D53T00
Maryland Institute for Emergency Medical Services Systems

Executive Summary

The Maryland Institute for Emergency Medical Services Systems (MIEMSS) is an independent agency that oversees and coordinates all components of the statewide Emergency Medical Services (EMS) system.

Operating Budget Data

($ in Thousands)

	FY 18 Actual	FY 19 Working	FY 20 Allowance	FY 19-20 Change	% Change Prior Year
Special Fund	$24,561	$19,597	$16,380	-$3,217	-16.4%
Adjustments	0	61	282	221	
Adjusted Special Fund	**$24,561**	**$19,657**	**$16,661**	**-$2,996**	**-15.2%**
Federal Fund	2,058	2,533	2,533	0	
Adjustments	0	0	0	0	
Adjusted Federal Fund	**$2,058**	**$2,533**	**$2,533**	**$0**	**0.0%**
Reimbursable Fund	1,188	704	904	200	28.3%
Adjustments	0	0	0	0	
Adjusted Reimbursable Fund	**$1,188**	**$704**	**$904**	**$200**	**28.3%**
Adjusted Grand Total	**$27,807**	**$22,894**	**$20,098**	**-$2,796**	**-12.2%**

Note: The fiscal 2019 appropriation includes deficiencies, a one-time $500 bonus, and general salary increases. The fiscal 2020 allowance includes general salary increases.

- The adjusted fiscal 2020 allowance decreases by approximately $2.8 million, primarily due to a decrease of $3.4 million associated with a major information technology (IT) project to upgrade the communications system.

Note: Numbers may not sum to total due to rounding.

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Personnel Data

	FY 18 Actual	FY 19 Working	FY 20 Allowance	FY 19-20 Change
Regular Positions	94.00	94.00	94.00	0.00
Contractual FTEs	16.61	22.00	22.62	0.62
Total Personnel	**110.61**	**116.00**	**116.62**	**0.62**

Vacancy Data: Regular Positions

Turnover and Necessary Vacancies, Excluding New Positions	5.41	5.76%
Positions and Percentage Vacant as of 12/31/18	13.00	13.83%

- There are no changes in the number of regular positions in the fiscal 2020 allowance. Contractual employment increases by 0.62 full-time equivalents.

- As of December 31, 2018, MIEMSS has a vacancy rate of 13.83%, or 13 positions. The agency has 7.59 more vacancies than needed to meet the turnover expectancy. MIEMSS indicates that a new executive director has been selected and that it expects vacant positions to be filled shortly after the executive director's start date in February.

Key Observations

- ***Communications System Upgrade Major IT Project:*** Following significant delays due to program design changes and prolonged solicitation periods, MIEMSS has awarded a contract to implement the communications network upgrade.

- ***Emergency Department Overcrowding:*** Maryland emergency departments (ED) continue to be overcrowded and have some of the highest wait times in the country. MIEMSS and the Maryland Health Care Commission created a workgroup and published a report examining reimbursement options for EMS models of care that could mitigate ED overcrowding.

Operating Budget Recommended Actions

1. Concur with Governor's allowance.

D53T00
Maryland Institute for Emergency Medical Services Systems

Operating Budget Analysis

Program Description

The Maryland Institute for Emergency Medical Services Systems (MIEMSS) issues medical protocols for Emergency Medical Services (EMS) providers who render care, approves EMS educational programs that train all EMS providers, licenses commercial ambulance services, and designates trauma and specialty care referral centers. Chapter 592 of 1993, known as the EMS law, established MIEMSS as an independent State agency under the direction of the EMS Board. Prior to Chapter 592, MIEMSS was housed within the Maryland Department of Health (MDH) and subsequently, the University of Maryland, Baltimore Campus.

Chapter 592 established the EMS Board, consisting of 11 members appointed by the Governor to serve four-year terms. The EMS Board oversees the State's EMS plan and appoints the executive director of MIEMSS, who serves as the administrative head of the State's EMS system. The EMS Board prepares an annual budget proposal, taking into account the estimated income of the Maryland Emergency Medical System Operations Fund (MEMSOF), MIEMSS' primary fund source, and budget requests from MIEMSS and other agencies that participate in the State's EMS system.

MIEMSS coordinates a statewide EMS system that includes over 30,000 licensed or certified EMS providers. MIEMSS works to integrate the delivery of pre-hospital emergency care with the State's 48 hospital emergency departments, 11 trauma centers, specialty referral centers, primary stroke centers, and perinatal centers.

The EMS system is divided into five regions:

- Region I: Allegany and Garrett counties;
- Region II: Frederick and Washington counties;
- Region III: Central Maryland, including Baltimore City;
- Region IV: the Eastern Shore; and
- Region V: Metropolitan Washington.

MIEMSS operates a complex network communications system that facilitates communication between ambulances, helicopters, dispatch centers, hospital emergency departments (ED), trauma centers, and law enforcement. The communications system includes (1) the Emergency Medical Resource Center (EMRC), which is a medical channel radio system that links EMS providers in the field with hospital-based medical consultation and (2) the System Communications Center (SYSCOM),

which is responsible for helicopter dispatch and monitoring of the transport of critically ill or injured patients by helicopter to area hospitals. The MIEMSS communication system handles nearly 400,000 telephone and radio calls annually.

Performance Analysis: Managing for Results

1. Maryland Trauma Care Continues to Exceed the National Norm

A key goal of MIEMSS is to provide high-quality, systematic medical care to individuals receiving EMS. The agency measures the achievement of this goal by maintaining the State's trauma patient care performance above the national norm and monitoring the survivability rate of patients that are admitted to a trauma center, as shown in **Exhibit 1**. The likelihood of survival for an individual admitted into a Maryland trauma center has exceeded 96% in all recent years. In 2017, the survivability rate experienced a marginal decrease from 96.3% to 96.2%.

