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Maryland Institute for Emergency Medical Services Systems

Operating Budget Data

($ in Thousands)

	FY 17 Actual	**FY 18 Working**	**FY 19 Allowance**	**FY 18-19 Change**	**% Change Prior Year**
Special Fund	$14,117	$24,890	$19,585	-$5,305	-21.3%
Adjustments	0	-121	77	199	
Adjusted Special Fund	**$14,117**	**$24,768**	**$19,662**	**-$5,106**	**-20.6%**
Federal Fund	1,875	2,444	2,533	89	3.6%
Adjustments	0	0	0	0	
Adjusted Federal Fund	**$1,875**	**$2,444**	**$2,533**	**$89**	**3.6%**
Reimbursable Fund	501	561	704	143	25.5%
Adjustments	0	0	1	1	
Adjusted Reimbursable Fund	**$501**	**$561**	**$705**	**$144**	**25.7%**
Adjusted Grand Total	**$16,493**	**$27,774**	**$22,900**	**-$4,874**	**-17.5%**

Note: FY 18 Working includes targeted reversions, deficiencies, and across-the-board reductions. FY 19 Allowance includes contingent reductions and cost-of-living adjustments.

- The fiscal 2019 adjusted allowance of the Maryland Institute for Emergency Medical Services Systems (MIEMSS) decreases by approximately $4.87 million, or 17.5%, compared to the adjusted fiscal 2018 working appropriation.

- Lower spending is driven by a net decrease of $5.1 million in special funds related to the communications system upgrade major information technology project.

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

For further information contact: Anne P. Wagner Phone: (410) 946-5530

Personnel Data

	FY 17 Actual	FY 18 Working	FY 19 Allowance	FY 18-19 Change
Regular Positions	94.00	94.00	94.00	0.00
Contractual FTEs	15.03	20.00	22.00	2.00
Total Personnel	**109.03**	**114.00**	**116.00**	**2.00**

Vacancy Data: Regular Positions

Turnover and Necessary Vacancies, Excluding New Positions		5.63	5.99%
Positions and Percentage Vacant as of 12/31/17		9.00	9.57%

- There are no changes in the number of regular positions in MIEMSS in the fiscal 2019 allowance.

- The fiscal 2019 allowance includes 22 contractual full-time equivalents (FTE), an increase of 2 FTEs from the fiscal 2018 working appropriation. The positions support two grant programs funded by the Maryland Department of Health.

- Turnover expectancy for MIEMSS increases from 4.49% to 5.99% in the fiscal 2019 allowance.

- As of December 31, 2017, MIEMSS had a vacancy rate of 9.57%, or 9 positions. This is approximately 3 more vacancies than the 5.63 vacant positions needed to meet budgeted turnover. Included in these vacancies is the executive director position, which has been vacant since September 2016. **MIEMSS should comment on when it anticipates filling the executive director vacancy and what steps it is taking to fill the position.**

Analysis in Brief

Major Trends

Maryland Trauma Care Continues to Exceed the National Norm: Maryland continues to demonstrate outcomes above the national norm as measured by the survivability rate of trauma care center admissions.

Issues

Emergency Department Overcrowding: Committee narrative in the 2017 *Joint Chairmen's Report* (JCR) requested that MIEMSS work with the Health Services Cost Review Commission to evaluate the impact of emergency department (ED) overcrowding on emergency medical services (EMS) response times and Maryland's patient population and to develop a plan to address the overcrowding issue. This issue discusses the magnitude of ED overcrowding and the findings of the JCR response.

Mobile Integrated Healthcare Programs: MIEMSS indicates that one cause of ED overcrowding is unnecessary use of EMS by patients who have chronic or low acuity conditions. Mobile Integrated Healthcare (MIH) programs are one effort to reduce this unnecessary use of 9-1-1. Narrative in the 2017 JCR requested MIEMSS to submit a report evaluating the impact of existing MIH programs and exploring the potential for further expansion. This issue discusses the findings of the JCR response.

Operating Budget Recommended Actions

1. Concur with Governor's allowance.

Maryland Institute for Emergency Medical Services Systems

Operating Budget Analysis

Program Description

The Maryland Institute for Emergency Medical Services Systems (MIEMSS) oversees and coordinates all components of the State's emergency medical services (EMS) system, in accordance with State statute and regulations. MIEMSS provides guidance on medical direction, conducts EMS educational programs, licenses commercial ambulance services, and participates in EMS-related public education and prevention programs. 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.

Chapter 592 also 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, trauma centers, and law enforcement. The communications system includes (1) the Emergency Medical Resource Center (EMRC), which is a medical channel radio communications 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 communications 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 system'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**. Since the measure was first reported in calendar 2009, the likelihood of survival for an individual admitted to a Maryland trauma center has exceeded 96.0%. Most recently, the survivability rate experienced a marginal decrease from 96.4% to 96.3% between calendar 2015 and 2016.

