Maryland Institute *for*
Emergency Medical Services Systems

ANNUAL REPORT

2024–2025

MARYLAND EMS
A SYSTEM SAVING LIVES

FY2025 MIEMSS ANNUAL REPORT

ABOUT MIEMSS

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; certifies and licenses EMS clinicians; conducts and 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 Maryland EMS Operations Fund, developing and promulgating regulations and protocols, proposing EMS system legislation, licensing/certifying EMS clinicians, 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.

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www.miemss.org

MISSION, VISION, AND KEY GOALS

MISSION

To provide leadership, coordination, oversight, and resources to ensure that Maryland's statewide emergency medical service (EMS) system delivers optimal care to reduce preventable deaths, disability, and discomfort.

VISION

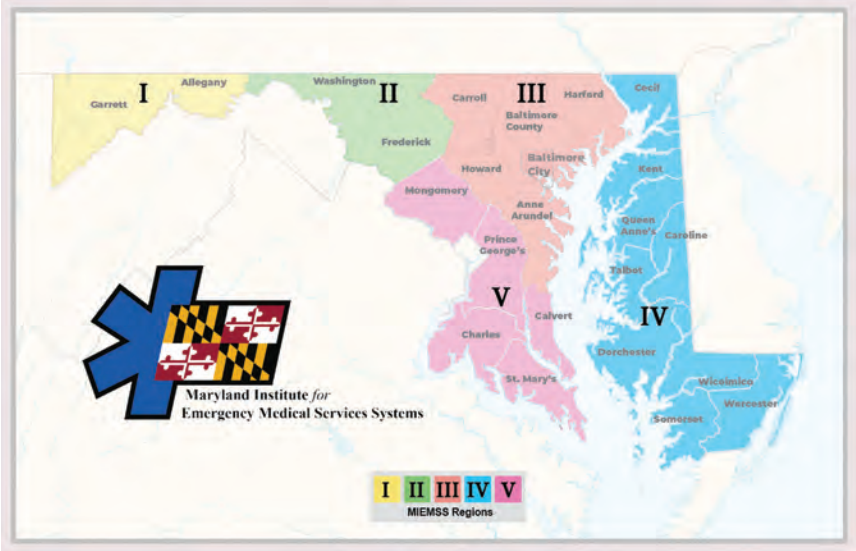
To be a state EMS system acknowledged as a leader for providing the highest quality patient care and that is sought out to help other EMS systems attain the same level of performance.

KEY GOALS

1. Ensure EMS clinicians are optimally prepared and qualified for the care they are called upon to provide.
2. Ensure all aspects of the EMS system benefit from qualified EMS medical direction.
3. Ensure Maryland EMS educational programs meet the needs of EMS clinicians and the patients they serve.
4. Ensure EMS clinical care reflects best practices, statewide.
5. Develop systems of care appropriate for the emergency conditions encountered by Marylanders.
6. Ensure that EMS is considered part of the continuum of health care.
7. Develop and maintain EMS communications systems that are integrated and interoperable.
8. Support implementation of Next Generation 9-1-1.
9. Ensure the Maryland EMS Operations Fund is a sustainable source of support for system infrastructure.
10. Ensure that evaluation is part of the EMS culture at all levels.

MARYLAND EMS REGIONS

Maryland's EMS system is composed of five regions. Each region has a Regional EMS Advisory Council defined by regulation. Each council focuses on grants, training, EMS policies and protocols, legislation, and communications. Input from each Regional EMS Advisory Council is provided to the Statewide EMS Advisory Council for recommendation to the EMS Board. MIEMSS' regional coordinators support the councils, facilitate communication, and address regional EMS issues.



STATE EMS BOARD CHAIR'S MESSAGE

Clay B. Stamp, NRP
Chairman, EMS Board

On behalf of the Maryland State EMS Board, I want to recognize the extraordinary work of our EMS clinicians, MIEMSS leadership, and system partners who keep Maryland strong.

This past year reminded us that our system is not defined by buildings or protocols. It is defined by people. Every day, clinicians, hospitals, and public safety partners step forward to make a positive difference for those in need. Sometimes it is saving a life, sometimes easing suffering, and sometimes simply being there in a moment of fear. Each act matters.

As a Board, our commitment is to support that work: ensuring our workforce is ready, advancing best practices, and securing equitable access to high-quality care for every Marylander, regardless of geography or circumstance. Vision 2030 is our roadmap, and the progress outlined in this report reflects the dedication of thousands who carry out that mission day after day. On behalf of the Board, I offer both gratitude for your service and confidence in the future we are building together.

EXECUTIVE DIRECTOR'S MESSAGE

Theodore R. Delbridge, MD, MPH
Executive Director, MIEMSS

As I begin to compose this introduction, a Maryland State Police helicopter is on final approach to the R Adams Cowley Shock Trauma Center rooftop helipad. For the most part, the people who look up from the sidewalk below have little notion of the incredible expertise, dedication, coordination, and sophistication that made it possible for the on-board injured person to receive life-saving care and be brought to the Shock Trauma Center for subsequent expert treatment. Yet, what they count on is a system that, in the past year, answered more than one million calls for help. This year, more than 575,000 people, fellow Marylanders and visitors, were safely taken to emergency departments for definitive care. Maintaining and continuously improving a system that cares for more than 2,700 people each day requires multi-disciplined, collaborative effort.

The Maryland emergency medical services (EMS) system benefits from input by many stakeholders, including the State EMS Advisory Council, multiple quality improvement committees, a Pediatric Emergency Medical Advisory Committee, jurisdictional officials, EMS medical directors, regional councils, Commercial Ambulance Services Advisory Committee, Maryland State Firefighters Association, and constituents. Collectively, they ensure that the Maryland Institute for Emergency Medical Services Systems (MIEMSS) and the State EMS Board benefit from multidisciplined expertise and perspectives to guide the ongoing evolution of the statewide EMS system. Five years ago, this sort of collaborative energy led to *Vision 2030: Plan for the EMS System*. Now, halfway through the decade, we are assessing our progress in the context of our goals.

An important focus of work has been to improve the information available to EMS clinicians. To that end, development has continued on *The Maryland Medical Protocols for Emergency Medical Services* application. The goal is to make it as valuable and usable a reference as possible. Additional effort has been spent developing the Emergency Department Advisory System (EDAS). EDAS will replace the legacy County Hospital Alert Tracking System (CHATS), and its familiar yellow and red alerts. EDAS will provide in-field EMS clinicians with objective indications of emergency department "busyness", including the number of ambulances already there or enroute. With this information in hand, EMS clinicians can make better-informed decisions when determining patient destinations.

We continue to work to improve patient experiences on arrival to emergency departments, predominantly by tracking EMS-to-ED transfer of care intervals. To be certain, this also has profound implications for EMS resource management, and helping EMS units be available in their communities. The goal remains transfer of care within 35 minutes 90% of the time. Forty-four percent of receiving facilities reach this goal, and several more are close to achieving it. Each week performance data is shared with each facility. Monthly, it is shared with the Health Services Cost Review Commission (HSCRC).

As an indication that EMS is considered part of the healthcare continuum, we continue to serve on important workgroups addressing meaningful concerns. One such workgroup is the Emergency Department Wait Time Reduction Commission. EMS has a seat at the table as this statutorily defined group assesses challenges and potential strategies to address ED overcrowding and resulting delays.

Trauma is the standard for defining a system of care. In Maryland, extensive work has also led to building systems of care for stroke, cardiac, and perinatal patients. Over the past year, the EMS for Children team has developed a pediatric readiness facility recognition program. The program, which is voluntary on the part of hospitals, will help hospitals better prepare to care for children, and will help EMS clinicians make the best choices of destinations for their pediatric patients.

One thing this report cannot adequately capture or convey is the spirit of the nearly 20,000 EMS clinicians (emergency medical responders, emergency medical technicians, cardiac rescue technicians, and paramedics) whose knowledge, skills, abilities, dedication, and empathy are the fabric of our statewide EMS system. It is them, hundreds standing at the ready at any given moment of any given day, that convey confidence to the people, not knowing what it takes, that the right help will be come when it is needed the most.

Thank you for your interest in this report and Maryland's statewide EMS system.

MEDICAL DIRECTION

The State EMS Medical Director provides leadership and coordination for state medical programs, protocols, and quality assurance in Maryland's EMS system. In addition, the Aeromedical Director, Associate State EMS Medical Director for Pediatrics, and Regional EMS Medical Directors for each of the five regions collaborate with the State EMS Medical Director to update the Maryland Medical Protocols for Emergency Medical Services *on an annual basis. Regional EMS Medical Directors also assist the Jurisdictional EMS Medical Directors in each of Maryland's 28 jurisdictional EMS operational programs with protocol implementation and quality assurance initiatives. Fourteen of Maryland's EMS Medical Directors are board-certified in EMS medicine. A network of 49 EMS base stations located in emergency departments provide online medical direction through Emergency Medical Resource Center and Systems Communications (EMRC/SYSCOM).*

Office of the State EMS Medical Director: Timothy P. Chizmar, MD, FAEMS, FACEP

The Office of the State EMS Medical Director (OMD) ensures that patients who interact with the Maryland EMS system receive consistent, high-quality out-of-hospital medical care. Dr. Chizmar leads the statewide Protocol Review Committee (PRC) and EMS Quality Improvement Committee (QIC) and provides medical direction to the Jurisdictional Advisory Committee. The office closely coordinates efforts with the Regional Medical Directors, Regional Coordinators, and MIEMSS Office of Care Integration staff. OMD promotes creative, responsive, and evidence-based programs for the delivery of medical care to Maryland residents and visitors.

Office of the Aeromedical Director: Douglas J. Floccare, MD, MPH

The Office of the Aeromedical Director provides the necessary physician medical support to the Maryland State Police Aviation Command (MSPAC) to meet the emergency medevac needs of Maryland's citizens. Aeromedical Operations is actively involved in ongoing training and verification of technical proficiency for Maryland State Police flight paramedics and provides around-the-clock consultation support to Systems Communications (SYSCOM) for medevac requests and medical direction. Aeromedical teams are actively involved in the development of new patient care protocols and the oversight of ongoing care.

Associate State EMS Medical Director for Pediatrics: Jennifer F. Anders, MD

The Associate State EMS Medical Director for Pediatrics in Maryland, also known as EMS for Children (EMSC), plays a vital role in ensuring that the state's EMS system effectively addresses the unique needs of pediatric patients. She provides medical oversight and leadership for the EMS for Children program, guiding the development and implementation of pediatric-specific clinical guidelines, education, and quality improvement initiatives; helps train EMS clinicians through programs like Pediatric Education for Prehospital Professionals (PEPP); and works to ensure pediatric readiness across EMS agencies and emergency departments. The Associate State EMS Medical Director for Pediatrics leads efforts to standardize pediatric equipment, protocols, and interfacility transfer practices. Dr. Anders manages federal EMSC grants, promoting pediatric disaster preparedness, and participating in key advisory committees such as the Pediatric Emergency Medical Advisory Committee (PEMAC). Through these responsibilities, the Associate State EMS Medical Director helps ensure that children across Maryland receive high-quality, developmentally appropriate emergency medical care.