Exhibit 1
Trauma Care Performance
Calendar 2011-2017

	2011	2012	2013	2014	2015	2016	2017
Maryland Trauma Patient Care Exceeds National Norm	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Survivability Rate for Trauma Center Admissions (%)	96.6%	96.7%	96.3%	96.7%	96.4%	96.3%	96.2%

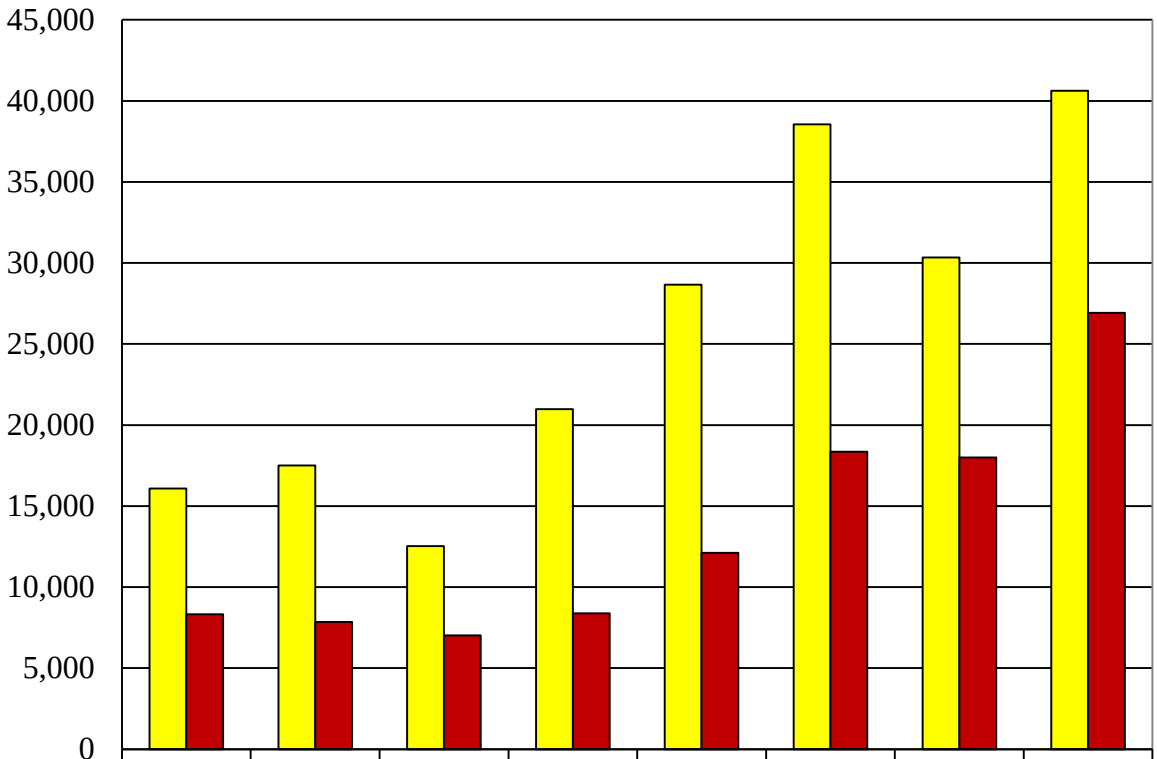
Source: Maryland Institute for Emergency Medical Services Systems

2. Emergency Department Overcrowding

The County/Hospital Alert Tracking System is a real-time computerized monitoring system of ED status throughout Maryland, maintained by MIEMSS. Hospital EDs that are temporarily unable to accept ambulance-transported patients due to overcrowding or hospital overload are identified so that ambulances can be diverted to other, less crowded ED facilities.

MIEMSS tracks yellow alerts when an ED requests to receive absolutely no patients in need of urgent medical care by ambulance with the exception of certain priority cases and red alerts when a hospital has no inpatient electrocardiogram-monitored beds available. **Exhibit 2** shows that the total number of hours of yellow and red alerts have more than doubled between 2011 and 2018. In 2018, the total hours of alerts increased by 19,218, or 39.8%, compared to 2017. However, participation in the reporting system is not mandatory, and MIEMSS indicates that there is no universally accepted indicator of when a hospital should go on diversionary status. **MIEMSS should provide an update on any plans to replace the measure or set a standard criteria for going on diversionary status.**