Exhibit 1
Trauma Care Performance
Calendar 2010-2016

	2010	2011	2012	2013	2014	2015	2016
Maryland Trauma Patient Care Exceeds National Norm	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Survivability Rate for Trauma Center Admissions (%)	96.5%	96.6%	96.7%	96.3%	96.7%	96.4%	96.3%

Source: Maryland Institute for Emergency Medical Services Systems

Fiscal 2018 Actions

Across-the-board Employee and Retiree Health Insurance Reduction

The budget bill includes an across-the-board reduction for employee and retiree health insurance in fiscal 2018 to reflect a surplus balance in the fund. This agency's share of this reduction is $121,425 in special funds.

Proposed Budget

As shown in **Exhibit 2**, the fiscal 2019 adjusted allowance decreases by approximately $4.87 million, or 17.5%, compared to the fiscal 2018 adjusted working appropriation. This change is driven by a net decrease of $5.1 million in special funds related to the communications system upgrade major information technology project.

Exhibit 2
Proposed Budget
Maryland Institute for Emergency Medical Services Systems
($ in Thousands)

How Much It Grows:	Special Fund	Federal Fund	Reimb. Fund	Total
Fiscal 2017 Actual	$14,117	$1,875	$501	$16,493
Fiscal 2018 Working Appropriation	24,768	2,444	561	27,774
Fiscal 2019 Allowance	19,662	2,533	705	22,900
Fiscal 2018-2019 Amount Change	-$5,106	$89	$144	-$4,874
Fiscal 2018-2019 Percent Change	-20.6%	3.6%	25.7%	-17.5%

Where It Goes:	
Personnel Expenses	
2.0 new contractual FTEs	$182
Employee and retiree health insurance, due to the impact of fiscal 2018 health insurance deduction holidays	121
General salary increase	78
Other fringe benefit adjustments	-6
Regular earnings, including increase for executive director position and savings from budgeting vacant positions at base salaries	-18
Turnover adjustments	-120
Information Technology	
Communications system upgrade MITDP	-5,250
Maintenance costs MITDP	152
Development of incident command system through ERS grant	125
Fiscal 2018 appropriation to develop case management and inspection software	-30

Where It Goes:	
Other Changes	
Required structural evaluations of new equipment deployed to communication towers	38
Travel expenses, based on location of fiscal 2019 events and number of attendees	33
Other	-34
Fluctuations due to ERS grant allocations	-35
One-time reimbursable funds from MDH to hire Emergency Operations Planner	-49
Conclusion of five-year capital lease repayment schedule	-61
Total	**-$4,874**

MITDP: Major Information Technology Development Project
FTE: full-time equivalent
ERS: Emergency Response System
MDH: Maryland Department of Health

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

Personnel

Personnel expenditures in MIEMSS, including contractual assistance, increase $237,633 above the fiscal 2018 working appropriation. The largest change is an increase of $182,164 for 2 new contractual FTEs that support grant programs funded by MDH. Another significant change is employee and retiree health insurance costs, which increase by $121,425 due to fiscal 2018 health insurance deduction payroll holidays. This is partially offset by a decrease of $119,837 for turnover adjustments due to the turnover rate increasing from 4.49% in fiscal 2018 to 5.99% in the allowance.

The fiscal 2019 allowance includes funds for a 2% general salary increase for all State employees, effective January 1, 2019. These funds are budgeted in the Department of Budget and Management's statewide program and will be distributed to agencies during the fiscal year. This agency's share of the general salary increase is $78,046.

Other Changes

MIEMSS reports a net decrease of $34,589 in Emergency Response System grant funds that are spread out across the allowance. The allowance decreases by $48,950 in reimbursable funds to account for the fiscal 2018 funds used to hire an Emergency Operations Planner. Other changes include an increase of $38,000 to fund a new requirement for tower surveys when new equipment is deployed to communications towers and a decrease of $60,645 due to a five-year capital lease repayment schedule concluding in fiscal 2018.

Information Technology

The majority of the change in the fiscal 2019 allowance is attributable to the decrease in funding provided to upgrade the agency's statewide communications system. The fiscal 2019 allowance also includes minor funding increases for standard repairs to communications infrastructure and $125,409 in ERS grant funds to develop an incident command system.

Statewide Emergency Management Communications System Upgrade

MIEMSS relies on two primary communications systems to coordinate emergency care in Maryland. EMRC communications system is responsible for coordinating medical consultation between emergency personnel at the scene 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. 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. **Exhibit 3** outlines the individual components included in the project as described in the original recommendation from the 2011 consultant's report.

