MIEMSS: MISSION/VISION/KEY GOALS

The Maryland Institute for Emergency Medical Services Systems (MIEMSS) oversees and coordinates all components of the statewide EMS system (including planning, operations, evaluation, and research), provides leadership and medical direction, conducts and/or supports EMS educational programs, operates and maintains a statewide communications system, designates trauma and specialty centers, licenses and regulates commercial ambulance services, and participates in EMS-related public education and prevention programs.

MIEMSS provides the executive support for the EMS Board in reviewing and approving the budgets for agencies receiving funds from the EMS Operations Fund, developing and promulgating regulations and protocols, proposing EMS system legislation, licensing/certifying and disciplining EMS providers, and conducting other EMS Board business. MIEMSS also provides the administrative and staff support for the Statewide EMS Advisory Council (SEMSAC) and five EMS regional councils.

MISSION

Consistent with Maryland law and guided by the EMS Plan, to provide the resources (communications, infrastructure, grants, and training), leadership (vision, expertise, and coordination), and oversight (medical, regulatory, and administrative) necessary for Maryland's statewide emergency medical services (EMS) system to function optimally and to provide effective care to patients by reducing preventable deaths, disability, and discomfort.

VISION

To be a state EMS system acknowledged as a leader for providing the highest quality patient care and that is sought out to help other EMS systems attain the same level of quality care.

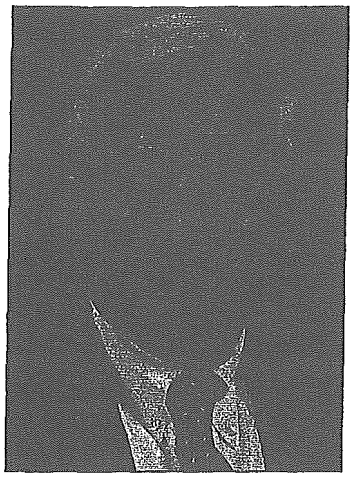
KEY GOALS

- Provide high quality medical care to individuals receiving emergency medical services.
- Maintain a well-functioning emergency medical services system.

2004–2005 ANNUAL REPORT

CONTENTS

FROM THE EMS BOARD CHAIRMAN



Donald L. DeVries, Jr., Esq.
Chairman, EMS Board

It is an honor for me to serve as Chairman of the Emergency Medical Services Board, a position I have enjoyed since 1993. I have had the opportunity to meet and work with so many dedicated and knowledgeable individuals, and I am proud to play a role in the development of the emergency medical services system in Maryland. EMS has come a long way since the passage of House Bill 1222 in 1993.

House Bill 1222 created the EMS Board, its membership representing a wide range of talents and backgrounds, including EMS and trauma care physicians, a nurse with experience in the clinical care of trauma patients, career and volunteer providers with experience in the delivery of emergency medical services, a hospital administrator, a designee of the Department of Health and Mental Hygiene, a representative from the University of Maryland at Baltimore, the chair of the Statewide EMS Advisory Council, and two from "the public at large," including one from a smaller jurisdiction.

The Board has a broad array of responsibilities related to the coordination of EMS in Maryland. It has budgetary responsibilities for the agencies supported by the EMS Operations Fund, programmatic responsibilities that include monitoring the activities of the EMS system, providing policy recommendations to improve the EMS system, developing an EMS plan and adopting regulations to implement the plan, and providing direction to the Maryland Institute for Emergency Medical Services Systems and the Executive Director of the agency in fulfilling their duties.

But beyond the regulatory authority and leadership role defined in the law, the EMS Board has been driven by the ideal of "cooperative excellence." This is not a term found in the EMS Law, but it is one that was adopted "off the record" at our first meeting in July 1993. It was clear to us that in Maryland there were so many capable and experienced people and systems that we do not want to be in a position of dictating policy. Through MIEMSS and the Statewide EMS Advisory Council, a pyramid of committees has been developed that has served to create consensus before adopting policy and regulation. I believe this system has worked extraordinarily well.