Regional Medical Direction

MIEMSS coordinates a network of Regional EMS medical directors, who serve as the principal medical advisors for their respective regional councils, hospitals in the region, and jurisdictional medical directors. As members of the MIEMSS Protocol Review Committee, these physicians propose new protocols and revisions to existing protocols. They assist the jurisdictional medical directors with QA/QI and support educational efforts, with a particular focus on new protocol implementation. In conjunction with the MIEMSS Office of Clinical Integration and MIEMSS Regional Coordinators, the Regional EMS medical directors conduct hospital base station site surveys. They also assist the State EMS medical director with the development of base station education and credentialing of hospital base station instructors.

Online Medical Direction: EMS Base Stations

EMS base stations are a critical component of Maryland EMS. Base stations provide real-time support and guidance to EMS clinicians in the field. There are 49 Maryland hospital base stations designated by the State EMS Board.

Physicians and nurses who answer base station calls are required to successfully complete the MIEMSS Base Station Communications Course for Emergency Department Personnel and the Maryland EMS Updates for Hospital Base Station Personnel training video to ensure they are prepared to communicate with EMS clinicians to provide real-time medical consultation. From July 2024 through June 2025, as a result to multiple hospitals facilitating the base station course and the addition of 11 instructors, MIEMSS issued 513 base station certificates to emergency physicians and nurses.

Cardiac Arrest Steering Committee

The Cardiac Arrest Steering Committee (CASC), as authorized by the State EMS Board, provides guidance to MIEMSS' medical and executive leadership teams on matters related to sudden cardiac arrest in Maryland. The committee actively works on matters related to public health and safety by sharing best

practices regarding telecommunicator CPR, prehospital cardiac arrest management performance improvement, and further development of a comprehensive statewide system for the treatment of sudden cardiac arrest. In FY 2025, CASC introduced several new members to its roster, including emergency clinicians, 9-1-1 administrators, and pediatric champions, and empowered four subcommittees to continue efforts to improve cardiac arrest survival through 9-1-1 and EMS synergy and community engagement.

CLINICAL CARE

Maryland's EMS clinicians respond to more than one million calls for help each year, and transport more than 550,000 patients to emergency departments for their continuing care. Statewide EMS protocols guide the preponderance of care provided. The protocols are continually evaluated to identify opportunities to improve care and resulting outcomes. Protocol development and revisions are informed by data from the statewide eMEDS® patient care report system and problem-specific registries.

The Maryland Medical Protocols for EMS

To reflect best practices and evidence-based medicine and define appropriate EMS evaluation and treatment, *The Maryland Medical Protocols for Emergency Medical Services* are updated annually with expert review and approval by the Protocol Review Committee. This committee incorporates multidisciplinary input from medical directors, emergency physicians, nurses, and EMS clinicians from across the state.

The following are significant additions and modifications to *The Maryland Medical Protocols for Emergency Medical Services* effective on July 1, 2025:

- **Adult High-Performance CPR:** This change incorporates high-performance CPR principles within the BLS Adult Cardiac Arrest Algorithm. The separate High-Performance CPR protocol in the Procedures section has been removed.
- **Alcohol Withdrawal Protocol:** This revision incorporates the use of midazolam for treatment of moderate and severe alcohol withdrawal. Determination of withdrawal severity is based upon the Brief Alcohol Withdrawal Scale (BAWS).
- **Calcium Chloride:** For consistency, calcium chloride administration times for adult patients have been changed to 3-5 minutes for all indications.
- **Cefazolin:** This new protocol adds an antibiotic, cefazolin, for treatment of patients with open fractures, amputations, and mangled or degloved extremities. Changes are reflected in the Multiple/Severe Trauma, Hand/Upper and Lower Extremity Trauma, and ALS Pharmacology sections.
- **Cold-Related Emergencies:** This modification adds a provision for rapid transport of hypothermic cardiac arrest patients to an Extracorporeal Cardiopulmonary Resuscitation (ECPR)-capable hospital if the facility is within 30 minutes.
- **Dexamethasone:** The maximum dose of dexamethasone increases from 10 mg to 15 mg for adult and pediatric patients to reflect dosing recommendations for respiratory conditions in the medical literature.
- **Drowning:** This modification updates the Near-Drowning Protocol to meet current clinical practices and terminology. Rather than drowning and near-drowning, the classifications are now submersion injury and submersion injury with cardiac arrest. Termination of resuscitation criteria, based upon submersion time and water temperature, have been added, as have transport guidelines that include considerations for transport to ECPR-capable hospitals.
- **Droperidol:** This modification of the ALS Droperidol Pharmacology adds Intramuscular (IM) as an acceptable route of droperidol administration for treatment of nausea and vomiting. The requirement for a medical consultation for administration of diphenhydramine in the event of a dystonic reaction has been removed.
- **High-Consequence Infectious Diseases (HCID) Procedure:** These revisions update the prior Emerging Infectious Diseases (EID) procedure to incorporate current practices and terminology. The protocol outlines a broader framework that may be applied to novel diseases, rather than being Ebola-specific.
- **Hypertensive Disorders of Pregnancy:** This new protocol provides treatment guidelines for moderate-to-severe gestational hypertension and preeclampsia, as well as modifications to the existing treatment of eclampsia. Labetalol has been added to the ALS Pharmacology for treatment of severe hypertension. Indications for magnesium sulfate have been expanded to include treatment of moderate and severe hypertension and the frontline treatment of eclamptic seizures.
- **Intraosseous Infusion Procedure:** This modification adds the distal femur as an approved insertion site for pediatric patients. A reference chart that shows preferred IO site by age is included.
- **IV Infusion Pump Pharmacology Optional Supplemental Protocol (OSP):** This revision adds sodium bicarbonate to the IV Infusion Pump Pharmacology section.
- **Naloxone "Leave Behind" Protocol:** The Naloxone "Leave Behind" Protocol moves from an optional supplemental protocol to standard EMS treatment protocol within the Overdose/Poisoning section.
- **Pediatric Tachycardia Algorithm:** Medical consultation is required for cardioversion of pediatric patients with

narrow complex tachycardia. This revision ensures consistency with the consultation requirement for cardioversion of regular wide-complex tachycardia.

- **Removal of Unused Pilot and Optional Supplemental Protocols (OSP):** The Vascular Doppler Device Pilot Protocol and the Mobile Integrated Health: COVID-19 Monoclonal Antibody Administration Optional Supplemental Protocol have been removed due to lack of current use.
- **Sepsis – Adult:** These modifications incorporate the earlier use of vasopressors in the treatment of adult patients who are severely hypotensive or "volume sensitive" (CHF, ESRD). These modifications have also been added to the Shock: Hypoperfusion – Adult Protocol.
- **Tranexamic Acid (TXA):** The administration time has been reduced from 10 minutes to 3-5 minutes.
- **Transport to Freestanding Emergency Medical Facility Optional Supplemental Protocols (OSP):** The Transport to Freestanding Medical Facility at Aberdeen Optional Supplemental Protocol and Transport to Freestanding Medical Facility (Base Station or Non-Base Station) Optional Supplemental Protocol have been combined.
- **Video Laryngoscopy for Orotracheal Intubation:** Video laryngoscopy moves from being an optional supplemental protocol into standard EMS treatment protocol. EMS operational programs must have video laryngoscopy capability no later than July 1, 2026.
- **Wilderness EMS Optional Supplemental Protocols (OSP):** These updates provide consistency with current practices and the standard EMS treatment protocols. Substantive changes include: the addition of hypertonic saline for treatment of acute exercise-induced hyponatremia (with medical consultation); doxycycline administration to pediatric patients for prophylactic treatment of tick bites; and targeted MAP readings for patients with spinal trauma.

Electronic Maryland EMS Data System (eMEDS®)

The electronic Maryland EMS Data System (eMEDS®) is one of the few statewide comprehensive prehospital patient care reporting systems in the United States. eMEDS® relies on an ImageTrend® software product that complies with the latest standards set by the National Emergency Medical Services Information System (NEMSIS). MIEMSS holds a statewide site license for eMEDS®, offering it at no cost to local jurisdictions. All Maryland jurisdictional EMS operational programs (JEMSOPs) and approximately 20% of commercial ambulance companies submit patient care reports directly into eMEDS®, while most commercial service reports are automatically imported into eMEDS® from third-party electronic health platforms. All Maryland healthcare facilities have access to the prehospital patient care reports through the Hospital Hub online application.

eMEDS® supports several key goals, including:

- **Uniform Data Collection:** Ensures consistent reporting of prehospital care by Maryland's EMS clinicians.
- **Performance Measurement:** Provides a basis for evaluating patient care and compliance with protocols by local departments, EMSOPs, regional medical directors, and MIEMSS.
- **Standardized Reporting:** Facilitates compliant data reporting to the National EMS Information System (NEMSIS).
- **Data Integration:** Supports integration with statewide systems such as Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE), Chesapeake Regional Information System for Patients (CRISP), Overdose Detection Mapping Application Program (ODMAP), Maryland Trauma Registry, Cardiac Arrest Registry to Enhance Survival (CARES), Emergency Department Advisory System (EDAS), and MIEMSS' eLicensure System.
- **Local EMSOP Integration:** Includes integration with 9-1-1 center computer-aided dispatch (CAD) systems, exports to third-party billing vendors for reimbursement, and data sharing with third-party vendors for local reporting, dashboard creation, and fire incident reporting.
- **Maintaining and Updating EMS Systems:** Updated to version 3.5 in 2023, eMEDS® 3.5.1 is under review for implementation to maintain NEMSIS compliance.

eMEDS® Mobile Integrated Health (MIH) Module

MIEMSS continues to support enhancements to the eMEDS® Mobile Integrated Health (MIH) module, developed in 2020, to improve data collection and guide future MIH efforts. As of the end of FY 2025, over 12,100 reports have been recorded using the MIH module. Starting in FY 2024, MIEMSS began working with CRISP to export MIH data to the state's designated health information exchange.

eMEDS® Support Desk (emeds-support@miemss.org)

The eMEDS® application includes a MIEMSS support desk that handles requests from EMS clinicians, EMS Operational Program (EMSOP) administrators, and healthcare facility personnel across the state. Common issues include password resets, login problems, access level questions, report writer functionality, EMSOP integrations, and general application inquiries. During FY 2025, the support desk processed over 1,500 support tickets.

eMEDS® Statewide Steering Committee

Jurisdictional, commercial, and hospital stakeholders continue to meet on a quarterly basis to discuss topics for eMEDS® improvement. Topics include system-wide integrations, enhancements, and change requests. To address continual improvement, change requests for the eMEDS® application can be submitted by any stakeholder who uses or interacts with the system. The committee reviews requests and supports actions for implementation.

Maryland State Police Aviation Command

In FY 2025, the Maryland State Police Aviation Command (MSPAC) provided care to 2,050 patients. Of these patients,

2,027 (99%) were prehospital at the request of local EMS and 23 (1%) were transported between hospitals to a higher level of care. This year, MSPAC responded to 747 motor vehicle crashes, 537 falls, 69 gunshot wounds, 66 pedestrian injuries, 55 assaults, 49 burns, 40 stabbings, 18 industrial injuries, and 13 drownings.