Exhibit 3

Communications System Upgrade – Project Components

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

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MIEMSS reports that the total estimated upgrade cost is between $14.5 million and $15.5 million. The fiscal 2019 allowance includes $3.4 million for upgrade costs and $1.8 million for maintenance costs, a net decrease of $5.1 million (or 49.5%) compared to the fiscal 2018 working appropriation. The estimate provided by the Department of Information Technology (DoIT) indicates additional funding needs through fiscal 2022. MIEMSS indicates that the funds allocated for development and maintenance in fiscal 2018 and 2019 will be sufficient to fund the project. An exact cost will not be available until a contract with a systems integrator (SI) is finalized.

Exhibit 4 compares the original fiscal estimates and timeline provided in the 2011 consultant's report to the assumptions provided by MIEMSS for the past three 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 4

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 2016 Session	Revised Maintenance Costs 2016 Session	Revised Upgrade Costs 2017 Session	Revised Maintenance Costs 2017 Session	Revised Upgrade Costs 2018 Session	Revised Maintenance Costs 2018 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	37,500	1,642,720	0	688,451	0	688,451
2017	12,500	1,692,001	11,012,500	1,692,001	0	1,704,501	0	70,656
2018	-				8,650,000	1,742,761	8,650,000	1,642,761
2019	-				3,400,000	1,795,044	3,400,000	1,795,044
Total Costs	**$12,061,899**	**$6,478,016**	**$13,481,182**	**$3,733,506**	**$14,481,182**	**$6,329,542**	**$14,481,182**	**$4,695,697**

Source: Maryland Institute for Emergency Medical Services Systems

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 4, the consultant's report anticipated the project to be complete in fiscal 2017. The projections provided by MIEMSS during the 2016 session were consistent with that timeline, although the total cost of the upgrade had increased. 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.

MIEMSS attributes the delay 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 State's 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. During the 2016 session, MIEMSS testified that accepting Maryland FiRST equipment resulted in over $1.0 million in MEMSOF savings because the equipment was provided at no cost to MIEMSS. The fiscal estimate provided in Exhibit 4, however, would suggest that despite this, the cost of the upgrade has increased by $2.42 million. MIEMSS now reports that accepting the equipment did not cut costs, but did connect the program to Maryland FiRST.

MIEMSS completed the SYSCOM/EMRC Central facility renovation in May 2015 and is now procuring an SI to take full turnkey responsibility for installation, integration, and activation of the new radio communications systems. MIEMSS released a Request for Proposal (RFP) to retain the SI in August 2016. However, in the best interest of the State and upon the advice from DoIT and counsel with the Board of Public Works (BPW), MIEMSS canceled that RFP and rereleased a new RFP. The evaluation process is complete and MIEMSS is working to bring a contract to BPW.

The updated timeline in the Information Technology Project Request now projects that implementation will begin in July 2018 and end in June 2020. Additional information on the project goals, risks, and schedule is shown in **Appendix 2**.

MIEMSS should discuss the status of its current radio communications systems operations, in addition to providing a status update on the upgrade project. The agency should comment on when the contract for the SI is anticipated to be sent to BPW and when the selected vendor is expected to begin implementation.