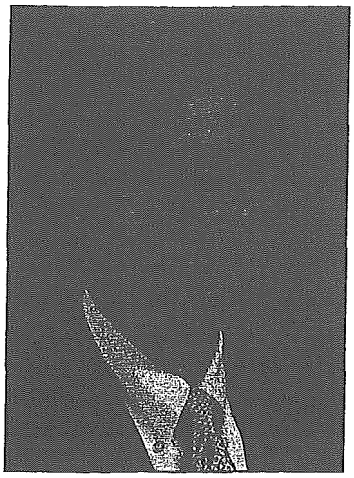
This consensus-building strategy has been successful in large part because the membership of the EMS Board has embraced it. We have also been very fortunate that our membership has dedicated long hours and many years to the goals of the Board and EMS in Maryland. A number of Board members have been with us since its inception in 1993 and all have been long-standing members of the EMS community and I am proud to serve with them.

I would like to honor the EMS Board by dedicating this edition of the Annual Report to them, and in particular to the following members who have recently left the Board after many years of dedicated and valued service:

- J. Andrew Sumner, MD
- Dorothy W. Dyott, RN
- Chief John R. Frazier
- John M. Murphy
- Richard L. Yinger

We will be forever grateful to the contributions of these individuals and look forward to their continued involvement in Maryland EMS!

MIEMSS
FROM THE EXECUTIVE DIRECTOR



Robert R. Bass, MD, FACEP
Executive Director, MIEMSS

As we prepare to finalize and present MIEMSS 2004-2005 Annual Report, our thoughts are diverted to unfolding events along the shores of Louisiana, Mississippi, and Alabama. The impact of Hurricane Katrina will persist for years and will be felt nationwide. This event demonstrates the importance of coordinating local, state, and national responses to catastrophic events and of ensuring that sufficient resources are available to respond to the events. National focus has been on Washington, D.C., New York City, and other major metropolitan areas, but the cross hairs of crisis can settle anywhere. There will be untold lessons coming out of this event, but it is becoming clear that much remains to be done in the area of EMS response and homeland security. Our hopes, thoughts, and prayers are with the victims and those who are tending to them.

Contained in this Annual Report are information and data that I hope provide a flavor for the breadth of our activities. In partnership with our "sister" agencies supported by the EMS Operations Fund (that is, the Maryland Fire and Rescue Institute, the R Adams Cowley Shock Trauma Center, and the Department of Maryland State Police, with the local fire and rescue and medical communities), we continue working toward enhancing the capabilities and resources for emergency medical services in Maryland. Below are some of the highlights and current initiatives of MIEMSS, with more details in the text of the report that follows.

MIEMSS is in the midst of updating and revising the Statewide EMS Plan. While the 2004 evaluation of Maryland's statewide EMS system by the National Highway Traffic Safety Administration (NHTSA) was very complimentary, it did identify areas for future focus. One goal in revising the Plan is to integrate the goals and objectives of EMS within the larger arena of public health. As we have done in the past, MIEMSS will hold meetings in each EMS region of the state to solicit input from EMS providers, the public health and public safety communities, and others stakeholders.

Over the past several years, it has been recognized that one of the principal causes of Emergency Department (ED) overcrowding is the higher occupancy rates that arise as a result of the elimination of hospital beds in the 1990s. These higher occupancy rates prevent hospitals from admitting patients in a timely fashion and result in back-ups in the ED. I am pleased to report that since 2001 there has been a leveling off and a downward trend of yellow alert utilization in our Washington and Baltimore metropolitan regions. MIEMSS is now monitoring EMS return-to-service times, which have shown a similar downward trend until this past year. With support from the Maryland EMS community, MIEMSS is continuing to work with hospitals on recognizing the problem of extended emergency department wait times for EMS providers. MIEMSS and work groups within the regions are working to educate and enforce existing policies as a means of managing alerts.

