epidemiology of out-of-hospital sudden cardiac arrest in Maryland; and (2) to evaluate the effectiveness of the Maryland EMS System in responding to cardiac arrests. The surveillance system captures all out-of-hospital sudden cardiac arrests that contact the 9-1-1 emergency medical system in Maryland. The Utstein Style templates (Adult and Pediatric) are applied to the data to evaluate the Maryland System. State annual reports for statewide data are available upon request.

FIELD OPERATIONS

Mission: To provide support in the area of planning and coordination for health and medical preparedness for catastrophic events, as well as to provide communications equipment and maintenance and to provide communications services to assist in the quality of care provided patients in Maryland's EMS System.



Communications Engineering Services

An active participant with other State agencies, MIEMSS Communications assisted with the installation of new towers at Matapeake (Queen Anne's County), Kingsville (Baltimore County), Chestertown (Kent County), Chesapeake City, Cecilton, and Fairhill (Cecil County), and Tollgate and Joppa (Harford County). These new towers will enhance the existing statewide communications system infrastructure.

New medical base stations were installed at Lambs Knoll in Washington County and Princess Anne in Somerset County.

Several grants were secured to develop and implement a statewide digital EMSTEL network that will replace the aging analog system. A partnership with the Maryland Department of Health & Mental Hygiene (DHMH) will connect the county health departments to the DHMH center in Baltimore and to the MIEMSS communications centers. The new Voice Over Internet Protocol (VOIP) network will add to and share new digital infrastructure provided by MIEMSS, CMARC, and MESIN.

Three regular Central Alarm Advisory Council meetings were held around the state–one in Anne Arundel County in August, one in Queen Anne's County in December, and one in Frederick County in April.

A total of 35 mobile and 30 portable EMS radios were distributed throughout the state. Grant funding in the amount of $371,316 was supplied for the purchase of cardiac monitor/defibrillators and automated external defibrillators. Twenty new Med Channel base stations were purchased and installed around the state.

MIEMSS Communications processed a total of 1,870 service reports and performed 74 volunteer ambulance inspections during FY 2005.

EMRC/SYSCOM

In FY 2005, the Emergency Medical Resource Center (EMRC) handled 161,235 telephone calls and 122,279 radio calls. Of these 283,514 calls, 106,318 were communications involving a patient or incidents with multiple patients.

In FY 2005, the System Communications Center (SYSCOM) handled 61,698 telephone calls and 4,653 radio calls. Of these 66,351 calls, 6,850 were related to requests for med-evac helicopters.

EMRC/SYSCOM continued participation in the National Disaster Medical System (NDMS). Utilizing the Facility Resource Emergency Database (FRED), EMRC/SYSCOM obtained hospital bed status information for routine quarterly exercises and in response to specific requests related to the war in Iraq.

The FRED system was also utilized by EMRC/SYSCOM in support of local emergencies and exercises conducted statewide.

As part of a cooperative agreement, EMRC/SYSCOM answered 446 calls for the DHMH 24-hour Duty Officer.

Emergency Operations Program

The Emergency Operations Program has been established to support our federal, state, local, and private partners in areas of health and medical preparedness. Some of the program's activities over the past fiscal year included:

- Continue to staff and coordinate the Governor's Emergency Management Advisory Council, Health and Medical Committee, which is responsible for the planning and coordination of all health and medical preparedness activities in Maryland. During FY 2005, MIEMSS staff reviewed the 2001 Health and Medical WMD Plan and prepared an assessment.
- Drafted a $6.9 million grant for patient tracking systems and supporting infrastructure in the National Capital Region. The grant was awarded to Prince George's Health Department. MIEMSS has entered into a partnership to implement that project.
- Managed the Facility Resource Emergency Database (FRED), which continues to be used regularly to alert emergency medical services, hospitals, and public health agencies and allows for the effective use of available resources during emergency events and exercises. In FY 2005, FRED was expanded to Delaware. There were 10 FRED Alerts during FY 2005 for such incidents as a gas

leak in Baltimore City in August 2004, last year's flu vaccine shortage, and emergency department overcrowding.

• During preparation for potential disasters and actual emergency occurrences, a MIEMSS Field Operational Support Team (FOST) has provided support to federal, state, and local agencies, as well as hospitals, for the coordination of resources. Staff participated in the following exercise during FY 2005:

Baltimore County Light Rail with Chemical Release;
HarborBASE and Primer II Regional Bioterrorism Exercises;
Allegany County Industrial Plant Explosion;
Freestate/Designated Hitter at Camden Yards;
BWI EPLEX at BWI Airport.

In addition, they responded to or were on standby for 10 real incidents, such as President Reagan's funeral, the mass-vehicle crash on I-95 involving 92 vehicles along an 11-mile stretch on October 16, 2004, and the Iraqi elections held in Prince George's County.

• MIEMSS continues to partner with the Maryland Department of Health and Mental Hygiene (DHMH) in participating in the Strategic National Stockpile Program. In addition, the partners completed the implementation of the "Chempack" program, which strategically preplaces federally owned caches of nerve antidote agent in the state. During FY 2005, MIEMSS placed Chempack chemical antidote stockpiles at 23 EMS and 14 hospital sites around the state.

• Continued to support the distribution of bioterrorism cooperative agreement funding provided by DHMH to local emergency medical services operations to enhance their ability to respond and provide care.

• Provided representation on the Governor's Senior Homeland Security Group and, when appropriate, provided risk-based information to EMS organizations and hospitals.

• Participated in numerous planning sessions. For example, the office participated with the Maryland Emergency Management Agency (MEMA) to plan for the adoption of the National Incident Management System (NIMS) in Maryland and plan the required training. Office staff also participated in the planning for the first All Hazards Forum at the Baltimore Convention Center. The Office assisted in the planning for medical coverage of the Presidential Inauguration in January 2005, and provided EMS coverage for the Chempacks and staffed medical command centers. In addition, it participated in the development of the National Capital Region (NCR) Health Care Surge plan, drafting the EMS and Health Information Group sections.

• A planner was hired to begin to assess the status of the Health and Medical WMD plan.

• In the area of education, Office staff gave a presentation on Disaster Preparedness/FRED at the annual Life Span Leadership Conference for Nursing Homes. It also participated in Emergency Alerting and Messaging standard setting conferences with the Department of Homeland Security Office of Science and Technology. In addition, staff attended the National Disaster Medical System (NDMS) annual conference in Florida to assist in the establishment of the Maryland NDMS Reception Plan. Staff also attended the National Fire Academy Incident Command System (ICS) for EMS and the Fire Service Train the Trainer Program, and made a significant contribution to ensure those programs met the needs for NIMS compliance.

• The office established the NCR Health and Medical Technology Working Group to assist with the Patient Tracking Project and other technology issues. It also participated in the NCR Family Assistance Center project to ensure that patient information interfaces appropriately.

• During FY 2005, the office supported the establishment of the Baltimore Urban Area Security Initiative (UASI) Health and Medical Committee to review health and medical proposals for the Baltimore UASI funds.

GOVERNMENT AFFAIRS

MIEMSS Government Affairs works with Maryland government's Legislative and Executive branches on issues that affect various components of the statewide EMS System and its providers. During the past year, MIEMSS focused special attention on improving protection from bloodborne pathogens for EMS and fire personnel. Working with key legislators and a coalition of EMS, fire, and health care workers, including the Maryland State Firemen's Association, the Maryland DC Firefighters Association, the Maryland Nurses Association, MedChi, the Maryland Chapter of the American College of Emergency Physicians, and the Association of Professionals in Infection Control and Epidemiology, MIEMSS helped secure passage of legislation that allows testing of a patient for

human immunodeficiency virus (HIV) when a health care worker caring for the patient is exposed to the patient's blood, but the patient refuses to be tested for HIV.