MSPAC uses the AgustaWestland 139 (AW-139) model of aircraft as an excellent platform for multiple missions. Equipped with the most current safety technology as recommended by the National Transportation Safety Board, the AW-139 aircraft are powerful enough to carry two patients and two EMS clinicians despite the challenging heat and humidity of the summer months. The acquisition of an FAA-certified Flight Training Device has allowed significant hours of pilot training to be conducted under simulated conditions, not only saving aircraft flight hours but also allowing the simulation of in-flight emergencies not able to be performed in an actual flying aircraft.

Rapid Sequence Intubation (RSI)

Adult and pediatric rapid sequence intubation (RSI) programs as defined in The Maryland Medical Protocols for Emergency Medical Services are designed to address the needs of patients whose airways are otherwise difficult to secure, including those with severe head injuries. Flight paramedics administer neuromuscular blocking medications that facilitate endotracheal intubation for patients who are not breathing adequately. Scenario-based simulation training modeled after real-life incidents enhances the knowledge and skills of flight paramedics and provides an effective method for recertification in Advanced Cardiac Life Support (ACLS), International Trauma Life Support (ITLS), and Pediatric Advanced Life Support (PALS).

Prehospital Blood

The blood transfusion provides lifesaving treatment for patients suffering from hemorrhagic shock. The Maryland EMS system developed a statewide Maryland Medical Protocol for EMS Pilot Protocol that enables paramedics to transfuse low-titer Type O+ whole blood to critically ill patients who are suffering from severe hemorrhage as a result of trauma or a medical problem. Whole blood, compared to individual blood components, is often preferred for the most critically injured patients, because it contains red blood cells and the clotting factors that help to slow bleeding and restore oxygenation to vital organs.

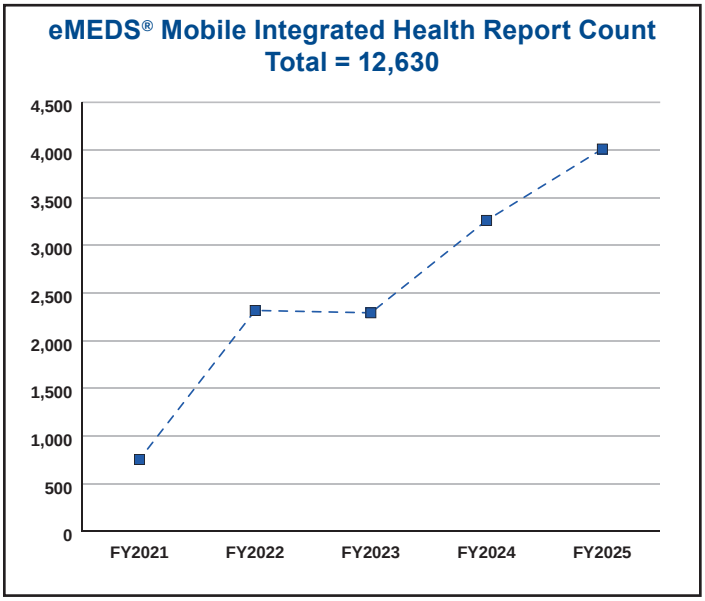
In cooperation with MIEMSS and the University of Maryland Medical Center (UMMC) Blood Bank, the Maryland State Police Aviation Command (MSPAC) launched its whole blood program in May 2023. MSPAC now carries two units of whole blood on all seven of its helicopters. This provides service to patients in all five regions of Maryland. In FY 2025, MSPAC flight paramedics provided whole blood transfusions to 101 patients.

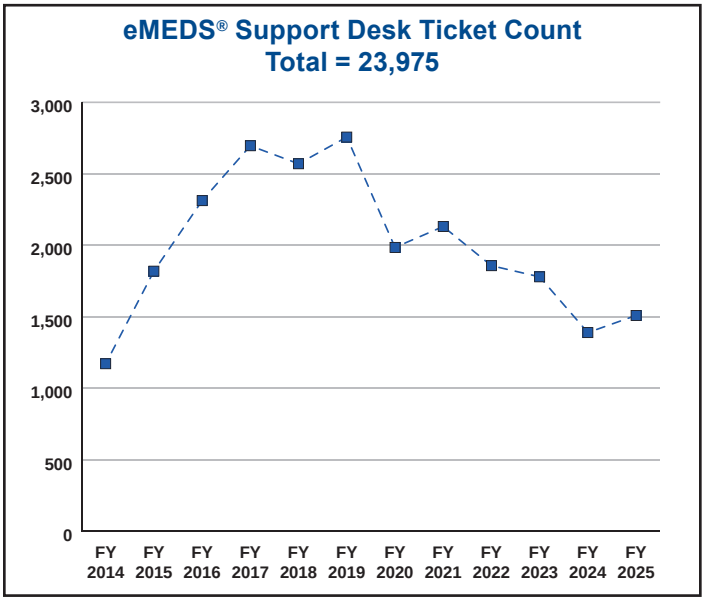
Pediatric EMS Care Committees

The Office of EMS for Children (EMSC) leads and coordinates resources to address the unique needs of children and families across Maryland. It focuses on injury and illness prevention, clinical protocols, standards of care, facility recognition, quality improvement, data analysis, interagency collaboration, and professional education. The goal is to enhance the efficient and effective delivery of out-of-hospital, hospital, and restorative care, promoting the health and wellbeing of children, youth, and families statewide.

EMSC coordinates state-level advisory committees, leads federal grant projects, and collaborates with state and local agencies on childhood health promotion and emergency care. It provides educational resources for families in partnership with other professional organizations. EMSC coordinates Maryland's Pediatric Emergency Medical Advisory Committee (PEMAC) and its subcommittees, the State Pediatric Quality Improvement Committee (QIC), and the Pediatric Data Analysis and Research Team (DART).

PEMAC, the Pediatric QIC, and DART meet bimonthly and support the PEMAC Annual Research Forum each November. PEMAC, with its interdisciplinary membership, develops and revises guidelines, legislation, policies, and protocols affecting





emergency medical care for children and youth. Current PEMAC working groups focus on the Family Advisory Network, injury prevention, and pediatric disaster preparedness. The Pediatric QIC coordinates the online Pediatric Base Station Course for Maryland's two pediatric base stations, which offer statewide pediatric medical direction and community education. Pediatric DART provides support for focus groups, pilot research projects, funded multicentered studies and quality improvement initiatives.

EMSC is an active member of the National Association of State EMS Officials (NASEMSO) Pediatric Emergency Care Council, East Region, and serves in a leadership role on the Committee for the Safe Transport of Children in Ambulances. EMSC works closely with the Maryland Emergency Nursing Association (ENA) Council and three local chapters to promote pediatric education for all hospitals across Maryland and to distribute current prevention information.

EMS CLINICIANS

The dedicated volunteer and career clinicians who underpin Maryland's EMS system strive to deliver state-of-the-art, out-of-hospital/prehospital emergency care at every hour of the day and night. Maryland EMS clinicians continually work to maintain best practices that reflect excellence in patient care. Recruitment and retention of a qualified workforce require continuous attention, and occupational stressors demand enhanced awareness of and focus on clinician wellness.

Office of Clinician Services

The Office of EMS Clinician Services (OCS) coordinates Maryland's EMS educational programs. The office supports the efforts that advance the knowledge and skills of EMS clinicians who provide prehospital emergency care throughout the state. OCS provides support through four primary functions:

- Educational Oversight: Verifies that educational opportunities meet national and state requirements for licensure and certification.
- Clinician Support: Assists clinicians with registration, initial certification processes, license renewals, and reciprocities from other states.
- System Management: Maintains the licensure tracking system, ImageTrend®, and the Online Training Center that delivers training wherever the clinician is, at any time.
- Through these coordinated activities, OCS ensures Maryland's EMS clinicians receive the training, resources, and administrative support necessary to maintain high standards of emergency care.

Clinician Preparedness and Qualifications

Maryland's EMS clinician preparation focuses on robust educational standards that require training and effective medical oversight. This approach helps ensure clinicians are prepared to handle the demanding work of prehospital emergency care.

- **Educational Foundation:** Maryland EMS programs maintain alignment with both NREMT standards and Committee on Accreditation for EMS Professions (CoAEMSP) requirements. CoAEMSP holds the distinction of being the only recognized accreditation organization for Paramedic programs under Commission on Accreditation of Allied Health Education Programs, the largest programmatic accreditor of health sciences professions education.
- **Initial Certification** requires EMT students to complete an accredited EMS education program. Once they have completed the educational program, students are required to pass the National Registry exam and MIEMSS-administered psychomotor examinations, which comply with NREMT standards. Upon meeting these requirements, MIEMSS issues and updates the students' credentials in eLicensure.
- **Clinician Certification Renewal** requires clinicians to complete continuing education to maintain competencies and technical skills. EMS clinicians must stay current with annual updates to *The Maryland Medical Protocols for Emergency Medical Services.* Training videos and online verification are developed by the State Office of the EMS Medical Director, Media Services, and Clinician Services, and EMS clinicians are required to complete their work in the Online Training Center to ensure consistent, evidence-based care delivery.
- **Reciprocity** is a process by which individuals who possess EMS clinician certifications/licenses from other states may transfer their certification/license to Maryland. All candidates for reciprocity must have an equivalent state EMS license, certificate, or National Registry Credential and familiarity with *The Maryland Medical Protocols for Emergency Medical Services.*
- **Clinician Wellness and Support:** Recognizing the demanding nature of EMS work, Maryland supports and provides mental health resources and wellness support for all clinicians. Programs such as Critical Incident Stress Management (CISM) contribute to a healthy and responsive workforce prepared to deliver patient care. CISM provides crisis support services to EMS clinicians, firefighters, law enforcement officers, dispatchers, and other emergency personnel involved in stressful incidents. It is designed to help accelerate recovery for those experiencing severe stress reactions. CISM offers education, defusing stress, and debriefings conducted by psychosocial

and EMS professionals trained in critical incident stress management. Volunteer regional coordinators serve as contacts for local 9-1-1 centers and EMRC/SYSCOM. MIEMSS collaborates closely with local CISM/peer-support teams and the International Critical Incident Stress Foundation to enhance capabilities statewide. An initial three-day Critical Incident Stress Management course was held in 2025, as well as a statewide CISM/Peer Support symposium, bringing together public safety partners from across the state.

Clinician Licensure and Certification Records Management

MIEMSS uses eLicensure, a comprehensive clinician records management program, to process and track statewide certifications, affiliations, testing information, and other essential clinician information. This system standardizes processes and allows for comprehensive oversight. Hosted by ImageTrend®, eLicensure serves as the cornerstone of our certification system, providing a secure, web-based Licensure Management System that streamlines the entire credentialing process. This platform enables clinicians to apply for initial certification, manage renewals, and maintain their professional credentials online. Simultaneously, EMS agencies, training programs, and medical directors can verify credentials, monitor continuing education compliance, and track certification status in real-time.

For System Integration and Efficiency, eLicensure integrates with NREMT and MIEMSS' Online Training Center (OTC). The integration with NREMT allows for automatic verification of successful completion of national certification. The integration with the OTC provides tracking of the clinician's successful completion of online continuing education delivered within the OTC.