The Electronic Maryland Ambulance Information System (EMAIS) continues to expand. As of June 1, 2005, there were 15 jurisdictions using EMAIS, with four additional counties scheduled for training and implementation before the end of 2005. MIEMSS has also introduced the EMAIS online reporting system, allowing supervisors and administrators to run EMAIS aggregate reports online over the Internet. The Office of the State Fire Marshal, in cooperation with MIEMSS, has contracted services to create a web-based Maryland Fire Incident Reporting System called MFIRS to be housed at MIEMSS. MFIRS is slated for rollout in the spring of 2006. We expect there will be additional opportunities in the future for streamlining both fire and EMS reporting systems while improving the accuracy and timeliness of data.

A joint effort between MIEMSS, the Maryland State Firemen's Association (MSFA), and the Office of the State Fire Marshal is the EMS for Children's RISK WATCH® program. Prevention activities arising out of this program target high-risk and high-frequency injuries to children from preschool through eighth grade. RISK WATCH® links teachers with community safety experts and parents. The effort focuses on fire and burn prevention, motor vehicle safety, bike and pedestrian safety, water safety, poison prevention, fall prevention, choking, suffocation and strangulation prevention, and firearm injury prevention. Preparedness for natural disasters is being added to this program which reaches over 3000 kids each year.

A statewide committee has been meeting to update the Voluntary Ambulance Inspection Program–Seal of Excellence. Utilizing feedback from the past two years, changes in the Maryland Medical Protocols, and a desire to streamline and simplify the inspection process, the committee has completed its work and the approval process, and the parameters of the update are being issued. A major change will be a reduction in the drug inventory to provide maximum advanced life support (ALS) care for one patient, as opposed to the previously required inventory for two patients. Participation in the voluntary inspection program continues to grow.

Throughout the country, EMS and fire services are struggling to maintain adequate numbers of providers. MIEMSS, through a Work Force Committee in cooperation with the MSFA and other EMS agencies and organizations, has been reviewing local, state, and national data to identify trends and solutions. The committee was challenged with identifying trends in EMS personnel management, including current practices regarding the assignment and utilization of the different levels of providers, as well as barriers and obstacles to recruitment and retention. In order to obtain a greater understanding of these challenges, a survey was distributed to EMS personnel throughout the state that focused on three specific areas: demographics of the EMS work force, influencing factors regarding satisfaction with the providers' EMS service/system, and a section that allowed the provider to list specific barriers to recruitment and retention. The goal of the Work Force Committee's report is to provide the data, information, and strategies necessary to foster recruitment and retention of EMS providers in Maryland. The report will be completed and made available in the fall.

MIEMSS is beginning an evaluation of existing jurisdictional processes for the credentialing of EMS providers affiliated with more than one EMS operational program. Through its Jurisdictional Advisory Committee, MIEMSS will identify current credentialing requirements of each jurisdiction. The goal of this effort is to identify best practices that may serve as a model for jurisdictions to facilitate the process for providers wishing to serve in multiple jurisdictions.

MIEMSS' role and efforts in the areas of WMD preparedness and EMS communications have escalated. MIEMSS is playing an important role in the local, state, and federal planning and is identifying and distributing resources made available to assist the state and local jurisdictions in this vital area. The Facility Resource Emergency Database (FRED) system continues to play a major role in the area of resource identification and use, and MIEMSS continues to refine and enhance its capabilities.

This is a sampling of the programs that MIEMSS is involved in to coordinate and facilitate emergency medical services in the state of Maryland. We invite you to read our report and to visit our web-page, www.miemss.org, for more information on the array of projects on our agenda. MIEMSS' EMS newsletter is now available only in electronic format–on the MIEMSS website and emailed to individuals who provide their email addresses. To ensure your automatic delivery of the newsletter, please go to the MIEMSS website, click on "Subscribe to the Maryland EMS News," and follow the directions by providing your name and current email address.

MIEMSS

ADMINISTRATION

Mission: To secure and effectively utilize financial and personnel resources that will enable MIEMSS to meet its goals and objectives in a manner that is consistent with state regulations and policies.

The Administration Office is responsible for the financial, purchasing, and human resources services of MIEMSS.