This legislation was important not only for Maryland EMS providers, but also for all health care providers in Maryland. Maryland's health care providers, including EMS and fire, are frequently exposed to blood and other bodily fluids when they care for ill or injured patients. Despite universal precautions, these workers can be exposed to a patient's blood or bodily fluids that may contain HIV. In this situation, the patient's blood needs to be tested to determine whether HIV is present: if the patient's blood tests positive for HIV, the health care worker can receive necessary treatments; however, if no HIV is detected, the health care worker need not undergo these costly treatments which often cause serious side effects. While Maryland law allowed testing a patient's blood after an exposure when the patient is unable or unavailable to consent to testing, the law did not address the situation that arises when a patient refuses to consent to testing.

The new law, which becomes effective in October 2005, allows testing of an available sample of the patient's blood that was previously drawn for other testing purposes when a health care worker has been exposed to that blood, but the patient refuses to be tested. The law also adds "public safety workers" to the list of those who can require HIV testing (defined as "career or volunteer member of a fire, rescue, or EMS department, company squad or auxiliary; any law enforcement officer; or state fire marshal or sworn member of state fire marshal's office) and requires MIEMSS and the Department of Health and Mental Hygiene to collect and report data on exposures and refusals to consent to testing.

This new law will help ensure that EMS providers, public safety workers, and health care workers who have suffered an exposure can receive rapid, accurate information about source patient HIV status to make the best decision about drug and therapy alternatives to effectively treat the viral exposure.

HOSPITAL PROGRAMS OFFICE

Mission: To implement the designation and verification processes for trauma and specialty referral centers, to provide continuing evaluation of these centers for compliance with the regulations and standards in COMAR 30.08 et seq., and to ensure ongoing quality monitoring of the trauma/specialty care system.

The Hospital Programs staff continued to manage and coordinate quality monitoring activities for the trauma/specialty care system. Key components of the ongoing monitoring activities are the trauma registry data analysis, monthly meetings with the Maryland Trauma and Specialty Care Quality Improvement Committee, and case-specific follow-up on consumer complaints.

The office staff coordinated the reverification and designation process for the Johns Hopkins Hospital Children's Center Pediatric Trauma Center that was completed in May 2005. The process involved accepting and reviewing the trauma center application, obtaining an out-of-state review team, site visit, writing the report of findings, and notifying the center of the report findings.

The office staff has collaborated with the Maryland Health Care Commission and the Maryland Trauma Network to implement physician reimbursement for uncompensated trauma care under SB 479.

The office was successful in obtaining a $40,000 grant from the Health Resources and Services Administration (HRSA) Trauma-EMS Systems State Planning Grant for a third year. The purpose of this grant was to purchase the new "Outcomes" Software to enhance quality improvement activities at the 11 adult and pediatric trauma centers and to review, revise, and update the data elements contained in the Maryland Trauma Registry.

A grant application was submitted to HRSA in April 2005 with a request of $40,000 to develop a new EMS/ Trauma Plan for Maryland.

In addition, the office staff collaborated with District 8, Maryland Nurses' Association and the Department of Health and Mental Hygiene Office of Epidemiology and Disease Control Program to co-sponsor a continuing education program, "Emerging & Resurging Infectious Diseases: Threats to Nurses, Healthcare System, and the Public." This conference was held in Frederick, Maryland.

INFORMATION TECHNOLOGY

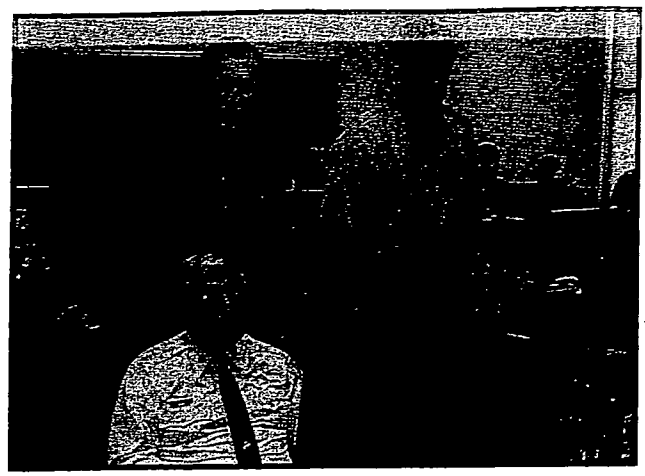
Mission: To provide leadership, expertise, and coordination in information systems, data management, networking, and application development relating to emergency medical services systems.

Rollout of EMAIS (Electronic Maryland Ambulance Information System), designed to replace the current paper runsheet with a computer software application, continued. Currently, commercial, paid, and volunteer EMS providers fill out more than 500,000 paper MAIS runsheets each year. EMAIS will save money, improve the quality of the data, and shorten the time to submit data to MIEMSS. EMAIS went "live" on July 1, 2004 in five jurisdictions. As of June 30, 2005, EMAIS has been implemented in 15 jurisdictions (Allegany, Annapolis City, APG, Calvert, Charles, Cecil, Dorchester, Frederick, Garrett, Harford, Kent, Queen Anne's, Somerset, Talbot, and Washington). MIEMSS is slated to implement EMAIS in four additional jurisdictions by December 2005.

MIEMSS also implemented several other web-based systems enhancements during FY 2005:

- *Universal Login System (ULS).* With MIEMSS expanding its web-based applications, a system was needed to allow users to log into a single portal to access all available applications. ULS allows a user to log into the MIEMSS web-based system and controls access/functionality based on each user's rights to each application.
- *Expanded ConEd Reports.* MIEMSS expanded the existing web-based Continuing Education (ConEd) reports. Prior to this, jurisdictions had to request all reports from MIEMSS, with the reports being run by staff. Now authorized jurisdictional reps with proper rights through ULS can run the reports themselves online. This is a huge time savings for the MIEMSS staff and allows faster turnaround of reports back to the jurisdictions.

The County Hospital Alert Tracking System (CHATS) tracks six different alert types for the hospitals and jurisdictions of all regions in Maryland. The data help identify emergency department overcrowding as it occurs, so that ambulances may be redirected to less crowded facilities, as needed. Participating hospitals and the public are able to view the status of the hospitals at all times via the MIEMSS external web page.



MIEMSS continues to use its web-based system called FRED (Facility Resource Emergency Database). This was developed in response to the 9/11 tragedy. During any disaster or emergency, MIEMSS would contact hospitals for a status of available beds. The time for the hospitals to respond would vary, depending on numerous factors, but it could take many hours for all hospitals to respond. FRED allows MIEMSS to send an alert to all hospitals requesting an update on their current status. This includes not only beds, but also staffing and medications, as well as information from the local jurisdictions regarding EMS staffing. FRED will reduce the time it takes to collect this data and make the process more efficient. FRED version 2.0 was implemented in April 2004. Version 2.0 has many additional features that give tighter control over who gets alerts, how the alerts are sent, and what data points are collected.

The Information Technology Department continued optical character recognition (OCR) scanning during FY 2005 to convert paper records to electronic images. By scanning and capturing images of prehospital care forms, it is possible to link the electronic images of records to the MAIS database. Linking images to database records will make available for review the text portions of the forms that are not otherwise captured electronically. As of June 2005, MIEMSS has successfully OCR-scanned over 2,850,000 MAIS forms.