In FY 2025, Clinician Services, with support of Administration and Media Services, developed new web pages that provide the current process and timing of all initial licensures, certificates, renewals, and reciprocity. This information was strategically shared via social media, Maryland EMS News, and website notifications with clear navigation to each process on computers, phones, and other electronic devices.

Occupational Communication and Support

The Maryland EMS website, social media platforms, and newsletters play a important role in promoting a culture of safety for both EMS professionals and the patients they serve. These communication channels are used to share timely updates on clinical protocols, safety advisories, clinical/medical alerts, policy changes, and continuing education opportunities that reinforce best practices and risk-reduction strategies. The MIEMSS website provides access to safety resources such as infection control guidelines, mental health and wellness support, clinical alerts, and clinical decision-making tools, ensuring that EMS clinicians are equipped with the latest information to deliver safe, effective care.

Social media is used to amplify safety campaigns, recognize outstanding safety practices in the field, and quickly disseminate critical alerts, such as severe weather warnings, public health emergencies, or protocol updates. This year, the Office of the State EMS Medical Director and Media Services created a Clinical/Medial Alerts web page to share updated information about infectious disease, vaccines, and other related clinical/medical issues. This and other website content is designed to increase EMS clinicians' awareness to working in the field. MIEMSS produces its newsletter, *Maryland EMS News*, to provide a deeper insight into system-wide safety efforts, quality improvement initiatives, and lessons learned from incident reviews or sentinel events. Together, these platforms foster transparency, continuous learning, and shared responsibility, reinforcing a system-wide commitment to safety and quality in EMS operations across Maryland.

FY 2025 Office of Integrity Activity	
Initial and renewal background investigations completed	10,007
Reciprocity background investigations completed	642
Total background investigations completed	10,649
IRC investigations conducted	68
IRC Complaints Issued	59
IRC complaints forwarded to PRP	66
Complaints forwarded to EMS Board	63

EMS Board Actions	
Reprimands	11
Probation	48
Suspensions	14
Revocations	7
Remedial training	4
Surrenders	4
Random testing	6
Case Resolution Conferences	24
OAH hearings conducted	7
OAH hearings defaulted	1
Settlement agreements	13

Office of Integrity / Clinician Professionalism and Accountability

The Office of Integrity works to ensure the health, safety, and welfare of the public as it relates to the delivery of EMS by Maryland-licensed and certified EMS clinicians. It helps to ensure the quality of patient care by investigating complaints and allegations of prohibited conduct as defined by COMAR Title 30.02.04.01.

EMS Clinician Professionalism and Accountability

The Office of Integrity works closely with the State EMS Board, Attorney General's Office, Incident Review Committee (IRC), Peer-Review Panel (PRP), and EMS operational program (EMSOP) quality assurance officers statewide. The PRP is a 13-member panel of physicians representing the Maryland Board of Physicians, Maryland Medical Chirurgical Society, and EMSOP medical directors, and clinicians representing advanced life support, basic life support, Emergency Medical Responders and Emergency Medical Dispatchers. To create a quorum, it requires that a PRP member with the same clinician level as the clinician on review is present. The Peer-Review Panel, after reviewing complaints, communicates the results of the investigations presented by the Office of Integrity and recommends corrective and disciplinary actions to the State EMS Board.

EMS Clinician Awards (Maryland Stars of Life)

The 2025 Maryland Stars of Life Awards, presented during EMS Week, honored exceptional individuals and teams in Maryland's emergency medical services (EMS) community. These awards recognize extraordinary acts of heroism, clinical excellence, and teamwork in the line of duty.

Notable 2025 Awardees

- *EMD Clinician of the Year:* **B-Shift (individuals), Baltimore County 9-1-1 Call Center.** This award honored several personnel for their outstanding efforts in efficiently organizing and dispatching units during a mass casualty incident on December 17, 2024.
- *Maryland EMS-Geriatric Award:* **Yvette "Yvie" Rode.** This award recognized the Ocean City Firefighter-Paramedic for her outstanding contributions to geriatric emergency medical services. (oceancitymd.gov)
- *Maryland EMS-Children Award and The Leon W. Hayes Award for Lifetime Excellence in EMS:* **Richard "Rick" Koch, Sr., BS, NRP.** The late Rick Koch received both awards in recognition of his lifelong dedication and leadership in pediatric prehospital care education and advocacy.
- *EMS Clinician of the Year:* **Katelyn Killian.** This award recognized the Talbot County Department of Emergency Services Paramedic for her steadfast interest in prehospital pediatric treatment, education, and training, both among her EMS peers as well as the broader community.
- *Outstanding EMS Program Award:* **Salisbury-Wicomico Integrated Firstcare Team (SWIFT).** This award honored an innovative approach to delivering high-quality, comprehensive medical and behavioral health services outside the traditional emergency response model. (dorchesterchamber.org)
- *Maryland Star of Life Award:* **St. Mary's County and Charles County Fire, Rescue, and EMS, and Maryland State Police Aviation Command personnel.** This award recognized the coordinated efforts of several departments in the lifesaving rescue of a teenager involved in a severe motor vehicle crash. (hvfdems.org)
- *Executive Director's Award:* **Meritus Medical Center, Frederick Health Hospital, and Anne Arundel Medical Center.** This award recognized the emergency departments of three Maryland hospitals for their contributions to the EMS system, highlighting their collaborative efforts in the delivery of emergency medical services.

These awards celebrate the dedication and excellence of Maryland's EMS professionals and programs in enhancing patient care and saving lives.

Star of Life Executive Director Award: Frederick Health Hospital ED

Star of Life EMD Clinician of the Year Award: Ajee Myers-Williams, B-Shift, Baltimore County 9-1-1 Call Center

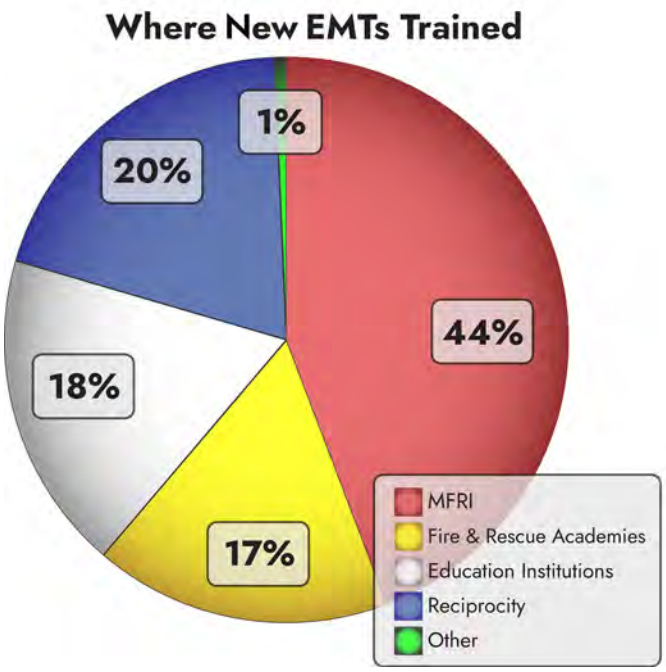
EDUCATION AND TRAINING

There are 45 educational programs across Maryland that provide Initial clinician education for EMS. These programs are approved by the State EMS Board, and include the University of Maryland Baltimore County, 13 community colleges, seven public safety training academies, and the Maryland Fire and Rescue Institute (MFRI). Initial Certification for EMS clinicians may be as an Emergency Medical Responder, Emergency Medical Technician, or Paramedic. In 2020, Maryland stopped issuing new Cardiac Rescue Technician certifications. Continuing education required for maintenance of certification and licensure is offered throughout the state over the course of each year through MFRI, various academies, educational programs, conferences, seminars, and the Online Training Center.

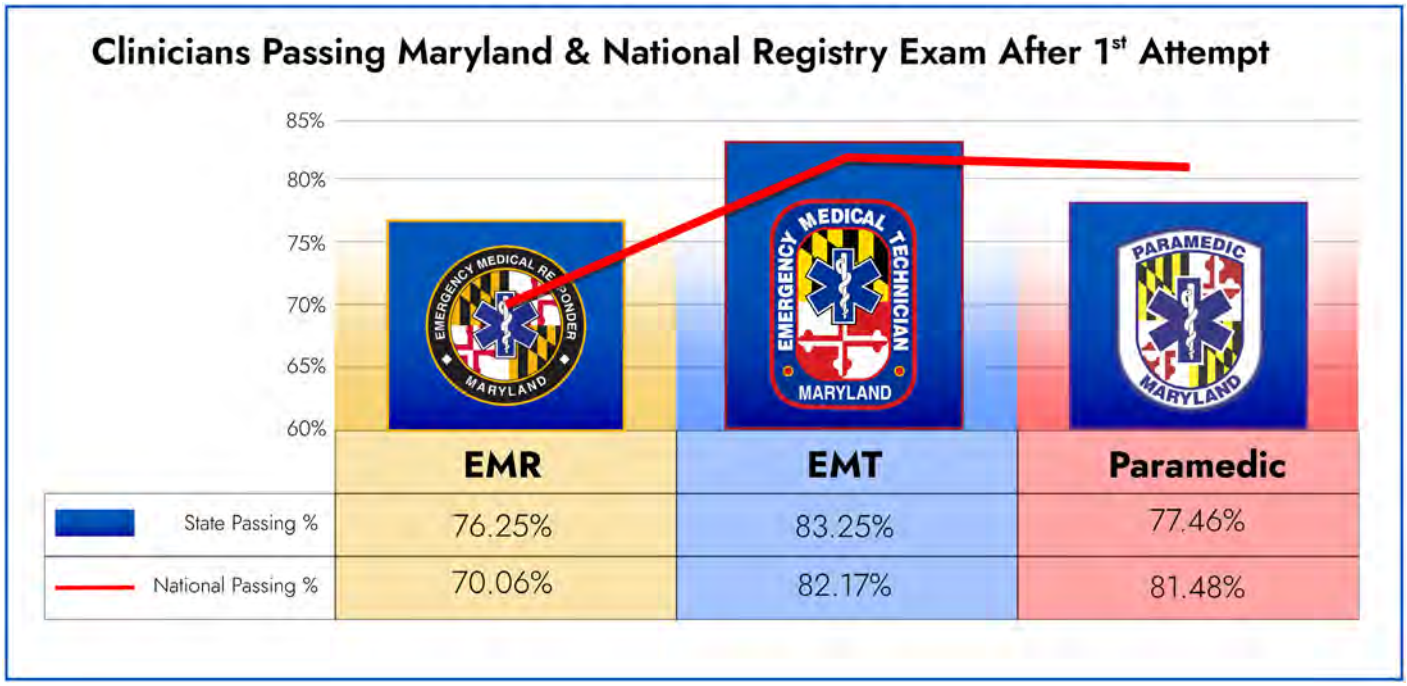
Clinician Resources

The MIEMSS website, social media outlets, and *Maryland EMS News* serve as comprehensive resources, providing the state's EMS clinicians with essential tools and information to support their professional practice.