The finance staff is responsible for accounting processes to ensure that expenditures are in compliance with applicable regulations. The staff develops the budget, tracks and monitors expenditures, and performs year-end closing. The staff tracks special funds, grant funds, and reimbursable funds.

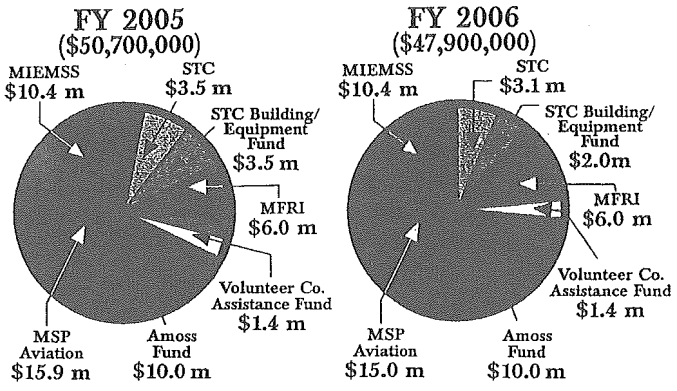
The purchasing staff procures all necessary supplies, materials, and services for the MIEMSS staff. It is also responsible for the timely payment of invoices.

The human resources staff is responsible for recruitment, timekeeping, payroll-related services, benefits and retirement coordination, personnel evaluation processes, and other traditional personnel functions.

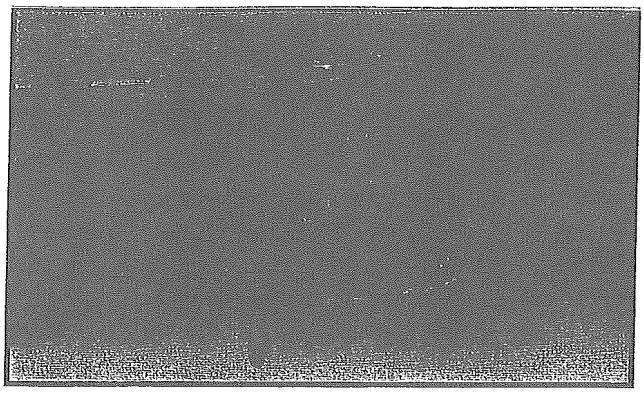
The Administration Office is also accountable for inventory control, fleet management, travel services, and building operations and maintenance.

MIEMSS FY 2005 budget information is displayed by state object code and department in the charts on page 5.

EMS Operations Fund



MFRI = Maryland Fire & Rescue Institute • STC = R Adams Cowley Shock Trauma Center
MSP = Maryland State Police



AEROMEDICAL OPERATIONS

Mission: To provide the physician medical support necessary for the Maryland State Police Aviation Command to meet the emergency helicopter needs of Maryland's citizens. The State Aeromedical Director is actively involved in the ongoing training and verification of skill proficiency for the State Police flight paramedics. He provides around the clock consultation support to SYSCOM for med-evac requests and medical direction and is actively involved in the development of new patient care protocols and the oversight of ongoing care.

In FY 2005 there were 5,409 patients transported by the Maryland State Police (MSP) Aviation Command. Of these patients, 5,126 (95%) were transported from the scene of injury at the request of the local fire services, and 283 (5%) were transported between hospitals to a higher level of care.

Types of calls included the following:

• Motor vehicle crashes	2,640
• Falls	657
• Pedestrians	293
• Gunshot wounds	125
• Assaults	107
• Stabbings	98
• Burns	96
• Industrial accidents	57
• Hand injuries	52
• Eye injuries	16
• Drownings	12
• Electrocutions	11
• Hyperbaric patients	11

Interfacility transports included the following types of patients:

• Trauma	147
• Medical	101
• Neonatal	35

On March 19, 2005, the Maryland State Police Aviation Command celebrated 35 years of providing med-evac service to the citizens of

Maryland. In addition to being the oldest medevac program in the country, Maryland is unique among the fifty states in ensuring that its medevac, search and rescue, and law enforcement services are available to all of its residents in a timely fashion, and are provided as a matter of public safety.