MARYLAND CRITICAL INCIDENT STRESS MANAGEMENT PROGRAM

Mission: To offer psychological support services to firefighters, emergency medical technicians, police, and other emergency services personnel involved in emergency operations under extreme stress, to minimize the impact of job-related stress, and to help accelerate recovery of those persons exhibiting symptoms of severe stress reaction.

The Maryland Critical Incident Stress Management (MCISM) program offers education, defusings, and debriefings conducted by a statewide team of trained volunteers. The team consists of volunteer doctoral or master-level psychosocial clinicians interested in working with emergency services personnel, and fire/rescue/law enforcement peer-support persons trained in the process. Volunteer regional coordinators are responsible for specific geographic areas of the state and serve as the points of contact, through local 9-1-1 centers and SYSCOM, for critical incident stress management.

MEDICAL DIRECTOR'S OFFICE

Mission: To provide leadership and coordination for state medical programs, protocols, and quality assurance, to liaison with the regional programs and clinical facilities, and to promote creative, responsive, and scientifically sound programs for the delivery of medical care to all citizens.

The Office of the Medical Director was invited to Allegany, Garrett, and Kent counties to conduct or participate in a SWOT (Strengths, Weaknesses, Opportunities, and Threats) process to address selective EMS issues to improve the delivery of prehospital medical care. The Allegany County SWOT task force has been working cooperatively for months and has outlined issues involving two of the three goals that need to be addressed per the County Commission. The Garrett County SWOT task force has already initiated several programs to improve ALS unit availability and timely response while continuing to address the County Commission's desire for short- and long-term plans. The Kent County SWOT task force is nearing completion of its immediate, short- and long-term plans in response to the County Commissioners' challenges. The Kent County SWOT analyses have improved the following: county-wide billing practices and financial solvency, augmentation of the county-paid ALS chase car program and increased chase vehicle deployment in cooperative fashion leading to improved response times and delegation of EMS/fire responsibilities. These SWOT processes have fostered the process of building consensus and cooperation.

The Office of the Medical Director and other MIEMSS staff have provided comprehensive education on Maryland's EMS/Trauma system to guests of the U.S. Secretary of State and foreign dignitaries. Health, trauma, and political officials from Bosnia, Brazil, Britain, China, Columbia, Denmark, Germany, Greece, Hong Kong, Israel, Italy, Japan, Korea, Russia, Spain, and Tashkent, Uzbekistan, visited MIEMSS and several designated trauma/specialty referral institutions within Maryland. MIEMSS is viewed as an internationally recognized, quality, comprehensive EMS/Trauma system.

The Region III Medical Quality Improvement Committee (MQIC) has been actively looking at two critical issues: missed esophageal intubations and the patient who is left at the scene or who refuses care. The MCIQ has completed two extensive literature reviews and has applied them toward these issues. The MIQC has completed a draft endotracheal intubation checklist slated for testing this winter.

Throughout FY 2005, the Office of the Medical Director has been working with the Office of Information Technology on the deployment and implementation of the Electronic Maryland Ambulance Information System (EMAIS) system. Through direct EMS provider education with hands-on practice, more than 15 EMS operational programs have come online with EMAIS. Monies from the Critical Access Rural Health Grant provided essential printers, desktop, and laptop computer systems for completion of the patient care reports with EMAIS.

The Tenth Annual Medical Director Symposium was conducted with participation by regional, jurisdictional, and commercial ambulance service medical directors, as well as base station physician coordinators. The roles and responsibilities of the medical director relating to the state approval process of educational programs for EMS providers were discussed. The success of the educational program accreditation process was presented with an overview of the trends in success rates during the last 6 years. A Quality Assurance Report Card used by one jurisdiction was presented as a model that could be adopted by EMS Medical Directors and operational programs in other jurisdictions. In response to threats of international terrorism and chemical or biological releases, a comprehensive overview of the Strategic National Stockpile and the pre-deployed CHEMPACK was provided. The Medical Director Symposium also provided an opportunity for physician networking and exchange of chal-

lenges in open discussion sessions.

In February 2005, an update to the Maryland Medical Protocols for EMS Providers was distributed to the jurisdictions. The new protocols were developed after extensive review by the Protocol Review Committee. Effective July 1, 2005, the new protocols included the following:

• Modifications to the General Patient Care section focused on mode of transportation, including when aeromedical resources are recommended vs. ground transport, with references to the refinements made in the Trauma Decision Tree. During the protocol rollout training program, increased emphasis was placed on ensuring that geriatric patients meeting Trauma Decision Tree criteria are transported to Trauma Centers.

In pediatric fluid resuscitation, adjustments were made lowering the fluid bolus to 10 cc/kg to address the needs of the "volume sensitive child" who cannot tolerate aggressive fluid challenges.

• The ALTE or Apparent Life-Threatening Event protocol enables EMS providers to provide the right triage and the right treatment for infants and children under 2 years of age who have presented with serious symptoms that have resolved by the time EMS arrives. Infants and young children with the symptom complex of ALTE must be transported to a hospital to ensure that they do not have a serious underlying medical condition that could be life-threatening if not diagnosed and treated in a hospital.

• A Universal Pediatric Emergency Cardiac Care Algorithm (BLS and ALS) was implemented to facilitate providers accessing the correct cardiac-related pediatric protocol.

• Multiple minor dosing or annotation adjustments were made to reduce the risk of medication errors. (On the national level, an effort to reduce medication errors has led to improved standardization of annotation or formatting of dosing.)

• Ipecac and Sorbitol have been removed from the formulary for both BLS and ALS providers.

• A pain management protocol has been incorporated to improve the management of patients needing analgesia.

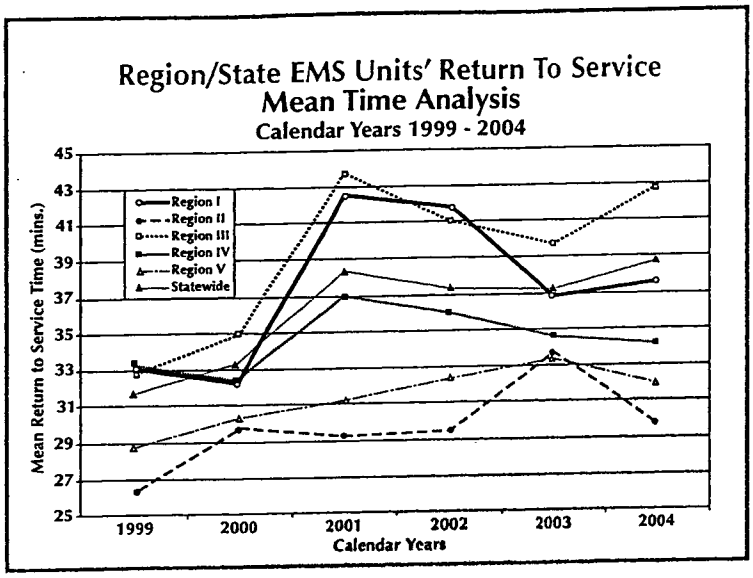
• Airway Management: Tracheostomy Change and Suction was added to the procedural section, with a training module in the protocol update rollout.