- **Clinical Resources and Protocols.** Clinicians have immediate access to the current *Maryland Medical Protocols for Emergency Medical Services*, including regular updates, instructional videos, and supplementary guidance materials. This ensures that all clinicians have access to and can maintain current knowledge of state-approved treatment standards and clinical procedures.
- **Communication and Updates.** Real-time alerts, protocol updates, newsletters, and public health notices keep clinicians informed about important developments affecting their practice and patient care responsibilities.



- **Educational Opportunities.** Comprehensive listings of approved continuing education programs and online learning opportunities are available on the MIEMSS website. https://www.miemss.org/home/ems-providers#How-To, providing a simple way for clinicians to identify and access training that meets their professional development needs and certification requirements.
- **Administrative Support.** Essential forms and applications for recertification, scope of practice modifications,



and special waiver requests are readily accessible, streamlining administrative processes for both clinicians and their employing agencies.

Prehospital Pediatric Readiness – Pediatric EMS Champions

The Maryland EMS for Children (EMSC) program supports the Pediatric EMS Champions within the EMS Operational Programs. Selected for their commitment to pediatric care and their representation of local communities, these Champions play a key role in advancing pediatric EMS practices. They promote and facilitate pediatric continuing education, support safety and injury prevention initiatives, and encourage adherence to current pediatric care guidelines. Using "Sim on the Go" pediatric simulations and training equipment, Champions provide local education and expand access to enhanced pediatric skills training and simulation experiences. This work helps align Maryland with federal EMSC performance measures for pediatric readiness in EMS.

The 2024 National Prehospital Pediatric Readiness Project (NPPRP) assessment was used to survey EMS agencies regarding their pediatric capabilities. During the summer, EMS Pediatric Champions lead all Maryland EMS operational programs through the review and submission of assessments. The aggregate results provide guidance for the development of new pediatric education programs, performance evaluation tools, and family-centered care guidelines.

This year, two in-person forums produced new training resources for pediatric burn assessment, crash response and injury risk, EMS protocols and training tools, and programming of simulation monitors.

Pediatric Readiness in Emergency Departments – Pediatric Nurse and Physician Champions

Initiated in 2022, the Pediatric Readiness Emergency Department collaborative holds quarterly webinars for nurse and physician champions. This group includes the designated Pediatric Champion from each of the 52 emergency departments in Maryland along with members from the Maryland Emergency Nursing Association (ENA), the Maryland American Academy of Pediatrics (AAP), and the Maryland American College of Emergency Physicians (ACEP).

This year, Pediatric Nurse Champions attended an in-person forum that launched the Maryland Pediatric Facility Recognition program. The workshop reviewed application materials, the site-visit agenda, and shared pediatric reference tools at the forum, the State ACEP annual conference in April and the ENA by the Bay conference in May. A new pediatric trauma and burn reference tool and poster were created and disseminated. Pediatric Physician Champion forums continue virtually each quarter and feature specific clinical presentation to Emergency Departments and provide guidance on assessment and management updates.

The EMSC team and faculty from pediatric specialty centers hosted a Pediatric Simulation training workshop in the winter. This event piloted six scenarios and introduced manikin and simulation monitors, provided by Maryland EMSC, for physician and nurse Pediatric Champions.

MIEMSS Online Training Center (OTC)

The MIEMSS Online Training Center (OTC) delivers continuing education courses and training modules accessible anytime and anywhere, increasing access to high-quality educational content. In FY 2025, the platform supported over 68,610 registered users, with more than 15,000 active clinicians, and hosted 89 active courses, including the Hospital Base Station Course exams, EMT psychomotor remediation, and the ALS protocol orientation.

Its many standout features include seamless integration with the eLicensure System: once a clinician completes a course on the OTC, their continuing education (CE) records are automatically transferred and synced directly into their eLicensure profile. This streamlined process ensures clinicians receive timely credit for attaining licensure and certification renewals.

The OTC is the platform for delivery of essential protocol updates, regular yearly updates and revisions to *The Maryland Medical Protocols for Emergency Medical Services*, specialized trainings for pediatric care, and base station operations.

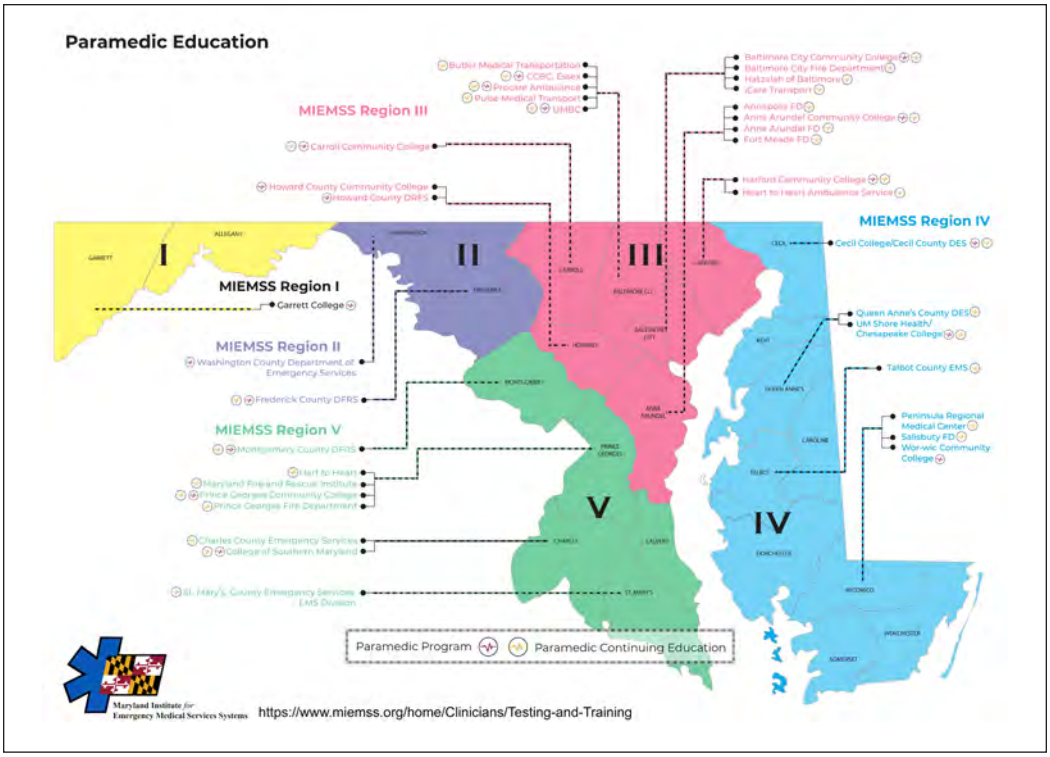
Maryland EMS Educational Conferences and Events

Maryland's regional EMS advisory councils play a vital role in supporting EMS clinicians by facilitating training opportunities across the state. The councils assist with certification and recertification processes by ensuring clinicians have access to required courses and up-to-date information on continuing education.

MIEMSS Media Services and Public Information provides educational support services that include the development of instructional media in collaboration with content experts. This includes the instructional content used in the OTC for *The Maryland Medical Protocols for Emergency Medical Services*, instructional video for clinicians, hospital programs, and emergency preparedness and operations. Media Services provides audio/visual support for EMS conferences and events which includes the production of programs, flyers, posters, and other print media that supports clinician education and training.

Winterfest EMS Conference. The Winterfest EMS Steering Committee – primarily supported by Talbot County Department of Emergency Services and MIEMSS Region IV staff – is responsible for developing curriculum, organizing training sessions, and managing all aspects of staffing and operations for the Winterfest EMS Conference. The 29th annual Winterfest EMS Conference ran from January 31 to February 2, 2025, and featured hands-on workshops on such topics as pediatric emergencies, trauma life support, agricultural rescue, and mental health. Preconference workshops began on January 29. [VIDEOS: http://tinyurl.com/WinterfestEMS2025]

Mid-Atlantic Life Safety Conference. MALSC 2024 marked a milestone 65th anniversary and was held on November 3, 2024. It offered a rich blend of education, networking, and recognition across multiple safety disciplines, drawing participation from a diverse array of fire, law enforcement, and EMS, and hospital organizations committed to improving life safety across the



Mid-Atlantic region.

The Maryland Active Assailant Interdisciplinary Work Group (AAIWG) Symposium: The 2025 AAIWG symposium on March 11, 2025, at Morgan State University, "Before, During, and After an Active Assailant Incident", included the evolving best practices in prevention, response, and recovery. The symposium welcomed remarks from Governor Wes Moore and President David Wilson from Morgan State University. The symposium topics included an overview of past active assailant events, presentation of key topics during the keynote address, and followed by expert panels discussions, and specialized breakout sessions.

Miltenberger Emergency Services Seminar. The Miltenberger Emergency Services Seminar Planning Committee, operating under the direction of the Region I Emergency Services Education Council, Inc., is composed of representatives from various agencies in Allegany and Garrett Counties, including: UPMC Western Maryland, Garrett Regional Medical Center, Allegany EMS, Garrett EMS, Cumberland City Fire Department, the Allegany-Garrett Counties Volunteer Fire and Rescue Association, the Maryland Fire and Rescue Institute, MIEMSS Region I, Allegany College of Maryland, and Garrett College. The Planning Committee reports all aspects of the conference planning, finances, and statistics to the Region I EMS Advisory Council at their quarterly meetings.

The 2025 Miltenberger Emergency Services Seminar – held March 7-8 at Rocky Gap Casino Resort in Western Maryland – brought together EMS, nursing, fire, and dispatch professionals for a focused education event. This year's program included pre-seminar workshops followed by a full-day program on Saturday.

EMS Medical Directors' Symposium. The EMS Medical Directors' Symposium is designed to increase statewide collaboration and the promotion of state-of-the-art techniques in the field for Emergency Services. The 30th Annual EMS Medical Directors' Symposium, held April 9, 2025, at the James Robey Public Safety Training Center in Marriottsville, MD, was attended by regional, jurisdictional, and commercial ambulance services medical directors, highest jurisdictional EMS officials, quality assurance officers, and MIEMSS personnel.

American College of Surgeons (ACS) and the Maryland Committee on Trauma (MDCOT) Annual Point/Counterpoint Conference and forum is dedicated to advancing trauma and acute surgical care through dynamic presentations, expert debate, and multidisciplinary education. The 2025 conference, held May 15-16, continued to focus on cutting-edge management strategies and contentious clinical topics related to trauma care. MIEMSS' Media Services enhances the event by providing robust media and content production.

Maryland Department of Emergency Management Association (MDEMA) Conference draws attendees from government agencies, the private sector, and nonprofit organizations, providing an essential forum for education, networking, and collaboration. The event is vital to the advancement of Maryland's all-hazards emergency management by bringing together stakeholders to share innovations, strategies, and resources. This year's symposium took place May 27–30, 2025, at the Ashore Resort & Beach Club in Ocean City, Maryland.

In addition, MIEMSS represented the statewide EMS system at various stakeholder conferences, such as the Maryland Fire-Rescue Services Memorial Induction Ceremony, the Maryland State Firefighters Association Annual Convention and Conference, and the Maryland Association of Counties Summer Conference.