Exhibit 2
Total Hours of Yellow and Red Alerts in the State
Calendar 2011-2018

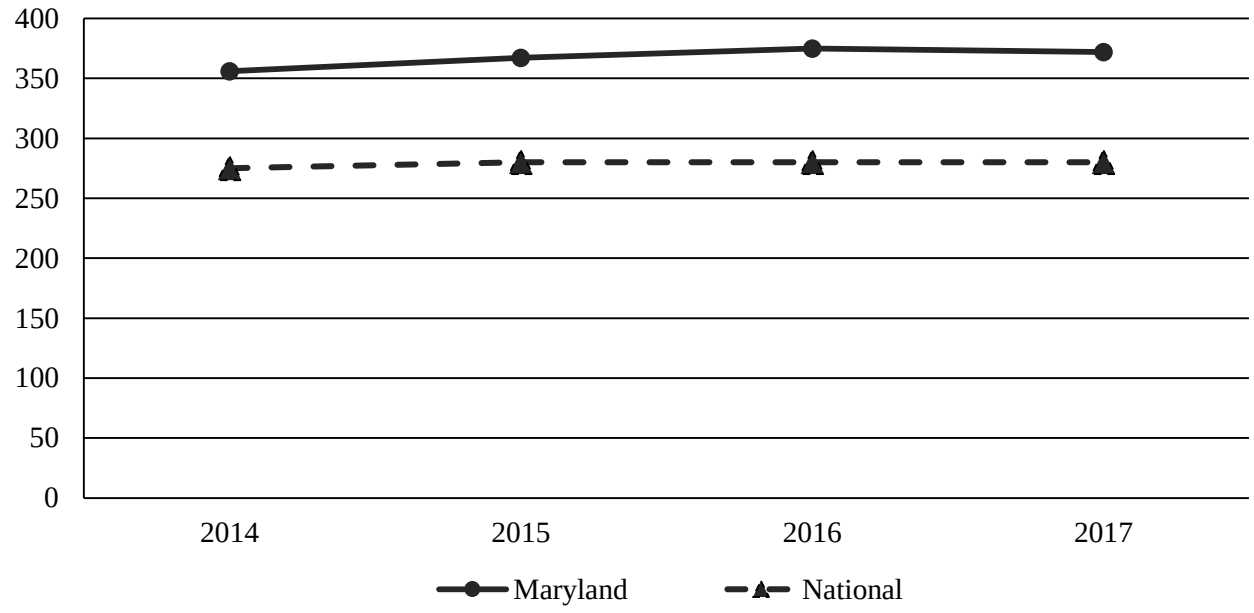


	2011	2012	2013	2014	2015	2016	2017	2018
Yellow Alerts	16,090	17,499	12,526	20,986	28,653	38,557	30,330	40,620
Red Alerts	8,328	7,860	7,026	8,386	12,116	18,358	17,995	26,923
Total	24,418	25,359	19,552	29,372	40,769	56,915	48,325	67,543

Source: Maryland Institute for Emergency Medical Services Systems

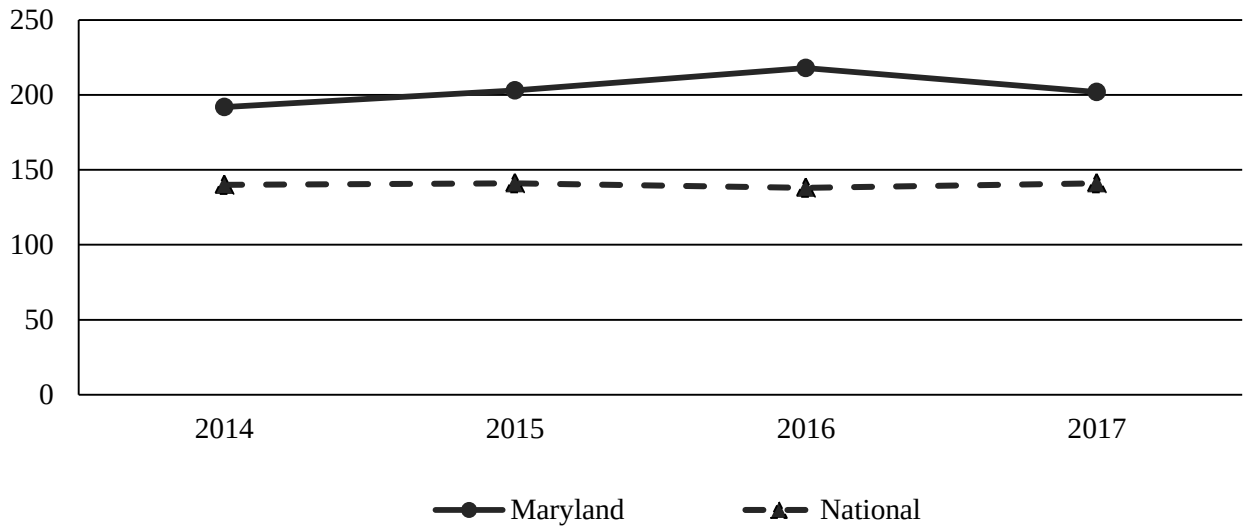
Another indicator of overcrowding is ED wait times as recorded by the Centers for Medicare and Medicaid Services (CMS). On this measure, Maryland hospitals perform far worse than the national average. **Exhibits 3** and **4** show the disparities between statewide and national median wait times for admitted and discharged patients. For admitted patients in Maryland, the median time between arrival and admission has been over 80 minutes longer than the national median in all recent years. For discharged patients in Maryland, the gap is narrower with the median wait time between arrival and discharge consistently over 50 minutes longer than the national median.

Exhibit 3
Median Time from Emergency Department Arrival to Inpatient Admission
Calendar 2014-2017
(Minutes)



Source: Centers for Medicare and Medicaid Services

Exhibit 4
Median Time from Emergency Department Arrival to Discharge
Calendar 2014-2017
(Minutes)



Source: Centers for Medicare and Medicaid Services

Fiscal 2019 Actions

Proposed Deficiency

Personnel costs in MIEMSS increase by $10,413 for a 0.5% general salary increase and $50,157 for a one-time bonus.