In FY 2005 the Aviation Command continued its participation in the Adult and Pediatric Rapid Sequence Intubation (RSI) pilot programs. Designed to address the needs of patients with severe head injuries, these RSI pilot protocols allow MSP flight paramedics to use neuromuscular blocking agents in the field to provide endotracheal intubation for patients who are not breathing adequately. In addition, intraosseous drills were introduced to ensure the ability to establish vascular access in critical patients for whom parenteral medications are required.

Scenario-based simulation training was again utilized for MSP flight paramedics in verification of advanced skill proficiency. These exercises, conducted at the United States Secret Service training facilities, allowed life-like simulation of patient care situations as would be faced by flight paramedics in the course of their normal duties.

ATTORNEY GENERAL'S OFFICE

Mission: To provide legal advice to the EMS Board, the Statewide EMS Advisory Council, and MIEMSS in connection with all aspects of emergency medical services, the ongoing administrative functions of the agency, and the regulation of commercial ambulance services. The Attorney General's Office also serves as the administrative prosecutor for cases involving allegations of prohibited acts by EMS providers before the EMS Provider Review Panel, the EMS Board, the Office of Administrative Hearings, and the courts.

During the past fiscal year, the Attorney General's Office continued to support MIEMSS in promulgating and implementing the agency's regulations, and procurement and contracts, including technology initiatives. Additionally, the Attorney General's Office assisted MIEMSS in developing its Regulatory Review Plan and continues to support MIEMSS in implementing the plan. The Attorney General's Office also provided support to MIEMSS throughout the legislative session.

The Attorney General's Office reviewed and prosecuted 24 cases of alleged prohibited acts by EMS providers.

MIEMSS FY 2005 EMS OPERATIONS FUND APPROPRIATION BY DEPARTMENT

Administrative Offices	
Executive Director, Legal Office	$569.350
Financial & Human Resources Administration	1,025,645
Planning/Program Development/Total Quality Management	378,390
Communications	
Equipment	876,083
Maintenance	1,223,817
EMRC/SYSCOM	945,472
Education/Public Information	
Education, Licensure, & Certification/Compliance	1,248,901
Public Information & Media Services	463,089
Emergency Health Services Program	93,500
Information Technology	1,103,001
Medical Services	
Office of Medical Director	603,326
Office of Hospital Programs	111,148
EMS-Children	161,399
Regional Administration	837,570
TOTAL	$10,177,272

MIEMSS FY 2005 EXPENDITURE BY OBJECT CODE (INCLUDES SPECIAL AND FEDERAL FUNDS)

FY 2005	Actual
Number of Positions	91.6
Salaries and Wages	$6,246,868
Technical/Special Fees	499,135
Communication	2,599,658
Travel	129,304
Fuel and Utilities	51,282
Motor Vehicle Operation and Maintenance	191,760
Contractual Services	1,640,768
Supplies and Materials	160,249
Equipment–Replacement	74,339
Equipment–Additional	184,227
Fixed Charges	85,929
Grants	1,855,618
Total Salary and Wages	$6,746,003
Total Operating Expenses	$6,972,934
Total Expenditure	$13,718,937

The Attorney General's Office participated in a variety of committees, task forces, and work groups, including the Infection Control Committee and the MIEMSS task force charged with developing the Electronic Maryland Ambulance Information System (EMAIS) to replace the current paper runsheet with a computer software application. The Attorney General's Office also participates in a work group of Assistant Attorneys General representing several state agencies studying the state's response to bioterrorism and other security issues.

The Attorney General's Office participated in and contributed materials to the Maryland Public Health Emergency Preparedness Program and Handbook.

The Attorney General's Office presented educational materials on the Health Insurance Portability & Accountability Act (HIPAA) Security regulations, and the role and responsibility of Medical Review Committees in the quality assurance process.

The Attorney General's Office assisted in the administration of state and federal grants and in a proposal to license the Electronic Maryland Ambulance Information System and the Maryland Fire Incident Reporting System to another state.