Online Educational Webinars

"Fake, Foreign, or Fine?" webinar was held on July 31, 2024. This webinar addressed the growing issue of caregivers using fake or non-U.S.-standard car seats. Dr. Alisa Baer ("The Car Seat Lady") outlined how to distinguish between "fake, foreign or fine" seats, explained reporting procedures for unsafe seats, and offered guidance for healthcare clinicians and Child Passenger Safety Technicians (CPSTs). It was eligible for CPST continuing education credits. [VIDEO: https://tinyurl.com/FakeForeignOrFine]

"Bump Ahead: Ensuring Maternal and Fetal Safety on the

Road" webinar was held on May 6, 2025. This webinar explored the risks of motor vehicle crashes on pregnant women and their unborn babies. It covered injury mechanisms, triage considerations, outcomes, and preventive measures such as seat belt use. Presenters included Abby Butler, MSN, RNCOB; Elizabeth Wooster, RN, PhD; and Gregory Colton, EMT. This program was eligible for EMS, nursing, and CPST continuing education credits. [VIDEO: https://tinyurl.com/BumpAhead2025]

Pediatric Prehospital Care Education

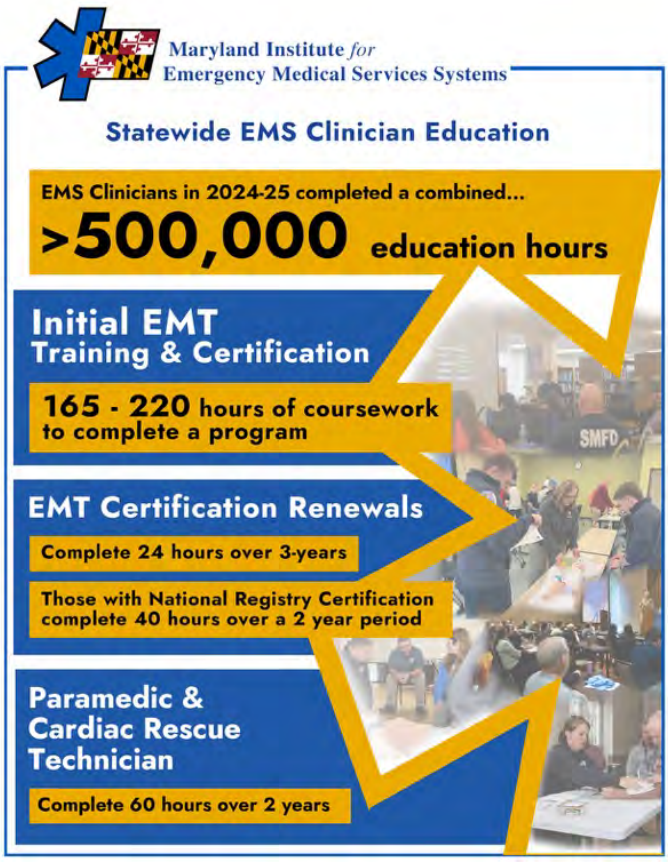
The Maryland EMS for Children (EMSC) program provides opportunities for pediatric-focused EMS and emergency department courses, nursing seminars, and training sessions through the continuing education and skill development conferences held across Maryland. Topics for 2024-2025 included pediatric critical care presentations in the field, vehicle crash scene evaluation, pediatric respiratory and diabetic emergencies, trends in pediatric poison exposure, neonatal assessment and triage, and injury prevention tools for outreach. The full-day preconference curriculum focused on caring for the child who is critically ill and escalating care. EMSC offered the Pediatric Education for Prehospital Professionals, Fourth Edition (PEPP-4) hybrid course for ALS and BLS clinicians, both as a standalone course held in western Maryland and supported courses on the Lower Eastern Shore.

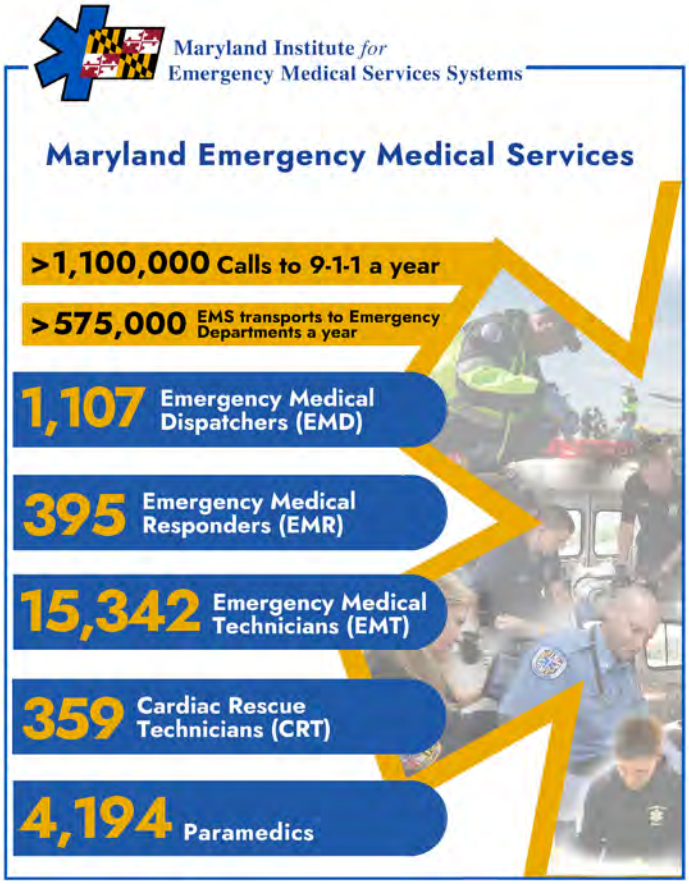
Emergency and Disaster Health Systems Department, UMBC

The Department of Emergency and Disaster Health Systems (formerly the Department of Emergency Health Services), or EDHS, is a center of excellence for EMS and emergency public health education and research at the University of Maryland Baltimore County (UMBC). EDHS educates practitioners, clinicians, scholars, and leaders in community and emergency health and disaster management. EDHS works to improve the well-being of individuals and communities and increase health equity by leading innovative research, education, policy development, practice, and service in community and emergency health and disaster management.

Since its formation in the 1980s as MIEMSS' research and education arm, EDHS has graduated an impressive number of stu¬dents, many of whom have become federal, state, and local EMS leaders, physicians, medical directors, researchers, and administrators. EDHS provides undergraduate, master's, and doctoral-level education to future and existing prehospital and emergency public health clinicians, emergency management, and disaster health leaders. Undergraduate programs include a Paramedic concentration and Emergency and Disaster Management tracks. These undergraduate programs deliver instruction in evidence-based EMS practices and skill-based learning, while providing opportunities for students to gain experience in their communities and understand the EMS role in the healthcare continuum.

The EDHS Graduate Program includes four master's degree focus tracks: Emergency & Disaster Health Management; Public Health Emergency & Disaster Management; Healthcare Emergency Management; and EHS Education. Our newly revised graduate program better prepares students for roles in a broad range of health organizations that respond to emergencies and disasters, including: health care organizations; public health departments; emergency





management agencies; and emergency medical services. EDHS has created a program explicitly marrying emergency and disaster management with health – broadly defined as public health, healthcare, emergency management, and emergency health services – to become the place to study if you're interested in emergency/disaster HEALTH. In addition, EDHS offers two graduate-level post-baccalaureate certificates (PBCs) – Emergency Management PBC and Healthcare Emergency Management PBC – which can be taken concurrently with the master's degree or as stand-alone programs.

The Department's Professional and Continuing Education (PACE) operation provides professional education opportunities to local, regional, and national EMS responders. PACE's signature pro-gram, Critical Care Emergency Medical Transport Program (CCEMTP), continues to grow, having reached over 19,000 students through 978 courses offered at 56 university/community college and educational sites nationwide.

The Paramedic refresher and CCEMTP programs collaborate with the University of Maryland Medical System EMS Residents and Fellows. As of June 30, 2024, the Pediatric and Neonatal Critical Care Transport Program (PNCCT) – the pediatric equivalent of CCEMTP – has reached over 1,400 students through 111 courses and 12 sites. PACE continues its relationship with ICISF to support the CISM certification exam and CISM course offerings. In addition, PACE maintains the AHA Training Center, offering ACLS, PALS, and CPR, and serves as the State of Maryland ITLS Chapter for all ITLS courses across the state. Learn more at https://edhs.umbc.edu.

SYSTEMS OF CARE

Specific systems of care refine the strategies to treat EMS patients optimally, including those with trauma, stroke, cardiac, and perinatal conditions. Each system defines appropriate EMS evaluation and treatment and indicates preferred patient receiving centers. Among them are trauma centers (one primary adult resource center, one level I center, four level II centers, three level III centers, two pediatric centers, a hand center, and an eye center), stroke centers (1 Acute stroke ready, 31 primary stroke centers, four thrombectomy capable stroke centers and three comprehensive stroke centers), 24 cardiac interventional centers, an adult and two pediatric burn centers, and perinatal centers (two level III and 13 level IV). Representatives from each designated specialty center actively participate in statewide quality improvement committees, initiatives, and regulation revisions to the Code of Maryland (COMAR) Title 30.

Office of Care Integration

The Office of Care Integration (OCI) ensures that Maryland's trauma and specialty care centers are properly designated, adhere to necessary standards, and maintain high levels of quality in patient care. OCI provides on-site verification of programs and ensures that they operate per their designation (e.g., Level I, Level II, Level III) and meet the criteria necessary to maintain their designation(s). Designation and verification processes for trauma and specialty referral centers require continuing evaluation to ensure compliance with the Code of Maryland Regulations (COMAR 30.08 et seq.) and ensure ongoing quality assurance and monitoring of Maryland's trauma and specialty care systems. Periodic reviews are done with a growth-oriented mindset where OCI leadership provides coaching, mentoring, and education.

MIEMSS staff conducted 64 in-person site visits to 16 trauma centers for planned Quartey reviews, with 52 additional hospital onsite coaching visits; provided consultation through two visits with Children's National Hospital Burn/Trauma Center; two visits with MedStar Washington Hospital Center; two visits with ChristianaCare; presented 21 lectures (13 lectures in-state, three lectures at National Conferences, and five Grand Rounds at out-of-state trauma centers); and mentored 11 EMS agencies. In addition to serving the trauma centers, the team remains focused on staying current with best practices and educating the community through presentations and workshops at local, regional, and national conferences.

Trauma Centers

The Maryland trauma system is organized regionally to ensure accessible care throughout the state and is tiered to match patients with the appropriate level of care based on injury severity. Maryland has nine designated adult trauma centers and five types of specialty trauma centers: pediatric trauma, adult and pediatric burn, eye trauma, and hand/upper extremity trauma. (A complete list of Maryland's trauma and specialty centers, including out-of-state hospitals with MOUs to receive Maryland trauma patients, is available on page 21. All Maryland adult and pediatric trauma centers submit data to the National Trauma Data Bank (NTDB). This data is used to assist trauma centers with comparative data for benchmarking against a national scale. The Office of Care Integration (OCI) collaborates with trauma centers in Maryland to provide a statewide quality comparison with national trauma centers.