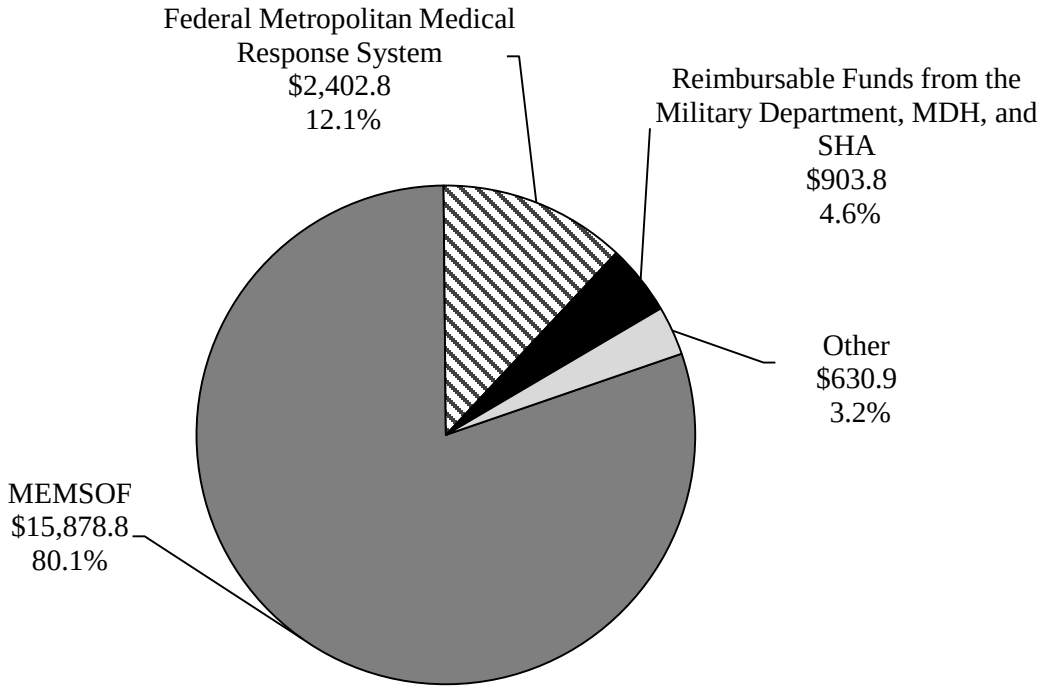
Fiscal 2020 Allowance

Overview of Agency Spending

The fiscal 2020 allowance for MIEMSS totals $19.8 million before statewide salary adjustments across all programs. As shown in **Exhibit 5**, MIEMSS is primarily funded by special funds from the MEMSOF, which account for 80.1% of the budget. MEMSOF revenues come from a biennial surcharge of $29 on motor vehicle registrations for certain classes of vehicles and a $7.50 moving violation surcharge. MIEMSS receives 12.1% of its budget in federal funds from the U.S. Department of Homeland Security for the Metropolitan Medical Response System, also known as the Emergency

Response System in Maryland. These funds provide the national capital region with mass casualty incident response and preparedness capabilities.

Exhibit 5
Fiscal 2020 Allowance by Fund Source
($ in Thousands)



Total Expenditures = $19,816.4

MEMSOF: Maryland Emergency Medical System Operations Fund
MDH: Maryland Department of Health
SHA: State Highway Administration

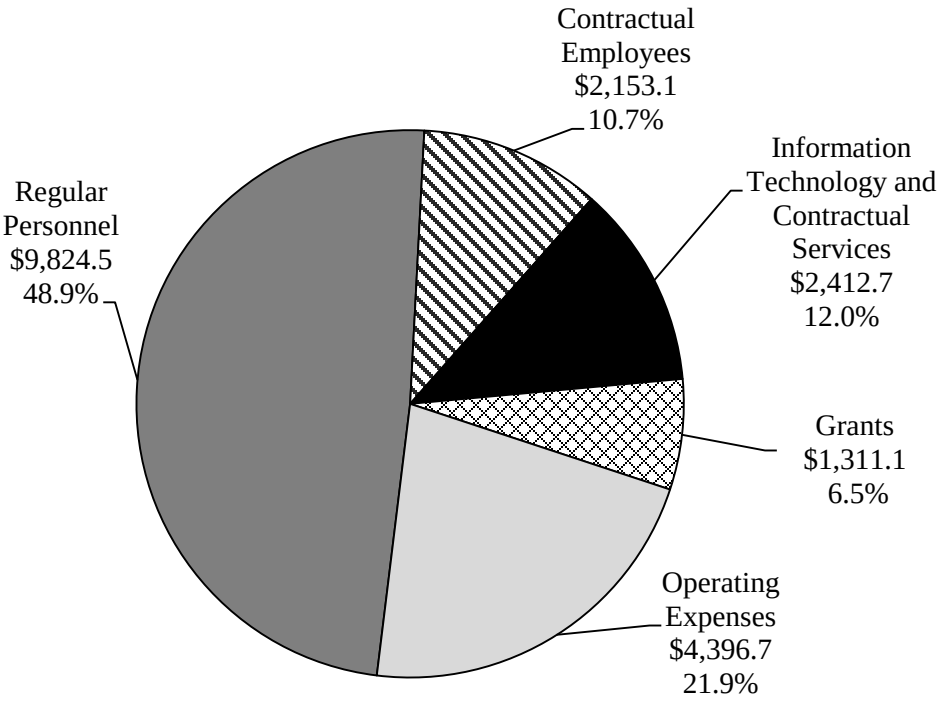
Note: Expenditures do not include statewide salary adjustments.

Source: Governor's Fiscal 2020 Budget Books

Exhibit 6 displays the fiscal 2020 allowance divided by purpose. Of $20.1 million in total expenditures, including statewide salary adjustments, MIEMSS spends approximately $12 million, or 59.6%, on regular and contractual personnel. The allowance includes $2.4 million, or 12.0%, for

information technology (IT) and contractual services. MIEMSS indicates that $1.8 million of this amount will be used for the communication system major IT project.

Exhibit 6
Fiscal 2020 Allowance by Purpose
Fiscal 2020
($ in Thousands)



Total Expenditures = $20,098.1

Note: Expenditures include statewide salary adjustments.

Source: Maryland Institute for Emergency Medical Services Systems

Proposed Budget Change

As shown in **Exhibit 7**, the fiscal 2020 adjusted allowance decreases by approximately $2.8 million, or 12.2%, compared to the fiscal 2019 working appropriation. This change is largely driven by a decrease of $3.4 million related to the communications system major IT project.