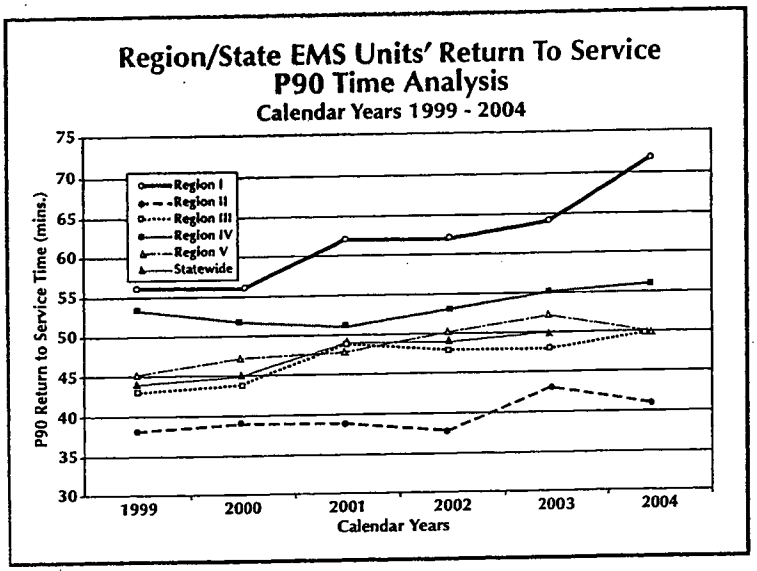
• Modifications were made to the Peripheral IV Access for CRT, CRT-I & EMT-P, and IV Option for EMT-B Approved EMS Operational Programs to address concerns and allow the re-establishment of an outpatient home-health-managed vasoactive medication.

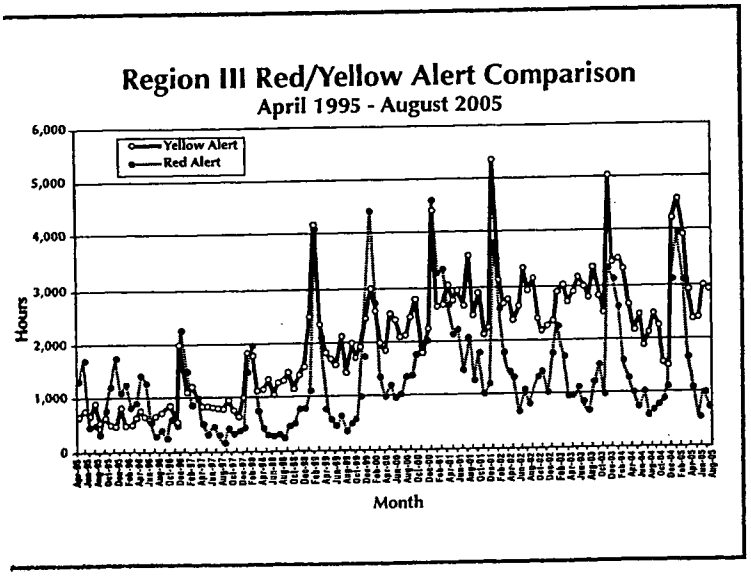
The Governor's Emergency Management Advisory Council (GEMAC) has had a very active Health and Medical Subcommittee (HMS). The MEMA Emergency Support Function #8 Health and Medical (ESF#8) has been incorporated into the HMS committee to reduce redundancy and to consolidate expertise. The HMS has established multiple Technical Advisory Groups (TAGs), the most notable of which are Surge Capacity, Law Enforcement (Intelligence Sharing), and Planning groups.

As part of Maryland's EMS/fire disaster preparedness, the Office of the Medical Director has participated in numerous national and state planning and educational programs. Maryland's EMS/fire and public health communities have conducted many disaster exercises to evaluate and improve existing plans. The most notable of these disaster exercises was BWI–EPLEX. Many EMS county operational programs, commercial ambulance services, and MIEMSS were involved both in planning and executing BWI–EPLEX, which simulated an Airbus 300 jet airliner with 140 patients crashing onto BWI airport. All the "patients" (including many moulaged volunteers) were assessed, triaged, managed, and evacuated in less than 2 hours from the time of the crash–an impressive response and integration of resources. The Office of the Medical Director, along with other MIEMSS staff, continues to provide essential resources, expertise, and training to the local EMS/fire services. In cooperation with the Maryland Department of Health and Mental Hygiene, it has been instrumental in the policy development and deployment of the EMS and hospital-based CHEMPACK antidote caches, each designed to manage over 1000 nerve-agent-exposed patients.

The Maryland Board of Nursing and the Maryland Board of Physicians have been actively training nurse and physician volunteers to augment their volunteer corps. The Office of the Medical Director has been actively involved in the delivery of training presentations for both boards–on bioterrorism for the Board of Nursing and on the principles of incident management systems for the Board of Physicians. The incident management presentation, through collaborative work







with Johns Hopkins Public Health, has become an internet-based distance learning program. More than 2,600 nurses and 850 physicians have been trained through this program which improves Maryland's preparedness in the event of a disaster.

PROGRAM DEVELOPMENT

Mission: To develop and implement policies, regulations, and programs for the enhancement and improvement of the statewide emergency medical services system and the community.

Yellow Alerts/Emergency Department Overcrowding

MIEMSS continues to monitor statewide alert activity via the County Hospital Alert Tracking System (CHATS) and provides monthly summary and year-end cumulative reports containing individual facility alert activity to all hospitals. Additionally, MIEMSS has begun monitoring emergency medical services (EMS) return to service times, defined as the amount of time a provider is at an emergency department (ED) with a patient before returning to service. Overall yellow alert utilization has decreased compared to previous years, but continues to remain a concern. Although yellow alert utilization decreased in 2004, EMS "return to service" times have increased. The 2004-2005 flu season alert utilization was slightly less elevated in comparison to the previous flu season which was particularly elevated with record peaks in selected regions of central Maryland. Continuous online availability of hospital alert activity status is available at www.miemss.org/chats.

Recent national studies have indicated that inpatient capacity and prolonged throughput times are the largest reason for ED delays. MIEMSS has begun meeting with hospitals individually to review hospital-specific data and discuss strategies available for improving inpatient capacity and prolonged throughput times, thus decreasing ED delays.

During EMS week in May, MIEMSS presented a Star of Life award to St. Joseph Medical Center for significantly reducing alert utilization and EMS turnaround times over the past year. MIEMSS hopes to be able to recognize other hospitals for their continued efforts at improving emergency department delays in the future. MIEMSS will be partnering with organizations

such as the Maryland Hospital Association, the Maryland Health Care Commission, the Maryland Department of Health & Mental Hygiene (DHMH) Office of Health Care Quality, the American College of Emergency Physicians, the Maryland State Firemen's Association, and jurisdictional EMS services to address best practices that focus on inpatient capacity and decreasing throughput times, thus shifting the emphasis from the ED to the entire hospital.

Lay Person Automated External Defibrillator Program

The Lay Person Automated External Defibrillator (AED) Program has continued to grow throughout Maryland. Under the "public access defibrillation" program, non-healthcare facilities that meet certain requirements are permitted to have an AED on site to be used by trained lay persons in the event of a sudden cardiac arrest until EMS arrives. Currently, there are more than 500 approved programs in the state totaling 1050 sites with AEDs. The Maryland Facility AED Program has had 24 successful AED uses out of 102 attempts for a 24% save rate. A list of AED facilities and program information can be viewed at www.miemss.org/AED.