Trauma Care Improvement

The Maryland Trauma Quality Improvement Committee (TQIC) is composed of trauma program managers and directors, trauma performance-improvement staff, trauma registrars, trauma quality improvement, and injury prevention and education staff. This group reviews, monitors, and trends statewide compliance using metrics such as emergency department documentation of patients' Glasgow Coma Scale, emergency department documentation of patients' pain assessment, unplanned visits to the operating room, trauma bypass hours per month, and eight other criteria.

In collaboration with ESO Solutions, Inc., registries for trauma, head, eye, hand, and upper extremity injuries have been integrated

Maryland Trauma and Specialty Referral Centers

TRAUMA CENTERS
(For explanation of differences in levels, see Trauma Center Categorization chart on page 20)

Primary Adult Resource Center
- R Adams Cowley Shock Trauma Center (UM)

Adult Level I Trauma Center
- The Johns Hopkins Hospital

Adult Level II Trauma Centers
- Bayview Medical Center (JHM)
- Capital Region Medical Center (UM)
- Sinai Hospital of Baltimore (LifeBridge)
- Suburban Hospital (JHM)

Adult Level III Trauma Centers
- Meritus Medical Center
- Peninsula Regional Medical Center (TidalHealth)
- Western Maryland (UPMC)

Pediatric Level I Trauma Center
- The Johns Hopkins Children's Center

Adult Burn Center
- Bayview Medical Center (JHM)

Pediatric Burn Center
- The Johns Hopkins Children's Center

Eye Trauma Center
- The Johns Hopkins Wilmer Eye Institute

Hand and Upper Extremity Trauma Center
- Union Memorial Hospital (MedStar)

Neurotrauma Center
- R Adams Cowley Shock Trauma Center (UM)

Out-of-State Trauma Centers (MOUs)
- Children's National Hospital
- Christiana Hospital (ChristianaCare)
- Washington Hospital Center (MedStar)

Out-of-State Burn Centers
- Children's National Hospital
- Washington Hospital Center (MedStar)

CARDIAC INTERVENTION CENTERS

Cardiac Intervention Centers
- Anne Arundel Medical Center (Luminis)
- Baltimore Washington Medical Center (UM)
- Bayview Medical Center (JHM)
- Capital Region Medical Center (UM)
- Carroll Hospital (LifeBridge)
- Franklin Square Medical Center (MedStar)
- Frederick Health Hospital
- Holy Cross Hospital
- Howard County Medical Center (JHM)
- Meritus Medical Center
- Peninsula Regional Medical Center (TidalHealth)
- Shady Grove Medical Center (Adventist HealthCare)
- Shore Medical Center at Easton (UM)
- Sinai Hospital of Baltimore (LifeBridge)
- Southern Maryland Medical Center (MedStar)
- St. Agnes Medical Center (Ascension)
- St. Joseph's Medical Center (UM)
- Suburban Hospital (JHM)
- The Johns Hopkins Hospital
- Union Memorial Hospital (MedStar)
- University of Maryland Medical Center
- Upper Chesapeake Medical Center (UM)
- Western Maryland (UPMC)
- White Oak Medical Center (Adventist HealthCare)

Out-of-State Cardiac Intervention Centers
- Bayhealth Hospital, Kent Campus
- Christiana Hospital (ChristianaCare)
- TidalHealth Nanticoke
- Washington Hospital Center (MedStar)

STROKE CENTERS

Comprehensive Stroke Centers
- Franklin Square Medical Center (MedStar)
- The Johns Hopkins Hospital
- University of Maryland Medical Center

Thrombectomy-Capable Stroke Centers
- Bayview Medical Center (JHM)
- Shady Grove Medical Center (Adventist HealthCare)
- Sinai Hospital of Baltimore (LifeBridge)
- Suburban Hospital (JHM)

Primary Stroke Centers
- Anne Arundel Medical Center (Luminis)
- Atlantic General Hospital
- Baltimore Washington Medical Center (UM)
- CalvertHealth Medical Center
- Capital Region Medical Center (UM)
- Carroll Hospital Center (LifeBridge)
- Charles Regional Medical Center (UM)
- Doctor's Community Hospital (Luminis)
- Frederick Health Hospital
- Good Samaritan Hospital (MedStar)
- Greater Baltimore Medical Center
- Harbor Hospital (MedStar)
- Holy Cross Hospital – Germantown
- Holy Cross Hospital – Silver Spring
- Howard County Medical Center (JHM)
- Mercy Medical Center
- Meritus Medical Center
- Midtown Campus (UM)
- Montgomery Medical Center (MedStar)
- Northwest Hospital (LifeBridge)
- Peninsula Regional Medical Center (TidalHealth)
- Saint Agnes Health (Ascension)
- Saint Joseph Medical Center (MedStar)
- Saint Mary's Hospital (MedStar)
- Shore Medical Center at Easton (UM)
- Southern Maryland Hospital Center (MedStar)
- Union Hospital (ChristianaCare)
- Union Memorial Hospital (MedStar)
- Upper Chesapeake Medical Center (UM)
- Western Maryland (UPMC)
- White Oak Medical Center (Adventist HealthCare)

Acute Stroke Ready Centers
- Upper Chesapeake Medical Center at Aberdeen (UM)

PERINATAL AND NEONATAL REFERRAL CENTERS
- Anne Arundel Medical Center (Luminis)
- Capital Region Medical Center (UM)
- Frederick Health Hospital
- Greater Baltimore Medical Center
- Holy Cross Hospital – Silver Spring
- Howard County Medical Center (JHM)
- Mercy Medical Center
- Saint Agnes Health (Ascension)
- Saint Joseph Medical Center (UM)
- Shady Grove Medical Center (Adventist HealthCare)
- Bayview Medical Center (JHM)
- Sinai Hospital of Baltimore (LifeBridge)
- Franklin Square Medical Center (MedStar)
- The Johns Hopkins Hospital
- University of Maryland Medical Center

POISON CONSULTATION CENTER
- Maryland Poison Center, UM School of Pharmacy

Designated Trauma Center Categorization

Differences in Standards Based on Physician Availability and Dedicated Resources	PARC	Level I	Level II	Level III
For the “most critical patients”, an in-house fellowship-trained attending trauma surgeon, trauma fellow, or trauma equivalent/PGY5+ general surgery resident should be at the bedside upon arrival, documented at least 80% of the time.	X			
Dedicated facilities (Resuscitation Unit, Operating Room, and Intensive Care Unit) 24 hours a day	X			
Facilities (Resuscitation Area, Operating Room, and Intensive Care Unit) 24 hours a day		X	X	X
Trauma Surgeon available in-house at all times shall be at the bedside within 15 minutes of call request, documented at least 80% of the time		X	X	
On-call Trauma Surgeon shall be at the bedside within 30 minutes of call request, documented at least 80% of the time of call request				X
Anesthesiologist in-house dedicated 24 hours a day to trauma care, should be at the bedside upon arrival, documented at least 80% of the time	X			
Anesthesiologist in-house at all times but shared with other services and shall be at the bedside within 15 minutes of call request		X	X	X
Orthopedic Surgeon in-house at all times and dedicated to trauma care	X	X		
Orthopedic Surgeon on-call shall be at the bedside within 30 minutes of call request, documented at least 80% of the time of call request			X	X
Neurosurgeon in-house at all times and dedicated to trauma care	X			
Neurosurgeon in the hospital at all times but shared with other services		X		
Neurosurgeon on-call shall be at the bedside within 30 minutes of call request, documented at least 80% of the time of call request			X	X
A designated fellowship-trained/board-certified in surgery or critical care surgical director of the Intensive Care Unit	X	X		Desired
An organized trauma research program with a designated physician director and documented research plan	X	X		
Education – Fellowship Training in Trauma	X			
Surgical Residency Program	X	X		
Injury Prevention and Public Education Program	X	X	X	X

with eMEDS® patient care records to enhance the accuracy of patient information.

The Maryland Burn Collaborative analyzes burn data submissions, standard audit indicators, and performance improvement. A Maryland Burn Center scorecard tracks and trends statewide compliance using quality indicators such as the percentage of patients with a burn Total Body Surface Area (TBSA) greater than 10% admitted within six hours of injury or interhospital transfer, and the percentage of deaths with less than 10% TBSA. In conjunction with the State EMS Medical Director, the collaborative significantly influences the development of *The Maryland Medical Protocols for Emergency Medical Services*, on such matters, for example, as decisions pertaining to high-flow oxygen versus hyperbaric oxygen.

This reporting year, the TQIC and Burn Collaborative utilized the Maryland Trauma Registry to identify injury prevention needs across the state. Beyond regional initiatives, all trauma, burn, hand, and eye designated centers discussed statewide injury prevention. These presentations included: Stop the Bleed®; falls; gun violence; pedestrian/scooter injury; bicycle injury and burn injury.

Stroke Centers

The Office of Care Integration (OCI) strives to ensure stroke centers evolve in line with new research and best practices in stroke care. In FY 2025, the Stroke Quality Improvement Committee (Stroke QIC), consisting of Maryland hospitals' stroke program coordinators and stroke program medical directors, focused on ongoing initiatives for improving stroke care in Maryland. This work led to COMAR regulation updates for acute stroke-ready. primary, thrombectomy-capable, and comprehensive stroke center designation. In FY 2025, two primary stroke centers and one comprehensive stroke center renewed their designations. In total, Maryland now has 31 primary stroke, one acute stroke ready, three comprehensive stroke, and four thrombectomy-capable primary stroke designated centers.

Maryland's stroke centers submit data monthly to the American Heart Association (AHA) Get with the Guidelines® stroke registry. OCI uses this data to monitor compliance with AHA and American Stroke Association (ASA) standards. By evaluating core performance measures, OCI benchmarks Maryland's compliance rates and compares them to national standards. For CY 2024, Maryland achieved a compliance rate of 93% or higher for each core performance measure, significantly surpassing the AHA/ASA minimum compliance rate of 80%. This high compliance reflects improved patient outcomes and demonstrates that Maryland's stroke care exceeds national benchmarks.

Maryland stroke centers use Get with the Guidelines® data to refine stroke alert protocols, enhance response times, and share best practices. In FY 2024, this data helped improve door-to-Intravenous tissue Plasminogen Activator (IV t-PA) times. Early treatment with t-PA is known to improve patient outcomes. The AHA/ASA Target Stroke Program sets a minimum standard requiring that 75% of eligible stroke patients receive t-PA within 60 minutes of arriving at the hospital. For CY 2024, Maryland's median door-to-t-PA time was 42 minutes, and 87.3% of eligible acute ischemic stroke patients received t-PA within the 60-minute standard.

During this reporting period, OCI leadership partnered with designated centers and conducted approximately 201 on-site visits to coach, mentor, and identify ways to improve and maintain stroke status and better inform the public. The stroke team regularly attends local, regional, and national conferences to gain information to disseminate best practices for stroke care in the Maryland community, and presented on learned lessons and experience at state, regional, and national conferences.

Cardiac Intervention Centers

Hospitals that meet state standards for treating ST-Elevation Myocardial Infarction (STEMI) are designated as Cardiac Intervention Centers. In Maryland, 24 hospitals and four out-of-state hospitals serving Maryland patients hold this designation. A STEMI is a life-threatening coronary artery blockage leading to death of heart muscle. Timely treatment to relieve the blockage improves heart muscle recovery. Primary percutaneous coronary intervention (pPCI) is recognized by the American College of Cardiology and the American Heart Association (AHA) as the preferred treatment for STEMI due to its association with fewer complications and better outcomes.