Exhibit 7
Proposed Budget
Maryland Institute Emergency Medical Services Systems
($ in Thousands)

How Much It Grows:	Special Fund	Federal Fund	Reimb. Fund	Total
Fiscal 2018 Actual	$24,561	$2,058	$1,188	$27,807
Fiscal 2019 Working Appropriation	19,657	2,533	704	22,894
Fiscal 2020 Allowance	16,661	2,533	904	20,098
Fiscal 2019-2020 Amount Change	-$2,996	$0	$200	-$2,796
Fiscal 2019-2020 Percent Change	-15.2%		28.3%	-12.2%

Where It Goes:

Personnel Expenses	
Fiscal 2020 3% general salary increase, partially offset by costs from 0.5% general salary increase	$271
Regular earnings including annualized 2% fiscal 2019 general salary increase	165
Retirement contributions	108
Other fringe benefit adjustments	5
One-time fiscal 2019 $500 bonus	-50
Employee and retiree health insurance	-106
Information Technology	
Software maintenance for Licensure and Certification system and eMEDS application, Maryland's electronic patient care reporting system	131
Communications system upgrade MITDP	-3,400
Other Changes	
Naloxone grants from Opioid Operational Command Center	200
Contractual employment increase of 0.62 full-time equivalent	47
MEMSOF grant for cardiac care	-10
Cost allocation	-11
Utilities	-19
Vehicle purchases	-22
Other	-105
Total	**-$2,796**

eMEDS: Electronic Maryland Emergency Medical Services System
MEMSOF: Maryland Emergency Medical System Operating Fund
MITDP: Major Information Technology Development Project

Note: Numbers may not sum to total due to rounding.

Naloxone Grants

EMS providers are reporting increased costs associated with cases in which EMS personnel treat a patient at the scene and the patient ultimately refuses ambulance transport to ED. Many of these cases occur when patients suffer from an opioid overdose. In response to unconscious overdoses, EMS treat the patient with ventilation support and intravenous naloxone costing approximately $95 total ($50 for the naloxone). Because EMS is considered a transportation benefit, the providers do not receive reimbursement if the patient refuses transport, and 15 EMS jurisdictions have pursued grant funding sources to help pay for these expenses. MIEMSS received a $200,000 increase in fiscal 2020 for naloxone grants from the Opioid Operational Command Center within the Military Department.

Statewide Emergency Management Communications System Upgrade

MIEMSS relies on a communications network with two components to coordinate emergency care in the State. The EMRC communications system is responsible for coordinating medical consultation between emergency units in the field and hospital emergency department physicians. SYSCOM is responsible for helicopter dispatch and monitoring the helicopter transport of critically ill or injured patients from the scene to area hospitals. Additional information on the project goals, risks, and schedule is shown in **Appendix 3**.

After a fiscal 2012 evaluation found that the MIEMSS communications system was obsolete and in jeopardy of failure, a conceptual design to replace the system was proposed. As part of the project, the communications network will upgrade from using analog, circuit-switched technology to Internet Protocol (IP) based technology. The original design for the project was estimated to cost $12.2 million and take five years to complete. **Exhibit 8** outlines the individual components included in the project as described in the recommendation from the 2011 consultant's report.

Exhibit 8
Communications System Upgrade – Project Components
As of 2011 Consultant's Report

1. Replace the existing high-risk telephone cable in downtown Baltimore with a SONET ring.

2. Continue deployment of digital EMS telephones to all hospitals and upgrade to an IP-based phone system.

3. Move communications over to a uniform, IP-based platform that offers geo-diverse operations and can be fully functional from any physical site.

4. Select and establish a Back-Up Center location for SYSCOM/EMRC Central facility in downtown Baltimore City.

5. Temporarily relocate SYSCOM/EMRC Central operations to Back-Up Center and renovate existing facility in downtown Baltimore City.

6. Transfer SYSCOM/EMRC Central operations back to Baltimore City location and retain the Back-Up Center in operational standby status.

EMRC: Emergency Medical Resource Center
EMS: Emergency Medical Services
IP: Internet Protocol
SONET: Synchronous Optical Networking
SYSCOM: Systems Communication Center

Source: Maryland Institute for Emergency Medical Services Systems; Department of Legislative Services

Project Development Costs

Exhibit 9 compares the original fiscal estimates and timeline provided in the 2011 consultant's report to the assumptions provided by MIEMSS for the past three legislative sessions. These estimates do not include funding for the Synchronous Optical Networking ring, as this was a project funded through the capital budget and was already underway prior to the final recommendation from the consultant.

Exhibit 9

Communications System Upgrade – Changing Assumptions for Upgrade and Maintenance Costs

Fiscal Years	Upgrade Costs Consultant's Projection	Maintenance Costs Consultant's Projection	Revised Upgrade Costs 2017 Session	Revised Maintenance Costs 2017 Session	Revised Upgrade Costs 2018 Session	Revised Maintenance Costs 2018 Session	Revised Upgrade Costs 2019 Session	Revised Maintenance Costs 2019 Session
2013	$415,136	$0	$344,292	$0	$344,292	$0	$344,292	$0
2014	2,497,277	1,548,421	1,680,887	0	1,680,887	0	1,680,887	0
2015	9,099,486	1,594,874	406,003	398,785	406,003	398,785	406,003	398,785
2016	37,500	1,642,720	0	688,451	0	688,451	0	688,451
2017	12,500	1,692,001	0	1,704,501	0	70,656	0	70,656
2018			8,650,000	1,742,761	8,650,000	1,742,761	8,650,000	147,146
2019			3,400,000	1,795,044	3,400,000	1,795,044	4,324,700	870,344
2020							924,700	870,344
2021							924,700	924,195
2022							924,700	979,662
Total Costs	**$12,061,899**	**$6,478,016**	**$14,481,182**	**$6,329,542**	**$14,481,182**	**$4,695,697**	**$18,179,982**	**$4,949,583**

Source: Maryland Institute for Emergency Medical Services Systems

The total estimated upgrade cost is $18.2 million based on the $2.4 million used between fiscal 2013 to 2015, mainly for the SYSCOM/EMRC central facility in Baltimore City, and $15.7 million for the four-year base contract awarded for a systems integrator. Maintenance costs listed in Exhibit 9 cover the legacy communications system components. The four-year base contract includes one year of warranty, then maintenance of the new communications system in the following four years would total $4.17 million if MIEMSS executes four one-year options with the same vendor. The fiscal 2020 allowance includes $1.8 million for development costs, a $3.4 million decrease compared to the fiscal 2019 working appropriation. However, the fiscal 2020 allowance does not reflect additional special funds that were encumbered in prior fiscal years for the project.