Issues

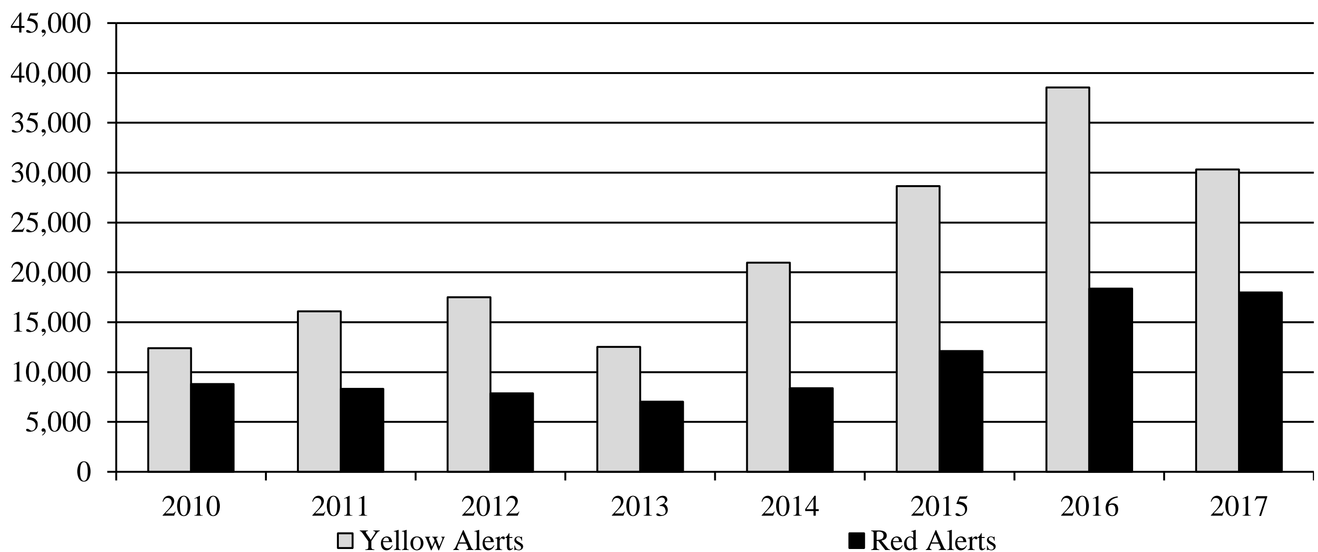
1. Emergency Department Overcrowding

After a significant increase in emergency department (ED) overcrowding in fiscal 2016, the budget committees included narrative in the 2017 *Joint Chairmen's Report* (JCR) directing MIEMSS to work with the Health Services Cost Review Commission (HSCRC) to evaluate the impact of ED overcrowding on EMS response times and Maryland's patient population and to develop a plan to address the issue.

Magnitude of the Problem

The magnitude of ED overcrowding was apparent in the 40% increase of total hours that hospitals temporarily diverted ambulance-transported patients due to hospital overload in fiscal 2016. MIEMSS tracks these as "yellow" alerts when an emergency room requests to receive no patients in need of urgent medical care by ambulance, with the exception of certain priority cases, and as "red" alerts when a hospital has no inpatient electrocardiogram-monitored beds available. **Exhibit 5** shows that the total number of hours of yellow and red alerts decreased by 8,227, or 21.3% in fiscal 2017. MIEMSS advises that this does not necessarily indicate decreased ED overcrowding. According to the JCR response, there is a lack of uniformity in hospital use of alert status, making this measure unreliable.

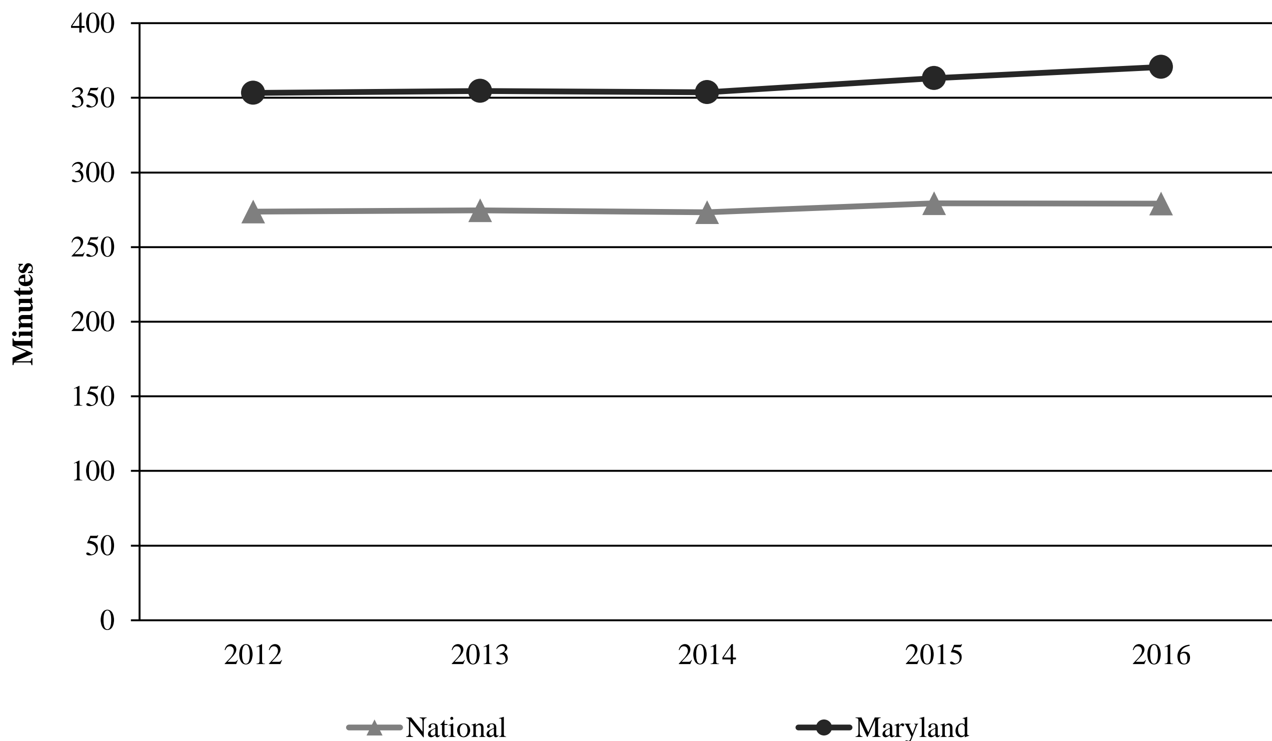
Exhibit 5
Total Hours of Yellow and Red Alerts in the State
Calendar 2010-2017