The AED Task Force approved recommendations for statutory amendments to the AED statute during the 2005 session of the Maryland General Assembly. MIEMSS proposed departmental legislation that removes certain barriers and broadens the scope of the layperson AED program. HB 1054 passed and became effective July 1, 2005. The Task Force will continue to analyze data from the Maryland Out-of-Hospital Cardiac Arrest Report as it becomes available from the MIEMSS Office of Epidemiology in order to make recommendations for placement of AEDs in high-risk locations. Recommendations based on the data have included placement of AEDs in skilled nursing facilities and other high-risk locations identified in the report, such as rehabilitation centers and dialysis centers.

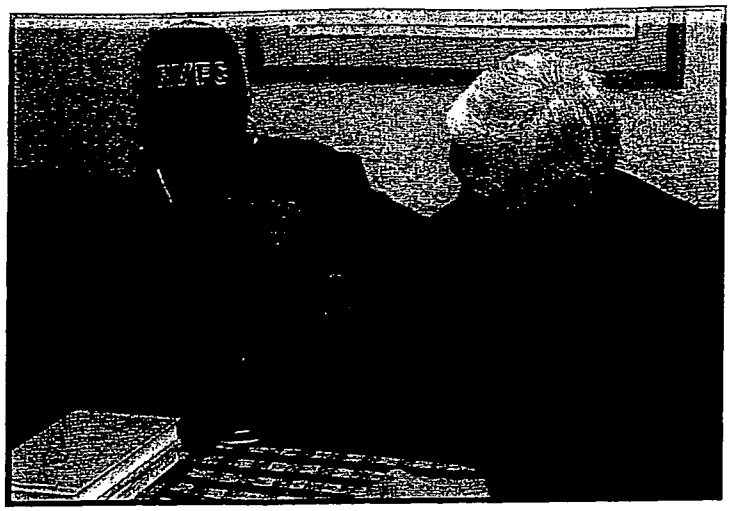
MIEMSS, in partnership with EMS services in 13 rural jurisdictions in Maryland, including Garrett, St. Mary's, Caroline, Dorchester, Kent, Somerset, Talbot, Wicomico, Calvert, Frederick, Carroll, Harford, and Worcester counties, again obtained funds through the federal Office of Rural Health Policy's FY 2004 Rural Access to Emergency Devices Grant Program. This allowed for the placement of 90 AEDs and numerous CPR and AED training sessions in EMS, public safety, and layperson sites, resulting in several hundred individuals being trained in CPR and AED use. A total of 293 AEDs have been placed in eligible rural jurisdictions since the first grant funds were awarded in 2002. MIEMSS has been awarded funds and will participate for the final year of the Rural Access to Emergency Devices Grant Program in FY 2005.

MIEMSS will again partner with several agencies along with the State Advisory Council on Heart Disease and Stroke in a public awareness campaign designed to educate citizens on the Chain of Survival. The campaign encourages learning CPR, how to use an AED, and developing public access defibrillation programs when appropriate. Last year's awareness effort was kicked off at the 2004 Baltimore Heart Walk at Rash Field in Baltimore's Inner Harbor with a proclamation from Governor Robert Ehrlich, Jr. that declared November 2004 "Partner with Us: Create a Heart Safe Community Month." The proclamation was read by Maryland's Secretary of Health, Anthony McCann, to more than 2000 Heart Walk participants. The council again plans to request that November 2005 be proclaimed "Partner with Us: Create a Heart Safe Community Month."

Geriatric Emergency Medical Services Advisory Committee

As part of an ongoing effort to maintain high-quality emergency medical care, MIEMSS has identified a need for geriatric-specific EMS educational programs, evaluation of geriatric emergency assessment guidelines and treatment protocols, and other relevant geriatric emergency management issues. In order to incorporate a geriatric-specific component into the Maryland EMS System, MIEMSS has established the Geriatric Emergency Medical Services Advisory Committee (GEMSAC), consisting of members with clinical knowledge and expertise in geriatric patient care. The committee's primary responsibilities include the evaluation of current geriatric assessment guidelines, recommendations for geriatric-specific protocol changes, and advisement on EMS geriatric educational curricula in the future.

The committee meets on a quarterly basis and includes representation from physicians and nurses specializing in geriatrics and emergency medicine,



EMS providers with geriatric clinical expertise and knowledge, and the Maryland Department of Aging.

Committee member David Chang, PhD and MIEMSS staff John New (Director of Quality Management) again gave a presentation entitled, "Triage of the Elderly Trauma Patient" at the annual Pyramid conference in October 2004 and at EMS Care 2005. A survey was also distributed to determine possible causes for the under-triage of elderly trauma patients. Dr. Chang was presented with the EMS-Geriatric Star of Life Award for his commitment in advancing the delivery of prehospital geriatric emergency care and his service on the GEMSAC.

PUBLIC INFORMATION AND MEDIA SERVICES

Mission: To contribute to MIEMSS' vision of eliminating preventable death and disability by providing to the public essential information on how to recognize an emergency, summon an EMS response, and incorporate injury prevention methods in their daily lives, as well as designing and developing educational programs for EMS providers through state-of-the-art technology.

The Office of Public Information and Media Services provides education and information to Maryland's Emergency Medical Services providers and the general public through training modules and informative programs. The office develops, designs, and produces programs that are distributed statewide.

The office is responsible for the design, photography, and editorial content of the MIEMSS Annual Report, MIEMSS web page, and the "Maryland EMS News." During FY 2005, seven issues of the newsletter were sent to 32,000 hospital and prehospital EMS personnel. The newsletter keeps emergency medical services personnel in touch with local, state, and national EMS issues. Recent topics included updates on Maryland legislation affecting EMS providers and geriatric medical issues. These documents are also available on the MIEMSS web page. A full revision of the Maryland EMS Protocols was completed, including editing, layout, and design. This year the annual EMS Week Stars of Life Awards Ceremony was held in Annapolis at the State House with the assistance of Governor Robert L. Ehrlich, Jr. In a special ceremony held prior to the Stars of Life ceremony, Governor Ehrlich also assisted with Awards for Children. This was done in recognition of the National EMS for Children Day. Press releases were distributed statewide and media coverage obtained on the award winners. Press releases were also produced on many EMS-related issues, including Yellow Alerts and hospital emergency department overcrowding. Department participation in the Washington Metropolitan Media Relations Council and the Baltimore Area Public Safety Media Council promotes good working relationships between the press and public safety public information officers.

The Office provides conference planning, as well as technical and audiovisual support to MIEMSS-sponsored continuing education programs. These regional and statewide conferences allow providers to update their certification and licensure by attending courses. Design and production of printed, photographic, computer-assisted programs, and video materials assist in the learning process.

The MIEMSS exhibit is utilized to spread information about the EMS System and prevention topics. It was in use at the Maryland State Firemen's Association (MSFA) Convention, many EMS conferences, open houses, the annual Maryland Association of Counties convention, and in Annapolis during the legislative session.

Several training modules were produced during the past year. These included "The 2005 Prehospital Protocol Update," "EMT-B Instructor Resource Program," Tracheostomy Care for All Ages," and "Child Passenger Safety for Health Care Facilities." These modules were produced on compact disc and include printed materials. The office provided satellite down-linking and taping of many informational programs, including topics such as infection control and WMD/Bioterrorism issues.

Video projects included the documentation of various disaster drill videos and several public service announcements (PSAs). Other projects included "Proper Occupant Protection for Children and

Adults," "Children Living with Household Poisons," in conjunction with the Maryland Poison Center, and the new EMS System video–"When Seconds Count, You Can Count on Maryland EMS." Working with the MSFA, the office staff produced the annual convention's Memorial Service program, video eulogies, and slide show. A PSA on Volunteer Recruitment and Retention was designed and produced with the MSFA, with the participation of Governor Ehrlich.