Status of the Timeline

The project has experienced significant delays. This is concerning because multiple sources have noted the severity of the risks associated with the current systems' limitations. As seen in Exhibit 9, the consultant's report anticipated the project to be complete in fiscal 2017. Due to the extended timeline for the project, MIEMSS has used annual operating funds, where possible, to complete small upgrades to mitigate the risk of total system failure.

Project delays have caused an immediate concern because Verizon notified MIEMSS in September 2017 that its use of leased hospital circuits in Columbia, Glen Burnie, Rockville, and Towson would be discontinued beginning on December 31, 2018. MIEMSS reviewed the affected hospitals and evaluated the existing backup connectivity to each hospital to determine current reliability. For the hospitals at greatest risk of failed backup connectivity, MIEMSS leased Comcast cable internet services and installed IP phones. As of the writing of this report, Verizon had not disconnected any circuits, and MIEMSS is prepared to connect the replacement circuits from Comcast once the Verizon circuit is no longer functional.

MIEMSS partially attributes the delays to the reordering of the project components that occurred due to an opportunity to receive equipment from the State that enabled the agency to join the new 700-megahertz radio communication system (Maryland FiRST) early in its implementation. MIEMSS opted to accept the equipment and complete the Baltimore City facility renovation before upgrading to the new communications system. After originally reporting that accepting the Maryland FiRST equipment would result in $1 million in savings, MIEMSS later indicated that the equipment did not cut costs but did connect the program to Maryland FiRST.

Following the completion of the SYSCOM/EMRC Central facility renovation in May 2015, MIEMSS' procurement of a systems integrator was also delayed. The systems integrator would take full turnkey responsibility for installation, integration, and activation of the new radio communications system. MIEMSS released a Request for Proposals (RFP) for this contract in August 2016 and only received one response. Upon advice from the Department of Information Technology and counsel from the Board of Public Works (BPW), MIEMSS canceled the RFP and released a new RFP in February 2017. The new RFP received two bids with one not meeting the agency's mandatory functional requirements. On May 16, 2018, BPW approved a four-year base contract with four one-year options not to exceed $19.9 million with the other vendor, Overland Contracting.

Initial surveys of all the agency's sites are complete, and MIEMSS is now reviewing a draft Detailed Design Report (DDR) with the vendor. DDR will detail the engineering details, configurations, equipment, services, timelines, coordination, and acceptance test plans necessary for the project. Both the agency and the vendor will agree to DDR to ensure that the upgrade will function as intended and meet all contractual obligations. MIEMSS is projected to deliver DDR on March 1, 2019.

MIEMSS should provide an update on the project design and implementation timeline being finalized with the vendor. The agency should also discuss how it will prevent and/or handle any network outages while the new system is developed and during the transition to the new network technology.

Issues

1. Reimbursement for New EMS Care Delivery Models

In a response to the 2017 *Joint Chairmen's Report* (JCR), MIEMSS identified new models of care as a strategy to address ED overcrowding in the State. These models of care are Mobile Integrated Healthcare (MIH), EMS transport to an alternative destination, and EMS without transport. MIEMSS reported that a significant limitation to these strategies is that EMS is considered a transportation benefit and is not reimbursed by Medicaid, Medicare, or commercial insurers unless transportation to certain facilities occurs. Chapter 605 of 2018 tasked MIEMSS and the Maryland Health Care Commission (MHCC) with developing a statewide plan for the reimbursement of these services provided by EMS providers. The agencies, in consultation with MDH, the Health Services Cost Review Commission (HSCRC), and other stakeholders, published their findings in a January 2019 report titled *Coverage and Reimbursement for Emergency Medical Services Care Delivery Models and Uncompensated Services*.

New Models of Care

According to the response to the 2017 JCR, many factors contributed to the level of activity in hospital EDs including an increased number of behavioral health patients seeking treatment in EDs, due in part to the current opioid crisis; increased patient care requirements in EDs to reduce hospital readmission, causing hospital throughput inefficiency; and increased volume of 9-1-1 calls (growing 8.6% between 2015 and 2017). In some cases, 9-1-1 callers could be appropriately treated in less intensive and costly health care environments than EDs or could be treated at the location where EMS providers respond to the call. In the following models of care, EMS patients are treated in settings other than the ED.

- **MIH** allows EMS to partner with health care providers, such as nurse practitioners, community health workers, social workers, and physicians to conduct home visits to assess, treat, and refer certain 9-1-1 patients to needed services in the community. MIH programs focus on frequent 9-1-1 callers, frequent users of EMS transport, and patients identified by hospitals as being at high risk for hospital readmission. There are currently seven MIH programs that are operating in Maryland and are mainly funded by grants from hospitals.

- **EMS transport to an alternative destination** diverts patients with low acuity by transporting them to an urgent care clinic or similar care environment rather than a hospital ED. MIEMSS reports that non-hospital providers, *e.g.* urgent care clinics, are not subject to the federal Emergency Medical Treatment and Labor Act requiring hospitals to treat and stabilize patients without regard to insurance status. Patients also face individual financial risk if they are transported to facilities outside of their insurance network. As a result, patients must consent to transportation to any non-ED destination, and MIEMSS provides clear guidelines to EMS for making decisions about the appropriate destination for a patient. There is currently one operational alternative destination program in Baltimore City, which receives funding

through a mix of grants and provides services for program participants at the University of Maryland Medical Center urgent care center at no cost.