Source: Maryland Institute for Emergency Medical Services Systems

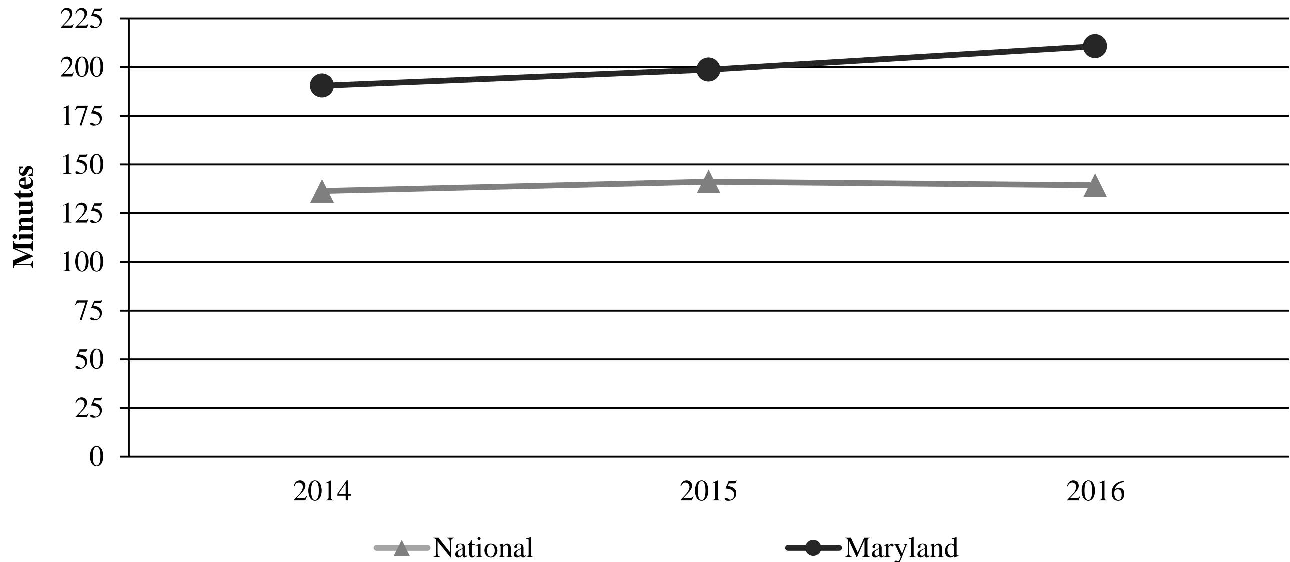
Another indicator of ED overcrowding included in the report is wait times, and on this measure, Maryland hospitals perform far worse than the national average. **Exhibits 6** and **7** show the disparities between the statewide and national medians for time from ED arrival to inpatient admission for admitted patients and time from ED arrival to discharge for discharged patients. For Maryland admitted patients, the median wait time until admission has consistently been over 75 minutes longer than the national median in recent years. For Maryland discharged patients, the gap is narrower with a State median wait time until discharge 50 minutes over the national median.

Exhibit 6
Median Time from ED Arrival to Inpatient Admission
Calendar 2012-2016



Source: Maryland Institute for Emergency Medical Services Systems; Centers for Medicare and Medicaid Services

Exhibit 7
Median Time from ED Arrival to Discharge
Calendar 2014-2016



Source: Maryland Institute for Emergency Medical Services Systems; Centers for Medicare and Medicaid Services

Impact of Overcrowding

MIEMSS reports that overcrowding raises concerns about hospitals' ability to routinely accommodate patients needing urgent medical care and to respond effectively during a mass casualty incident. Increased EMS diversions resulting from overcrowding forces ambulances to go to more distant hospitals and wait longer to transfer patients to hospital care. This could decrease ambulance availability. Aside from reporting the alert hours, data is not currently available to evaluate whether response times have increased with the increase in ED diversions. **MIEMSS should comment on any efforts to measure the extent of ambulance diversion and whether response times have increased due to ED overcrowding.**