Statewide prevention initiatives were developed through partnerships with other state and local government agencies. Participation on the Occupant Protection Task Force, the Motorcycle Safety Task Force, the Pedestrian Safety Task Force, the Impaired Drivers Coalition, the American Red Cross Hometown Heroes Program, the Maryland Committee on Trauma, and the R Adams Cowley Shock Trauma Center Prevention Committee allowed these teams to work collaboratively on multiple projects. Membership on the State Highway's Diversity in Traffic Safety Program raised the awareness for diversity in public education efforts. Print and broadcast projects were produced in both Spanish and English. Projects were completed with representation of Maryland's growing diverse population.

QUALITY MANAGEMENT

Mission: To support MIEMSS and the EMS community in their continuous quality improvement initiatives and commitment to a customer-based way of doing business. Successfully accomplishing this is not simply dependent upon recognizing that the ultimate customer is a patient in need of timely, proficient, and compassionate care, but understanding and improving the processes that maintain a well functioning EMS system for the delivery of quality medical care.

MIEMSS initiated its quality management implementation through the development of a Juran-based program. Over the years MIEMSS has taken advantage of state supported resources, particularly those offered through the Continuous Quality Improvement and Managing for Results programs, in its efforts to improve upon its services and customer relationships.

Managing for Results (MFR)

For the past six years, covering two different gubernatorial administrations, MIEMSS, like all State agencies, is required to submit a Managing for Results (MFR) plan along with its fiscal year budget requests to the Maryland Department of Budget and Management. Initiated in 1997, this phased-in planning process began with the submission of MIEMSS Vision, Mission, and Principles statement through a customer-focus strategic planning process. MIEMSS has again met those requirements; these include re-evaluation of key goals, subsequent objectives and strategies, development of associate action plans, and establishment and monitoring of performance indicators.

MIEMSS has identified two strategic goals and seven associated objectives. Three objectives are outcome oriented, while the remaining four are quality-based indicators. Each objective included performance indicators, which will help both system and jurisdictional quality management initiatives in establishing benchmarks for future quality control and quality improvement efforts.

KEY GOALS AND OBJECTIVES

Goal 1. Provide high quality medical care to individuals receiving emergency medical services.

Objective 1.1 Maryland will maintain its trauma patient care performance above the national norm at a 95% or higher statistical level of confidence.

Objective 1.2 By 2005, maintain an overall inpatient complication rate of 10% or less for Maryland trauma centers.

Objective 1.3 Achieve 20% witnessed sudden cardiac arrest resuscitation upon emergency department (ED) arrival in 70% of jurisdictions by 2003.

Goal 2. Maintain a well-functioning emergency medical services system.

Objective 2.1 By 2003, all jurisdictions will use a uniform set of quality indicators for prioritized emergency medical dispatch (EMD) services.

Objective 2.2 Before 2003, x% of jurisdictions will achieve or exceed 90% compliance with prehospital provider standards of care per the "Maryland Medical Protocols."

Objective 2.3 Maintain an EMS response incident location to hospital base station communication at a successful completion rate of 95% or better.

Objective 2.4 Maintain at least an 85% rate for seriously injured patients transported to a designated trauma center in Maryland.

Team EMS

An innovative approach to Quality Management education and application in the real world of EMS management was developed in conjunction with the MIEMSS Region V administration. Implemented in 1996 and updated to present standards, MIEMSS staff and a cadre of volunteer presenters from the EMS community present ways for company and jurisdictional managers to plan for, measure, maintain, and improve quality services. Techniques taught range from brainstorming to data analysis interpretation and include topics from quality improvement team creation to meeting quality assurance standards established under state law. Jurisdictions and Regional EMS Advisory Councils have utilized this training for planning purposes, and more than 100 providers have attended workshops at Pyramid and EMS Care on a variety of subjects from indicator development to data interpretation.

Beginning in Calendar Year 2002, and in accordance with Title 30 regulations, all Maryland jurisdictional programs have implemented their own quality assurance/quality improvement plans. In this evolutionary process, Team EMS has provided the skills set for effective and continued success in meeting the goals of these plans. Particular interest has focused on the role of local QA/QM managers and the skills to be an effective quality leader. A one-day core curriculum was developed and presented to all QA/QM managers.

EMS Surveillance Measures

MIEMSS has established several EMS system surveillance priorities based upon routine data review, customer requests, and research outcomes. Hospital yellow alert demand is monitored daily on a regional basis to keep individual hospitals updated on system response. This monitoring (especially in the winter months) and individual hospital resolution to high emergency department (ED) service demand helped keep this vital service available system-wide. Joint work with the Johns Hopkins Department of Emergency Medicine has led to the analysis and publication of the effects of ED overcrowding and the EMS response. Additionally, triage of the geriatric trauma patient has undergone detailed analyses, and findings have been presented to the EMS community for the development of improvement strategies.

Special Needs

The maintenance of a plentiful, diverse, and stable EMS work force was addressed this year based on local and national experiences. An EMS provider survey initiated in the fall of 2004 resulted in 3000 responses. A final report will be issued this year that will provide prioritized recommendations for the improvement of recruitment and retention of EMS personnel.

Data Confidentiality

MIEMSS maintains or has access to eight confidential databases used in ensuring quality EMS care delivery. The Data Access and Research Committee (DARC) was formed to ensure that all data and information requests were expedited efficiently and accurately, while ensuring patient and provider confidentiality at all times. Since January 2000, over 1000 requests have been tracked and facilitated. Profiles of requestor, types, format, and content are reviewed at the end of each year so that MIEMSS' routine, non-confidential reports are modified to better meet the most common needs of data requestors.

REGIONAL PROGRAMS

Mission: To provide a liaison between the MIEMSS Central Office and the local EMS agencies, manage MIEMSS programs at the local level, work closely with the local governmental entities, training centers, emergency medical services/fire providers, and staff the Regional EMS Advisory Councils.

Region I

The MIEMSS Region I Office developed a report for the Region I EMS Advisory Council on the status of Allegany and Garrett counties' EMS systems. The report was presented to the County Commissioners and resulted in their request for MIEMSS to conduct a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis. In addition, the commissioners requested both short- and long-range plans on the development of EMS for their counties. The SWOT process began in February 2005 under the direction of Dr. Richard Alcorta, State EMS Medical Director.

The Region I Office coordinated the solicitation and prioritization of numerous grants for the EMS/fire community. Included in these were:

- **Highway Safety Grants**–Grant projects totaling $56,000 were implemented for auto extri-

cations, scene safety and communications, and medical equipment. Ken May, Transportation Chairman, coordinated these grants.

• **Matching Hardship Grants**–Deep Creek VFC, Orleans Volunteer VFD, the City of Cumberland Fire Department, Cresaptown, Good Will VFD, Oldtown VFD, and Tri-Towns VFD received 50% funding for automated external defibrillators (AEDs) and monitor defibrillators.

• **Access AED**–$14,000 was provided for Garrett County to place AEDs at the Chamber of Commerce, Garrett Community College, Southern Middle School, Northern Middle Oakland Senior Citizen Center and the Cherry Hill Assisted Living Center. The AED Coordinator for this project was Phil Rook.