- **EMS without transport**, also referred to as EMS treat and release/refer without transport, currently occurs (without reimbursement) when EMS personnel provide services to a patient at the scene who ultimately refuses transport to an ED. These cases are most often for patients with diabetic hypoglycemia, asthma, or unconscious overdose. In one jurisdiction, EMS personnel can identify low acuity patients and offer on-scene treatment provided by a physician or nurse practitioner with the patient's consent, thereby allowing the physician or nurse practitioner to bill for services.

Recommendations and Next Steps

The report discussed four overarching vision statements for a statewide plan:

- the different EMS models of care need long-term, sustainable funding solutions;
- reimbursement for the three models must be financially and practically viable for all EMS participants, including payers;
- reimbursement for the models should include all private and public payers to avoid cost-shifting between payer types and to ensure equitable treatment of patients; and
- EMS reimbursement changes must dovetail with the State's Total Cost of Care Model.

Medicaid reimbursement recommendations include having MIEMSS and MDH, with collaboration from EMS jurisdictions and managed care organizations, develop reasonable cost projection models for all three care delivery models.

Medicare recommendations are for HSCRC:

- to expand grant opportunities for the three EMS care delivery models to allow EMS providers to apply in partnership with local hospitals;
- to consider these models in the proposal process with CMS for new tracks for the Care Redesign program under the Total Cost of Care Model;
- to periodically review opportunities to incorporate the care delivery models as potential New Model programs, which are currently only available to hospitals;
- to encourage participation by hospitals and other health care providers in the models through the Total Cost of Care Model; and

- to identify EMS care delivery financing models used outside of Maryland, especially any future EMS-focused models developed by CMS Innovation.

Public and private payer recommendations include implementing creative pilot programs using the three EMS delivery models and experimenting with payment approaches that have been successfully adopted in other States.

Next Steps for MIEMSS and MHCC are:

- to develop a designation process whereby alternative destinations can be approved to receive and treat EMS ambulance-transported, low acuity patients;

- to compile and analyze data from current pilot EMS model programs and encourage public and private payer support of these programs;

- to continue to evaluate the percentage of treat and release/refer without transport cases compared to all EMS services; and

- to create a forum with EMS providers and payers to discuss changes in EMS care, results from new initiatives, and payer reimbursement.

Operating Budget Recommended Actions

1. Concur with Governor's allowance.

Appendix 1
Current and Prior Year Budgets
Maryland Institute for Emergency Medical Services Systems
($ in Thousands)

	General Fund	Special Fund	Federal Fund	Reimb. Fund	Total
Fiscal 2018					
Legislative Appropriation	$0	$24,890	$2,444	$561	$27,895
Deficiency/Withdrawn Appropriation	$0	-$121	$0	$0	-$121
Cost Containment	$0	$0	$0	$0	$0
Budget Amendments	$0	$0	$0	$712	$712
Reversions and Cancellations	$0	-$208	-$386	-$85	-$678
Actual Expenditures	**$0**	**$24,561**	**$2,058**	**$1,188**	**$27,807**
Fiscal 2019					
Legislative Appropriation	$0	$19,520	$2,533	$704	$22,757
Budget Amendments	0	76	0	0	76
Working Appropriation	**$0**	**$19,597**	**$2,533**	**$704**	**$22,834**

Note: The fiscal 2019 appropriation does not include deficiencies, a one-time $500 bonus, or general salary increases. Numbers may not sum to total due to rounding.

Fiscal 2018

Actual expenditures in fiscal 2018 were $27.8 million, a net decrease of $87,801 from the legislative appropriation.

A withdrawn appropriation in Section 19 of the fiscal 2019 Budget Bill reduced the appropriation by $121,425 in special funds due to a surplus in the health insurance account.

Three budget amendments added a total of $711,778 in reimbursable funds: $421,778 from the Maryland Department of Health to fund transport teams and regional emergency 9-1-1 response for emerging highly infectious diseases; $200,000 from the Opioid Operational Command Center within MDH to provide partial compensation for naloxone administered to non-transport patients; and $90,000 from the Maryland Highway Safety Office to improve motor vehicle crash patient reporting.

These actions were partially offset by $678,154 in cancellations. The Maryland Institute for Emergency Medical Services Systems canceled $207,782 in special funds and $385,860 in federal funds due to staff vacancies. An additional $84,512 in reimbursable funds for modifications to the electronic patient care reporting system were canceled because the funds were expended in fiscal 2019.

Fiscal 2019

To date, the fiscal 2019 budget has increased by $76,376 in special funds for a 2% general salary increase for State employees, effective January 1, 2019, that was centrally budgeted.

Appendix 2
Audit Findings

Audit Period for Last Audit:	September 22, 2014 – July 22, 2018
Issue Date:	December 2018
Number of Findings:	0
Number of Repeat Findings:	0
% of Repeat Findings:	0%
Rating: (if applicable)	n/a

In a fiscal compliance audit report issued in December 2018, the Office of Legislative Audits recorded no findings regarding the Maryland Institute for Emergency Medical Services Systems operations and internal control.