The report compiles findings from multiple studies that indicate ED overcrowding can have a significant detrimental impact on patients. In patients with acute coronary syndrome, the rate of complications, such as incidence of death, cardiac arrest, and stroke, was found to be significantly increased during periods of ED overcrowding. A 2016 study found that periods of high overcrowding were associated with increased hospital length of stay and costs for admitted patients. A 2017 literature review concluded that overcrowding was associated with increased mortality and time to treatment and decreased quality of care and patient satisfaction. **MIEMSS should comment on any findings related to the impact of recent overcrowding trends on Maryland patients specifically.**

Causes of Overcrowding

According to MIEMSS, five main factors have contributed to the level of activity in hospital EDs influencing hospital overcrowding and the increased need for ambulance diversions:

- increased behavioral health patients seeking treatment in EDs, due in part to the current opioid crisis and the limited availability of inpatient behavioral health beds and resources;
- misaligned reimbursement policies resulting from hospitals shifting to more community-based care and fewer in-patient resources while EMS reimbursement relies on transporting patients to EDs;
- increased patient care requirements in EDs to reduce hospital readmission, causing longer ED wait times and hospital throughput inefficiency;
- increased volume of 9-1-1 calls and numbers of EMS patients seeking treatment at EDs; and
- staff shortages of registered nurses contributing to reduced inpatient capacity.

Strategies to Address Overcrowding

The report discussed two strategies that HSCRC can use to improve ED efficiency and patient throughput:

- adding an ED performance measure in the quality-based reimbursement program; and
- requesting hospital efficiency improvement action plans from hospitals that have poor ED performance measures coupled with reduced patient days.

MIEMSS outlined the following responses that it could offer:

- assessing whether the use of yellow alerts should be discontinued;
- developing new models of EMS care delivery and assessing their utility in reducing ambulance transport of low acuity patients to hospital EDs;
- identifying a reasonable standard time between the arrival of an ambulance-transported patient and the time that the patient is moved off the EMS stretcher, known as ambulance off-load; and
- working with HSCRC to incorporate EMS for participation in new care delivery programs under the State's enhanced Total Cost of Care All-Payer Model, beginning January 2019.

Finally, the report identified the following areas that require system improvements to mitigate ED overcrowding:

- public and private behavioral health infrastructure in the State;
- pre-hospital transportation; and
- hospital throughput efficiency.

MIEMSS should provide an update on implementation of the strategies outlined in the report, including concrete efforts planned for 2018.

2. Mobile Integrated Healthcare Programs

MIEMSS reports that a contributing factor of ED overcrowding is unnecessary use of 9-1-1 and unnecessary transports to hospital EDs for minor medical complications. One response to this is new models of EMS care delivery, particularly Mobile Integrated Healthcare (MIH) programs. A typical MIH program involves EMS partnering with local hospitals, health departments, and others to deliver nonemergency services to patients in their home.

Committee narrative in the 2017 JCR requested that MIEMSS evaluate the impact of existing MIH programs and explore the potential for further expansion. MIEMSS was also tasked with conducting a cost benefit analysis and offering potential solutions to the lack of secured funding for EMS' participation. In response, MIEMSS convened a workgroup including representatives from EMS or Fire and Rescue Services from Baltimore City and Charles, Dorchester, Montgomery, Prince George's, and Queen Anne's counties.

Impact of Existing MIH programs

The workgroup reports that MIH programs are operational in Charles, Montgomery, Prince George's, and Queen Anne's counties. MIH programs are soon to be operational in Salisbury and Frederick and Wicomico counties. Additionally, Baltimore City is implementing a similar program called Alternative Destination that transports patients with low acuity conditions to an urgent care or similar environment rather than an ED.

The report finds that all Maryland MIH programs establish measures of effectiveness including quality of care, patient safety, EMS and hospital utilization, patient satisfaction, and costs. Early results in Queen Anne's County, the first MIH program implemented in Maryland, show that patient participants have decreased use of EMS and hospital ED visits and increased use of other nonemergency sources of health care.

Funding

MIEMSS indicates that current EMS reimbursement policies do not provide reimbursement for services provided when the patient is not transported. This policy incentivizes EMS to transport all patients to a hospital ED. MIH programs seek to prevent patients with minor medical complications from being transported to an ED. As a result, the current reimbursement model does not fit MIH programs. Instead, the programs are funded through a combination of grants, in-kind service donations, and jurisdictional budgets.

The report recommends the following changes to support further expansion and secure funding:

- integrating MIH programs with statewide health care payment initiatives undertaken as part of modifications to the All-Payer Model;
- including EMS in planning for larger health care payment initiatives;
- working with HSCRC to develop demonstration projects to permit EMS to bill for non-transport services;
- aligning EMS reimbursement and financial incentives with those of hospitals and other health care providers;
- recognizing hospitals that champion MIH programs and creating incentives for financial commitments to the ongoing operation of the programs;
- revising State law to permit EMS to be reimbursed by Medicaid and private insurers for MIH and Alternative Destination services; and
- establishing a fund to provide support to MIH programs and to establish new programs until changes to reimbursement policies occur.