• **Bioterrorism Grants**–Fourteen companies requested funding for the MIEMSS Bioterrorism grants. These grants were consolidated to eight, and projects totaling $84,000 were funded at 100%. In the spring of 2005 an additional $40,000 was made available for communication enhancements in Allegany County and for personal protection equipment and radios in Garrett County. An additional Bioterrorism grant was funded through a collaborative request from EMS and hospitals. Funds totaling $66,000 were used for personal protection equipment and training disaster drills in the region.

• **Bystander Care Program**–A special Highway Safety grant to develop a Bystander Care Program was awarded to Region I in the amount of $75,000. This project will provide training to private citizens on appropriate procedures for responding to highway crashes and administering life-saving emergency medical care prior to the arrival of traditional EMS units. Doug Beitzel was hired as the Bystander Care Coordinator and during this reporting period developed the curriculum, student booklets, and instructor manuals.

The Region I Office was active in preparation for response to weapons of mass destruction projects. In addition to the grants listed above, the Region I Administrator staffed the Regional Affairs Committee, which refined the funding formula for distribution of funds statewide that are provided through the Health Resources & Services Administration (HRSA). All agencies involved in WMD planning are now invited to Region I Advisory Council meetings to report on their activities. This regional approach in sharing information was found to be extremely useful for the coordination of equipment purchases and training

activities. The Region I Office also participated with the WMD jurisdictional planning groups in Allegany and Garrett counties.

In relation to bioterrorism preparedness, the Region I Office assisted the Allegany County Local Emergency Planning Committee with their October 23, 2004 drill at the Warrior Electrical Power Plant. This drill, which involved numerous victims, tested the county's ability to respond to a terrorism attack. MIEMSS' participation in the drill included support for moulage and evaluation. In Garrett County, the Regional Office is involved with the County's Emergency Management Office in planning for a drill that will be held in the fall of 2006.

Numerous training activities were initiated by the Region I Office. The primary emphasis was based on the Miltenberger Emergency Services Seminar. The seminar was held on March 19 at the Rocky Gap Lodge and attracted over 200 participants. The conference is unique in that it provides training for fire, EMS, and nursing personnel. Other training activities involved assisting in setting up a trauma training program originating from the R Adams Cowley Shock Trauma Center and video-conferenced to Cumberland Memorial Hospital. The office also assisted in obtaining MIEMSS video support for an ice rescue class conducted by Garrett College under the instruction of John Frank from the Department of Natural Resources.

The Region I Office staffed the Voluntary Ambulance Inspection Program (VAIP)–Seal of Excellence Update Committee. Activities included the review of the current status of VAIP across the state, updating the standards to conform to the Maryland Medical Protocols, and presentation of the recommended changes to the Regional Medical Directors. The final draft of the updated Seal of Excellence was completed on June 30, 2005.

The Region I Office worked with the Allegany Fire and Rescue Board and the Garrett County EMS Committee to conduct ambulance inspec-

tions in the summer of 2004. All first-line ambulances were inspected. In addition to equipment listed in the VAIP standards, mechanical equipment capabilities, ALS monitor defibrillators, radio communications, and drug boxes were examined.

Region II

The Region II Office continues to be very active in the region's Quality Assurance and Quality Improvement programs and participates in all of the Jurisdictional Medical Review Committee meetings. The Regional Medical Review Committee established within the Region II EMS Advisory Council continues to discuss issues or initiatives and explore new ideas and technology that could affect or benefit the quality of patient care throughout the entire region.

The Region II Office has coordinated and will be completing the Voluntary Ambulance Inspection Program for 96 EMS response vehicles, including both ALS and BLS ambulances, engines, special units, and ALS "chase cars." Both Frederick and Washington counties in Region II have adopted the Maryland Voluntary Ambulance Inspection Program–Seal of Excellence as the standard for their annual inspection of vehicles providing EMS services. The Region II Administrator and the jurisdictions' highest EMS officials have been very active in the process of updating the Maryland Voluntary Ambulance Inspection Program.

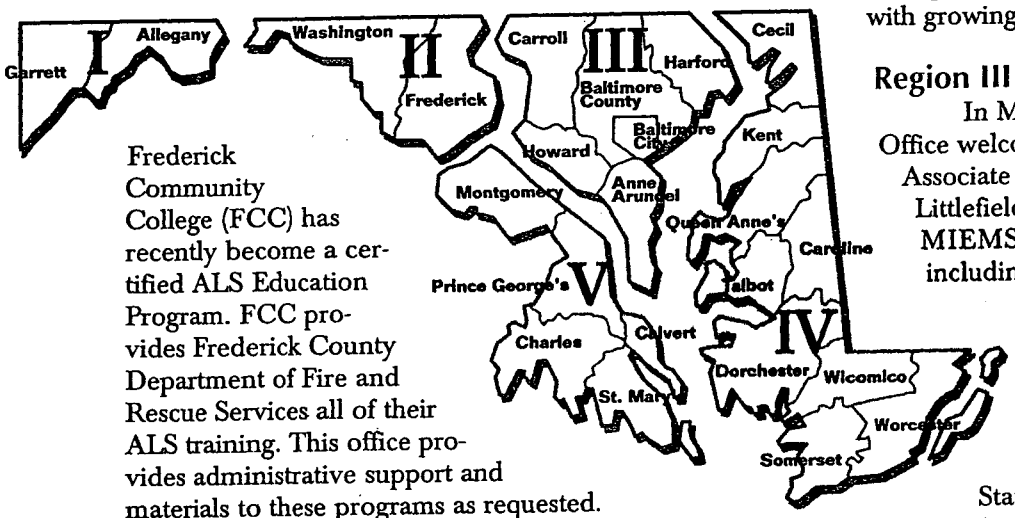
The Region II staff continues to be heavily involved in disaster preparation across the state at the local, regional, and state levels. The office has provided assistance on mass casualty exercise planning and implementation through both presentations and guidance. The concept of interagency cooperation and communication, and principles of continuous quality improvement have been integrated into the design of mass casualty exercises so that each is evaluated, and the resulting data are used to further increase response capability and improve operations. Templates for drill organization and presentation have been developed that will allow local and regional groups to utilize proven processes and evaluation tools. A package that includes flow charts, victim and provider accountability, and other management and training tools, as well as loaner vests, has been made available throughout the state. The Region II Administrator and his Office have actively participated and assisted 18 jurisdictions across the State with the planning, evaluation process, the organization of moulage, and the development of victim injury cards for their exercises. Both the Frederick Memorial Hospital and the Washington County Hospital have conducted drills throughout the year to plan for weapons of mass destruction (WMD) events (involving HAZMAT and decontamination of patients), as well as their routine, annual mass casualty management drills.

The MIEMSS Region II Office continues to provide support to the Maryland Virtual Emergency Response System (MVERS). This system provides an electronic plan that allows quick and easy access to information in order to expedite a response to a critical situation. MVERS has been developed and managed cooperatively between MIEMSS, the Maryland State Police (MSP), and the Maryland Emergency Management Agency (MEMA). The Region II Administrator, along with other MIEMSS staff and representatives from the three participating agencies, continue to make presentations to organizations interested in implementing the program. Training has been provided to organizations that need assistance in collecting specific data, conducting walk-throughs of facilities, taking digital images, and constructing the final plan for storage on a CD. The Maryland State Police has received Patriot Funds to provide support for the implementation of MVERS. The funds have been utilized to assist with gathering the electronic data, purchasing photographic equipment, and establishing a team of programmers to assist interested agencies with the process. While MIEMSS, through its EMS-Children program, will focus on implementing MVERS in schools, the program and training will be made available to any agency/organization upon request.