COMPLIANCE OFFICE

Mission: To ensure the health, safety, and welfare of the public as it relates to the delivery of emergency medical services by Emergency Medical Services Providers throughout Maryland. To that end, the Compliance Office is responsible for ensuring quality of care by investigating complaints and allegations of prohibited conduct.

The Compliance Office works closely with the Provider Review Panel (PRP) (the 13-member panel composed of all levels of EMS providers; physicians representing the Maryland Board of Physicians, the Maryland Medical Chirurgical Society, and the EMS Operational Program Medical Directors; the State EMS Medical Director; the MIEMSS Executive Director; the EMS Board; and the Attorney General's Office). The PRP reviews complaints, as well as the results of the investigations conducted by the Compliance Office, and recommends to the EMS Board any further action.

ACTIVITY REPORT OF THE INCIDENT REVIEW COMMITTEE (IRC), EMS PROVIDER REVIEW PANEL (PRP), AND THE EMS BOARD

• Incidents Reported to IRC	326
• IRC Investigations Initiated	230
• IRC Investigations Conducted	215
• IRC Investigations Continued	47
• IRC Complaints Forwarded to PRP	30
• Complaints Dismissed by PRP	2
• Complaints Forwarded to EMS Board	46

EMS Board Action

• Reprimands	3
• Probation	8
• Suspensions	10
• Revocations	3
• Remedial training	4
• Surrenders	3
• Evaluation	3
• Applications Denied	6
• Case Resolution Conferences	11
• Dismissed	2
• Counseling	0

DO NOT RESUSCITATE PROGRAM

The current EMS/DNR form is maintained on the MIEMSS website where it may be downloaded by the public for use. MIEMSS will also provide copies to individuals without access to the internet.

In FY 2005, the EMS/DNR program responded to approximately 1200 calls requesting copies of or information about the EMS/DNR form and provided 92 in-service trainings to health-care providers about the use of the forms. MIEMSS also provided approximately 6000 plastic EMS/DNR bracelets to patients and facilities in FY 2005.

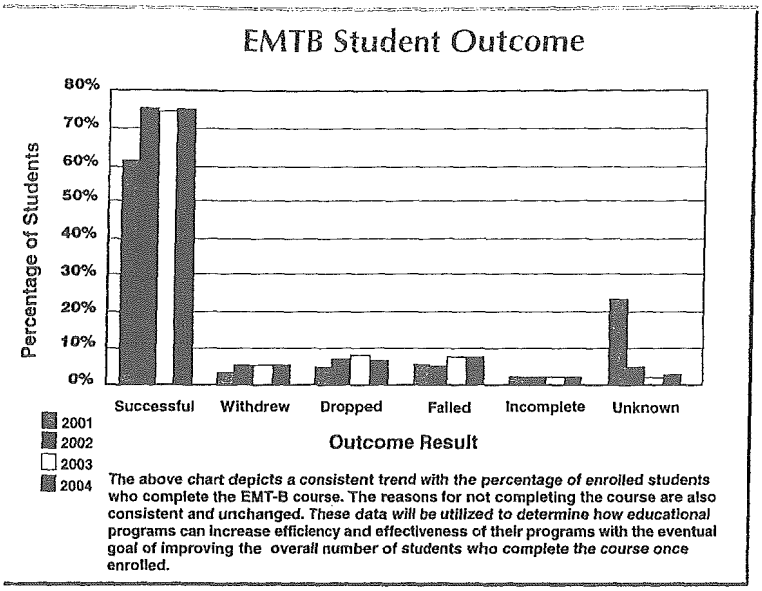
EDUCATION, LICENSURE, AND CERTIFICATION

Mission: To coordinate a variety of services to protect the public, and promote and facilitate the development of knowledgeable, skilled, and proficient prehospital professionals who deliver emergency care in the Maryland EMS system.