MIEMSS should provide an update on the implementation of the recommendations in the report since its submission in November, including efforts planned for 2018.

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 2017					
Legislative Appropriation	$0	$15,826	$2,355	$504	$18,684
Deficiency Appropriation	0	0	0	0	0
Cost Containment	0	0	0	0	0
Budget Amendments	0	142	0	0	142
Reversions and Cancellations	0	-1,850	-480	-3	-2,333
Actual Expenditures	**$0**	**$14,117**	**$1,875**	**$501**	**$16,493**
Fiscal 2018					
Legislative Appropriation	$0	$24,890	$2,444	$561	$27,895
Cost Containment	0	0	0	0	0
Budget Amendments	0	0	0	0	0
Working Appropriation	**$0**	**$24,890**	**$2,444**	**$561**	**$27,895**

Note: The fiscal 2018 appropriation does not include deficiencies, targeted reversions, or across-the-board reductions. Numbers may not sum to total due to rounding.

Fiscal 2017

Actual expenditures for fiscal 2017 were $16,493,145 a net decrease of $2,191,266 from the legislative appropriation.

A budget amendment added $141,532 in special funds for centrally budgeted salary increments.

This action was offset by a total of $2,332,798 in cancellations. The Maryland Institute for Emergency Medical Services Systems (MIEMSS) canceled $1.6 million in special funds originally appropriated for maintenance for the upgraded communications system that has not yet been implemented. Another $250,437 in special funds was canceled due to vacant positions. MIEMSS canceled $479,559 in federal funds due to vacant contractual positions for the Emergency Response System project for part of the fiscal year. Cancellations in reimbursable funds totaled $3,000.

Fiscal 2018

To date, the legislative appropriation has not changed.

Appendix 2
Major Information Technology Projects
Maryland Institute for Emergency Medical Services Systems
Statewide Emergency Management Communications System Upgrade

<table>
<tr><td>Project Status</td><td colspan="3">Implementation.</td><td colspan="2">New/Ongoing Project:</td><td colspan="3">Ongoing.</td></tr>
<tr><td>Project Description:</td><td colspan="8">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.</td></tr>
<tr><td>Project Business Goals:</td><td colspan="8">The goal is to have a highly reliable, next generation communications system which 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.</td></tr>
<tr><td>Estimated Total Project Cost:</td><td colspan="3">$15,550,000</td><td colspan="3">Estimated Project Development Cost:</td><td colspan="2">$15,550,000</td></tr>
<tr><td>Project Start Date:</td><td colspan="3">December 1, 2015.</td><td colspan="3">Projected Completion Date:</td><td colspan="2">June 15, 2020.</td></tr>
<tr><td>Schedule Status:</td><td colspan="8">MIEMSS released a new Request for Proposal (RFP) to retain a systems integrator in 2017 due to low response to the first RFP released in 2016. The evaluation phase is complete and MIEMSS is working with a vendor to bring a contract to the Board of Public Works for approval. Implementation is currently scheduled to begin in July 2018 and end in June 2020.</td></tr>
<tr><td>Cost Status:</td><td colspan="8">MIEMSS estimates the upgrade costs will total between $14.5 million, based on actual expenditures and projections from a consultant's report, and $15.5 million, based on information from vendor proposals. An exact project cost is not available and will not be decided until the procurement process is complete, but MIEMSS reports that funds allocated in fiscal 2018 and 2019 would be sufficient to fund the project.</td></tr>
<tr><td>Scope Status:</td><td colspan="8">The scope has not changed.</td></tr>
<tr><td>Project Management Oversight Status:</td><td colspan="8">This project was designated a Major Information Technology Project in fall 2016. As such, the Department of Information Technology is now providing oversight. The fiscal 2019 allowance includes $50,000 for oversight.</td></tr>
<tr><td>Identifiable Risks:</td><td colspan="8">High-level risks for this project include: resource availability and implementation. Medium-level risks include: level of technicality, user interface, organizational culture, supportability, and flexibility. The project is complex and requires a significant amount of infrastructure capacity, new training, customization, and the ability to interface with new and existing systems. There is a potential for resistance from end users who are familiar with the existing legacy application. The level of internal support required by the agency to host the system, complex implementation, and flexibility within the system needed to allow for future enhancements and changing technologies also all pose risks.</td></tr>
<tr><th>Fiscal Year Funding ($ in Thousands)</th><th>Prior Years</th><th>FY 2019</th><th>FY 2020</th><th>FY 2021</th><th>FY 2022</th><th>FY 2023</th><th>Balance to Complete</th><th>Total</th></tr>
<tr><td>Personnel Services</td><td>$0.0</td><td>$0.0</td><td>$0.0</td><td>$0.0</td><td>$0.0</td><td>$0.0</td><td>$0.0</td><td>$0.0</td></tr>
<tr><td>Professional and Outside Services</td><td>8,650.0</td><td>3,400.0</td><td>50.0</td><td>1,750.0</td><td>1,700.0</td><td>0.0</td><td>0.0</td><td>15,550.0</td></tr>
<tr><td>Other Expenditures</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td></tr>
<tr><td>Total Funding</td><td>$8,650.0</td><td>$3,400.0</td><td>$50.0</td><td>$1,750.0</td><td>$1,700.0</td><td>$0.0</td><td>$6,900.0</td><td>$15,550.0</td></tr>
</table>