Appendix 3
Major Information Technology Projects
Maryland Institute for Emergency Medical Services Systems
Statewide Emergency Management Communications System Upgrade

Project Status	Implementation.	**New/Ongoing Project:**	Ongoing.
Project Description:	The primary purpose of this project is to upgrade the Maryland Institute for Emergency Medical Services Systems (MIEMSS) emergency medical services radio communications systems and capabilities to meet current and future needs.		
Project Business Goals:	The goal is to have a highly reliable, next generation communications system that is built on a uniform platform, is Internet Protocol-based, uses proven and scalable technology, and integrates with the State's public safety answering points. The upgrade will allow for geo-diverse operations and be fully functional from any physical site, including currently operated locations.		
Estimated Total Project Cost:	$18,179,982	**Estimated Planning Project Cost:**	n/a.
Project Start Date:	December 1, 2015.	**Projected Completion Date:**	Fiscal 2022.
Schedule Status:	After delays to the procurement process, MIEMSS awarded the contract to Overland Contracting. MIEMSS is currently reviewing a detailed design report that will establish the engineering details and timelines for what the vendor is going to provide.		
Cost Status:	The estimated upgrade cost totals $18.2 million. The costs in fiscal 2018 to 2022 are for a four-year base contract totaling $15.75 million. The contract includes four one-year options totaling $4.17 million to continue maintenance after the initial warranty period.		
Scope Status:	The scope has not changed.		
Project Management Oversight Status:	The fiscal 2020 allowance includes $50,000 for oversight.		
Identifiable Risks:	High-level risks for this project include resource availability and implementation. Medium-level risks include level of technicality, user interface, organizational culture, supportability, and flexibility. The project is complex and requires a significant amount of infrastructure capacity, new training, customization, and the ability to interface with new and existing systems. There is a potential for resistance from end users who are familiar with the existing legacy application. The level of internal support required by the agency to host the system, complex implementation, and flexibility within the system needed to allow for future enhancements and changing technologies also all pose risks.		

Fiscal Year Funding ($ in Thousands)	**Prior Years**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**Balance to Complete**	**Total**
Personnel Services	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Professional and Outside Services	15,405.9	924.7	924.7	924.7	0.0	0.0	2,774.1	18,180.0
Other Expenditures	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Funding	**$15,405.9**	**$924.7**	**$924.7**	**$924.7**	**$0.0**	**$0.0**	**$2,774.1**	**$18,180.0**

Appendix 4
Object/Fund Difference Report
Maryland Institute Emergency Medical Services Systems

Object/Fund	FY 18 Actual	FY 19 Working Appropriation	FY 20 Allowance	FY 19 - FY 20 Amount Change	Percent Change
Positions					
01 Regular	94.00	94.00	94.00	0.00	0%
02 Contractual	16.61	22.00	22.62	0.62	2.8%
Total Positions	**110.61**	**116.00**	**116.62**	**0.62**	**0.5%**
Objects					
01 Salaries and Wages	$ 8,737,327	$ 9,369,637	$ 9,542,713	$ 173,076	1.8%
02 Technical and Special Fees	1,708,188	2,106,116	2,153,115	46,999	2.2%
03 Communication	11,810,178	4,395,727	2,787,598	-1,608,129	-36.6%
04 Travel	636,708	746,084	745,028	-1,056	-0.1%
06 Fuel and Utilities	124,432	145,346	128,888	-16,458	-11.3%
07 Motor Vehicles	323,675	256,378	238,790	-17,588	-6.9%
08 Contractual Services	2,449,826	4,184,450	2,412,741	-1,771,709	-42.3%
09 Supplies and Materials	189,630	154,538	149,288	-5,250	-3.4%
10 Equipment – Replacement	169,151	99,300	97,000	-2,300	-2.3%
11 Equipment – Additional	66,279	85,715	84,715	-1,000	-1.2%
12 Grants, Subsidies, and Contributions	1,418,729	1,121,050	1,311,050	190,000	16.9%
13 Fixed Charges	173,212	169,528	165,428	-4,100	-2.4%
Total Objects	**$ 27,807,335**	**$ 22,833,869**	**$ 19,816,354**	**-$ 3,017,515**	**-13.2%**
Funds					
03 Special Fund	$ 24,560,632	$ 19,596,804	$ 16,379,705	-$ 3,217,099	-16.4%
05 Federal Fund	2,058,420	2,532,800	2,532,800	0	0%
09 Reimbursable Fund	1,188,283	704,265	903,849	199,584	28.3%
Total Funds	**$ 27,807,335**	**$ 22,833,869**	**$ 19,816,354**	**-$ 3,017,515**	**-13.2%**

Note: The fiscal 2019 appropriation does not include deficiencies, a one-time $500 bonus, or general salary increases. The fiscal 2020 allowance does not include general salary increases.

Appendix 5
Fiscal Summary
Maryland Institute Emergency Medical Services Systems

Program/Unit	FY 18 Actual	FY 19 Wrk Approp	FY 20 Allowance	Change	FY 19 - FY 20 % Change
01 General Administration	$ 19,157,336	$ 19,433,869	$ 19,816,354	$ 382,485	2.0%
02 Information Technology Project	8,649,999	3,400,000	0	-3,400,000	-100.0%
Total Expenditures	**$ 27,807,335**	**$ 22,833,869**	**$ 19,816,354**	**-$ 3,017,515**	**-13.2%**
Special Fund	$ 24,560,632	$ 19,596,804	$ 16,379,705	-$ 3,217,099	-16.4%
Federal Fund	2,058,420	2,532,800	2,532,800	0	0%
Total Appropriations	**$ 26,619,052**	**$ 22,129,604**	**$ 18,912,505**	**-$ 3,217,099**	**-14.5%**
Reimbursable Fund	$ 1,188,283	$ 704,265	$ 903,849	$ 199,584	28.3%
Total Funds	**$ 27,807,335**	**$ 22,833,869**	**$ 19,816,354**	**-$ 3,017,515**	**-13.2%**

Note: The fiscal 2019 appropriation does not include deficiencies, a one-time $500 bonus, or general salary increases. The fiscal 2020 allowance does not include general salary increases.