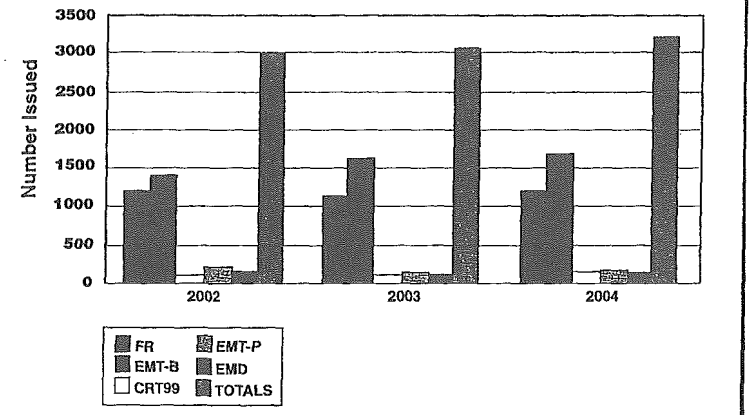
During FY 2005, the number of career, volunteer, and commercial prehospital providers in Maryland increased to a total of 30,154, with the following breakdown:

Throughout FY 2005, the Office had an increased workload and issued 3,227 licenses and

	FY 2004	FY 2005
First Responders	10,551	10,980
Emergency Medical Technicians - Basic	15,323	15,609
Cardiac Rescue Technicians	361	312
Cardiac Rescue Technicians – I (Intermediate)	252	342
Emergency Medical Technicians - Paramedic	2,192	2,180
Emergency Medical Dispatchers	873	731
TOTAL	**29,552**	**30,154**



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

[illegible]	[illegible]	[illegible]
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.

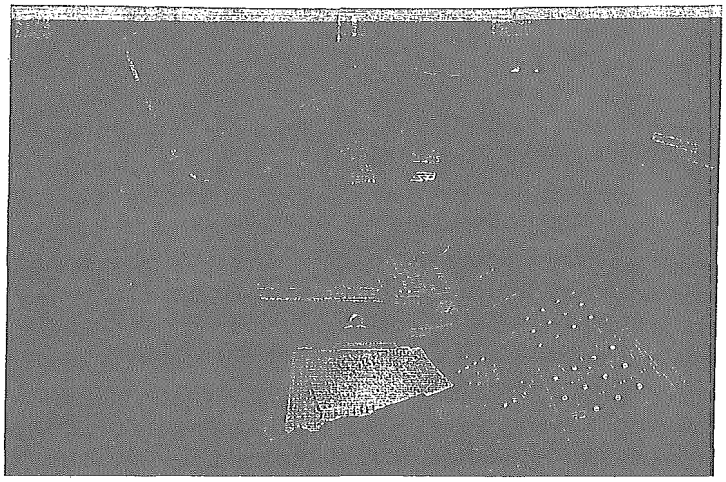
Additional information about the study can be found on the M-CAPD website http://www.miemss.org/m-capd.htm.

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

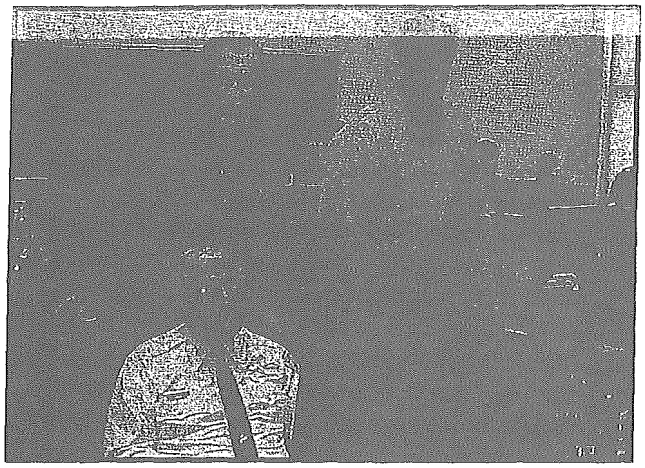
Mission: To provide leadership, expertise, and coordination in information systems, data management, networking, and application development relating to emergency medical services systems.

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