Appendix 3
Object/Fund Difference Report
Maryland Institute for Emergency Medical Services Systems

Object/Fund	FY 17 Actual	FY 18 Working Appropriation	FY 19 Allowance	FY 18 - FY 19 Amount Change	Percent Change
Positions					
01 Regular	94.00	94.00	94.00	0.00	0%
02 Contractual	15.03	20.00	22.00	2.00	10.0%
Total Positions	**109.03**	**114.00**	**116.00**	**2.00**	**1.8%**
Objects					
01 Salaries and Wages	$ 9,173,896	$ 9,498,076	$ 9,354,073	-$ 144,003	-1.5%
02 Technical and Spec. Fees	1,497,873	1,908,332	2,106,116	197,784	10.4%
03 Communication	944,893	9,654,903	4,395,727	-5,259,176	-54.5%
04 Travel	488,124	713,530	746,084	32,554	4.6%
06 Fuel and Utilities	140,545	143,077	145,346	2,269	1.6%
07 Motor Vehicles	256,071	247,899	256,378	8,479	3.4%
08 Contractual Services	2,337,952	4,051,385	4,188,108	136,723	3.4%
09 Supplies and Materials	144,399	151,252	154,538	3,286	2.2%
10 Equipment – Replacement	227,991	122,645	99,300	-23,345	-19.0%
11 Equipment – Additional	76,721	65,015	85,715	20,700	31.8%
12 Grants, Subsidies, and Contributions	1,070,545	1,170,000	1,121,050	-48,950	-4.2%
13 Fixed Charges	134,135	169,023	169,528	505	0.3%
Total Objects	**$ 16,493,145**	**$ 27,895,137**	**$ 22,821,963**	**-$ 5,073,174**	**-18.2%**
Funds					
03 Special Fund	$ 14,116,889	$ 24,889,840	$ 19,584,898	-$ 5,304,942	-21.3%
05 Federal Fund	1,875,186	2,444,280	2,532,800	88,520	3.6%
09 Reimbursable Fund	501,070	561,017	704,265	143,248	25.5%
Total Funds	**$ 16,493,145**	**$ 27,895,137**	**$ 22,821,963**	**-$ 5,073,174**	**-18.2%**

Note: The fiscal 2018 appropriation does not include deficiencies, targeted reversions, or across-the-board reductions. The fiscal 2019 allowance does not include contingent reductions or cost-of-living adjustments.

Appendix 4
Fiscal Summary
Maryland Institute for Emergency Medical Services Systems

Program/Unit	FY 17 Actual	FY 18 Wrk Approp	FY 19 Allowance	Change	FY 18 - FY 19 % Change
01 General Administration	$ 16,493,145	$ 19,245,137	$ 19,421,963	$ 176,826	0.9%
02 Information Technology Project	0	8,650,000	3,400,000	-5,250,000	-60.7%
Total Expenditures	**$ 16,493,145**	**$ 27,895,137**	**$ 22,821,963**	**-$ 5,073,174**	**-18.2%**
Special Fund	$ 14,116,889	$ 24,889,840	$ 19,584,898	-$ 5,304,942	-21.3%
Federal Fund	1,875,186	2,444,280	2,532,800	88,520	3.6%
Total Appropriations	**$ 15,992,075**	**$ 27,334,120**	**$ 22,117,698**	**-$ 5,216,422**	**-19.1%**
Reimbursable Fund	$ 501,070	$ 561,017	$ 704,265	$ 143,248	25.5%
Total Funds	**$ 16,493,145**	**$ 27,895,137**	**$ 22,821,963**	**-$ 5,073,174**	**-18.2%**

Note: The fiscal 2018 appropriation does not include deficiencies, targeted reversions, or across-the-board reductions. The fiscal 2019 allowance does not include contingent reductions or cost-of-living adjustments.