The Region II Office continues to provide the administrative support to the region for the annual Highway Safety Office Grant Program as well as the MIEMSS Matching and Hardship Grant Program for the acquisition of monitor-defibrillators and automated external defibrillators (AEDs). Every EMS, fire, and rescue company in Region II was provided with the appropriate instruction packets and applications. Region II was successful in having five grants approved. Three monitor-defibrillators and six AEDs were obtained through the MIEMSS Matching and Hardship Grant process. Through the Bioterrorism Sub-Grant and Special Project Grants, the region was approved for two regional grants for a total of $325,748 for equipment to be used in a mass casualty event or

to respond to a weapons of mass destruction incident.

Washington County Emergency Services and the Washington County Volunteer Fire and Rescue Association, as the EMS Operational Program for Washington County, have been identified as an ALS Education Program. This status will allow the EMS Operational Program to instruct individuals to the level of EMT-B, CRT, and Paramedic certification and to also provide recertification and continuing education instruction to providers. Hagerstown Community College has been very successful teaching EMS training curriculums and ALS and BLS certification courses, as well as several other medical/EMS-related ancillary programs to benefit EMS students. The MIEMSS Region II Administrator also serves on the EMS Curriculum Advisory Board of the Hagerstown Community College. The Frederick County Department of Fire and Rescue Services continue to instruct EMT-B level certification at their Training Academy.



Frederick Community College (FCC) has recently become a certified ALS Education Program. FCC provides Frederick County Department of Fire and Rescue Services all of their ALS training. This office provides administrative support and materials to these programs as requested.

The Region II Office continues to be a member and support the TriSate Hospital Coalition which includes hospitals and health departments from Maryland, Pennsylvania, and West Virginia. This coalition is currently developing a memorandum of understanding that would allow organizations to share resources, information, and personnel not only between counties but across state lines.

Region II this year administered certification examinations to 6 First Responder Basic classes and 8 EMT-B classes. In addition, 20 EMT-P, 11 EMT-B, 7 FR-B, and 16 CRT individual examinations were administered in the Region II Office.

This office worked with Region II EMS jurisdictions to qualify appropriate areas and communities in the region to receive AEDs at no cost under the Rural Access to Emergency Devices (RAED), a federal grant program managed by MIEMSS. This grant has been very beneficial in providing to the citizens in these areas access to the AED. AEDs have been distributed to the Hancock and Emmitsburg areas.

During EMS Week in May 2005, Edgar Crist, president of the Region II EMS Advisory Council, received the "Leon W. Hayes Award for Excellence in Emergency Medical Services." An EMT since the 1950s, Edger Crist has been continuously active in many capacities as an EMT and firefighter in Frederick County and Brunswick Fire Department.

In June 2005, Region II's Frederick County Department of Fire and Rescue Services implemented the Electronic Maryland Ambulance Information System (EMAIS). Washington County EMS providers continue to use EMAIS with growing success.

Region III

In March 2005, the Region III Office welcomed the addition of Associate Administrator Leah G. Littlefield. Ms. Littlefield came to MIEMSS with a diverse background, including service as a Lieutenant in the United States Army, volunteer hospital and EMS experience as an EMT-B, commercial ambulance experience, and work within various municipal and State government agencies.

The Region III Office continued to play a major role in the planning and execution of local area disaster preparedness exercises. In April 2005, BWI Airport conducted their Emergency Planning Exercise (EPLEX), in coordination with local fire, EMS, hazmat, law enforcement, commercial airline representatives, and government officials. Additionally, the Region III Office participated in the planning and execution of exercises with agencies such as the Maryland Transportation Authority, the National Study Center, Baltimore County Fire Department, and the University of Maryland Medical System.

In 2005, the MIEMSS Region III Office con-

tinued to provide administrative support to the region for the annual Highway Safety Office Grant Program, the MIEMSS Matching Hardship Grant Program, and the Maryland Bioterrorism Hospital Preparedness Program. In all, more than $420,000 in grant monies was dispersed to local jurisdictions through these grant programs.

In partnership with the Maryland Department of Health and Mental Hygiene and the Centers for Disease Control, MIEMSS was successful in placing both hospital and field Chempacks throughout Region III. Chempacks are pre-packaged, environmentally controlled medicinal supplies, designed to treat large volumes of patients in the event of a chemical attack. This endeavor has contributed to the ongoing efforts to increase disaster preparedness throughout the State of Maryland. The Region III EMS Advisory Council further expanded upon these efforts by creating an official position on the Council for representation from local health departments.

Region III continued to face the recurring problem of hospital overcrowding. While overall yellow alert usage was slightly decreased from previous years, the hospital wait times experienced during the winter illness season are still of great concern. A work group was convened to initiate policy changes that may afford improvement. Continuous data monitoring has enabled the work group to identify specific problem areas, which can be communicated to individual hospitals in an effort to alleviate congestion.

In October 2004, Harford County became the first jurisdiction in Region III to implement the Electronic Maryland Ambulance Information System (EMAIS). The Region III Office assisted in the coordination of EMAIS training for all county providers and has continued to serve as a liaison for EMAIS issues.

Two Region III Associate Medical Directors were selected in 2005, to provide assistance to Region III Medical Director Dr. Kevin Seaman. Dr. Ricardo Collella and Dr. Donald W. Alves were chosen and voted upon by the Region III Council. The addition of these two Associate Medical Directors has increased physician involvement with the Council and throughout the Region. Furthermore, it has enabled the medical directors to meet the increasing demand for Hospital Base Station courses throughout Region III.

The Emergency Education Council of Region III has continued with their ongoing commitment to education. During EMS Week 2005, the Education Council and Mercy Medical Center co-sponsored an educational opportunity for prehospital providers on the management of suspected victims of sexual assault. The program was offered on two occasions and was presented by Joyce Faust, RN, FNE-A. Ms. Faust is the Assistant Coordinator of the Sexual Assault Forensic Examiner (SAFE) Program at Mercy Medical Center and brought a wealth of knowledge and experience to the EMS community. Additionally, the Emergency Education Council of Region III prioritized and coordinated the distribution of funding for EMS educational programs to provide initial ALS training, as well as continuing education for both ALS and BLS providers. The group continues to meet quarterly to improve the quality and efficiency of training efforts throughout the Region.

Various members of the Region III Education Council, as well as education and training officers from local jurisdictions, met with representatives from the *Journal of Emergency Medical Services (JEMS)* to begin planning for the annual EMS Today JEMS conference, to be held in Baltimore in March 2006. The conference planning team will continue to work closely with local representatives to establish a program that is both informative and relevant to Maryland EMS providers.

The Region III Quality Improvement Managers Committee continued to work on the development of an evaluation tool for field use when patient-initiated refusals are encountered. A data sample that was reviewed by the committee revealed that there is an alarmingly high rate of patient refusals in the Region. In 2005, the Committee, chaired by Dr. Kevin Seaman, constructed a form that is currently being finalized for field pilot use. This tool will assist prehospital providers in assessing patients who are wishing to refuse treatment or transport, in hopes of persuading them to accept EMS services.

Written testing and ambulance inspections also continued throughout the year with the Region III Office conducting 65 examinations and over 100 vehicle inspections.

Region IV

The Region IV EMS Advisory Council prioritized 18 requests for Maryland Department of Transportation Highway Safety Grants. In addition, matching grants from MIEMSS assisted with