All Cardiac Intervention Centers submit data quarterly to the AHA Get with the Guidelines® Coronary Artery Disease Registry. MIEMSS uses this data to evaluate and compare STEMI care in Maryland against national benchmarks. For CY 2024, Maryland achieved the target of 90 minutes or less for first medical contact (FMC) to cardiac catheterization lab ("device") intervention in 76.2% of STEMI cases transported by EMS, a 3.3% improvement from CY 2023. Additionally, the median FMC-to-device time for CY 2024 was 79 minutes, six minutes shorter than in CY 2023.

In FY 2025, six application and site reviews resulted in six redesignations in Maryland. During this reporting period, OCI completed 23 visits to cardiac intervention centers for coaching, mentoring, improving patient care, and preparing centers for redesignation. OCI continues to assist cardiac centers through partnering with their teams in quality improvement projects to facilitate guideline-directed evidence-based practice adoption.

To enhance integration with EMS, OCI continues to encourage cardiac intervention centers to engage EMS participation in annual check-in visits, as well as monthly program meetings. In June 2025, OCI surveyed all jurisdictions regarding the use of the optional supplemental protocol for EMT 12-lead ECG acquisition. The responses help the OCI team communicate how EMS resources are operationalized to cardiac centers.

OCI continues to partner with the Maryland Cardiac Center Consortium (MC3). The consortium meets quarterly and includes representatives from each cardiac center, the American Heart Association, and the Maryland Health Care Commission (MHCC). OCI also represents MEIMSS at the Maryland Cardiac Data Coordinators meetings and the Maryland Cardiac Advisory Steering Committee hosted by the MHCC.

Freestanding Emergency Medical Facilities

Freestanding Emergency Medical Facilities (FEMF) are licensed facilities that are structurally separate and distinct from a hospital

Stroke Core Measures (5-Year Comparison)

Core Measure	CY 2020	CY 2021	CY 2022	CY 2023	CY 2024
Percent of ischemic stroke patients who arrive at the hospital within 2 hours of time last known well and for whom IV t-PA is initiated within 3 hours of time last known well	92.7%	91.8%	91.2%	91.8%	93.7%
Percent of patients with ischemic stroke or TIA who receive antithrombotic therapy by the end of hospital day two	98.3%	97.7%	97.5%	97.8%	93.9%
Percent of patients with an ischemic stroke, or hemorrhagic stroke, who receive VTE prophylaxis the day of or the day after hospital admission	97.5%	97.3%	97.6%	97.7%	97.7%
Percent of patients with an ischemic stroke or TIA prescribed antithrombotic therapy at discharge	99.7%	99.4%	99.6%	99.6%	100%
Percent of patients with an ischemic stroke or TIA with atrial fibrillation/flutter discharged on anticoagulation therapy	98.9%	97.8%	98.5%	96.8%	97.9%
Percent of patients with ischemic or hemorrhagic stroke, or TIA with a history of smoking cigarettes, who are, or whose caregivers are, given smoking cessation advice or counseling during hospital stay	99.1%	98.6%	99.1%	99.2%	90.9%
Percent of ischemic stroke or TIA patients with a cholesterol LDL level=100, or LDL not measured, or on cholesterol-reducer prior to admission who are discharged on statin medication	99.0%	99.0%	99.3%	95.9%	93.9%
Percent of stroke patients who undergo screening for dysphagia (difficulty swallowing) with an evidence-based bedside testing protocol approved by the hospital before being given any food, fluids, or medication by mouth	91.0%	89.8%	90.0%	88.4%	73.5%
Percent of patients with stroke or TIA, or their caregivers, who were given education and/or educational materials during the hospital stay addressing all of the following: personal risk factors for stroke, warning signs for stroke, activation of emergency medical system, the need for follow-up after discharge, and medications prescribed	96.7%	96.8%	96.4%	93.2%	87.9%
Percent of patients with stroke who were assessed for rehabilitation services	99.5%	99.4%	99.6%	98.8%	98.9%

Source: Get With the Guidelines-Stroke Registry

IV t-PA = Intravenous Tissue Plasminogen Activator
VTE = Venous Thromboembolism
LDL = Low Density Lipoprotein (bad cholesterol)
TIA = Transient Ischemic Attack

and provide emergency care. FEMFs differ from hospitals in that they do not provide inpatient care. FEMFs are required to have specific medical equipment and staffing available for trauma care.

- UM Bowie Health Center
- Adventist HealthCare Germantown
- UM Shore Emergency Center at Queenstown
- UM Laurel Medical Center
- TidalHealth McCready Pavilion
- UM Shore Medical Center at Cambridge
- UM Upper Chesapeake Health at Aberdeen
- LifeBridge Grace Medical Center

Perinatal and Neonatal Programs

The Maryland perinatal and neonatal systems follow the care standards set by the American College of Obstetricians and Gynecologists (ACOG) and the American Academy of Pediatrics (AAP), which range from Level I (basic care) to Level IV (high-risk care). MIEMSS oversees Levels III and IV perinatal and neonatal referral centers in Maryland. This oversight includes 15 hospitals providing obstetric services, of which 13 are Level III centers and two are Level IV centers.

Levels III and IV perinatal referral centers provide annual reports that go beyond mortality statistics, focusing on clinical excel-

lence, patient safety, and reliability. Their goal is to eliminate preventable adverse outcomes. The data, both regional and national, helps track maternal and infant health indicators. The MIEMSS Perinatal Advisory Committee meets quarterly to identify areas for improvement and establish best practices.

To address adverse perinatal outcomes and reduce preventable deaths, perinatal programs have developed EMS-specific education centered on culturally responsive care for the state's diverse maternal population. Since over half of preventable maternal deaths occur after delivery and hospital discharge, MIEMSS emphasizes the importance of preparing EMS clinicians in recognizing life-threatening perinatal conditions while also providing culturally competent care to effectively communicate with all patients.

This reporting period, MIEMSS and perinatal and neonatal program leadership created and published an EMS educational video and education module (in Online Learning Center), completed 28 on-site visits to perinatal programs for the purpose of coaching, mentoring, improve patient care, and prepared centers for redesignation. In FY 2025, perinatal program leadership attended four conferences with national reach and presented 12 times at regional and national events.

Adult Trauma Centers

The trauma network is designed to provide timely and effective treatment to improve patient outcomes. In addition to the Primary Adult Resources Center and Levels I, II, III, and IV trauma centers, Memoranda of Understanding are in place with MedStar Washington Hospital Center, Children's National Hospital, and ChristianaCare who are out of state hospitals that provide higher-level trauma services for patients in remote areas.

Primary Adult Resource Center: R Adams Cowley Shock Trauma Center (UM)

22 S. Greene Street, Baltimore, Maryland
MIEMSS Region III

Located within the University of Maryland Medical Center, the R Adams Cowley Shock Trauma Center (RACSTC) serves as the state's Primary Adult Resource Center. As a multidisciplinary clinical, educational, and research institution, RACSTC is dedicated to world-class standards in the prevention and management of critical injury and illness.

From June 1, 2024, through May 31, 2025, RACSTC treated 5,635 primary trauma patients, according to the Maryland State Trauma Registry. Over this 12-month period, 82% of patients admitted to RACSTC arrived by ground transportation and 18% arrived by air. Demographic data obtained indicates that the majority of admissions were male (64%). The majority of admissions were aged 56 or older (42%), followed by those aged 15-35 years (33%), and those aged 36-55 (25%).

Center for Hyperbaric and Dive Medicine

The Center for Hyperbaric and Dive Medicine is the statewide referral center for individuals who experience decompression sickness, carbon monoxide poisoning, gas embolism, smoke inhalation, delayed effects of radiation treatment, diabetic wounds, and severe necrotizing soft-tissue infections. It is the only 24/7 critical care-capable chamber in the region and is internationally recognized for its leadership and expertise in the clinical application of hyperbaric therapy. The Center performs clearance to SCUBA dive physicals for both recreational and commercial divers. The Center is an enrollment site for the Hyperbaric Oxygen Brain Injury Trial (HOBIT) to test hyperbaric hyperoxia for severe traumatic brain injury in the initial stage of hospitalization. In addition, the Center routinely tests new equipment to be used under pressure for clinical use.

In FY 2025, the Center for Hyperbaric and Dive Medicine provided 4,508 dive hours of therapeutic hyperbaric oxygen treatment (HBO). Of these, 23.3% were inpatients, 76.2% were outpatients, and 0.5% were emergent.

The GO-TEAM

The GO-TEAM is a specialized component of Maryland's statewide EMS system and the product of a joint effort between RACSTC, MIEMSS, the Maryland State Police Aviation Command, and the region's Fire, Rescue, and EMS services. As RACSTC's rapid-deployment arm, it enables advanced medically directed rescue, extrication, resuscitation, and stabilization of patients at the scene and during transport to advanced hospital facilities. The goal of the GO-TEAM is to blur the line between prehospital and hospital care, and to that end it brings advanced anesthetic, surgical, and critical care services to the patient on-scene and during evacuation. Each GO-TEAM activation brings an attending trauma physician and a nurse anesthetist to the patient's side, whether that's on a highway, in the woods, on the Chesapeake Bay, or at the bottom of a ravine.

This year, the GO-TEAM participated in 10 educational events reaching over 350 prehospital clinicians. The GO-TEAM partnered with EMS colleagues in conducting joint training exercises, including collapse rescue, confined space rescue, confined rescue, advanced water rescue, and Maryland State Police Aviation Command hoist training. The GO-TEAM also conducted two on-site visits. It presented two lectures at the Maryland State Firefighters Association Annual Convention and Conference and was present at the Shock Trauma Booth to provide further information for EMS colleagues. The GO-TEAM provides a post-event debriefing for EMS clinicians following each GO-TEAM deployment.
FY 2025 saw 12 GO-TEAM activations, with five (5) patient retrievals, including Anne Arundel County (Tractor Trailor with Entrapment), Charles County (Entrapment – Forestry Equipment), Prince George's County (Impaled leg on Coffee Hopper), Prince George's County (MVC with Entrapment), and Prince George's County (Dump Truck with Entrapment). All five (5) patients were transported to the R Adams Cowley Shock Trauma Center.

Military Civilian Partnerships

Since 2001, U.S. Air Force Medical Service personnel have traveled to Baltimore for advanced training at the U.S. Air Force Center for the Sustainment of Trauma and Readiness Skills (C-STARS), embedded within RACSTC. This long-standing civil-

ian–military partnership plays a vital role in ensuring military medics remain fully prepared for the demands of wartime casualty care. Building on its success with the Air Force, RACSTC now also delivers high-value educational observation experiences to medical professionals from Walter Reed National Military Medical Center – including surgeons, nurses, and technicians – as well as to U.S. Naval Academy midshipmen, further expanding its role as a premier training and readiness resource.

Injury Prevention Programs and Initiatives

RACSTC's Center for Injury Prevention and Policy (CIPP) focuses on identifying injury trends and delivering statewide injury prevention education. In FY 2025, CIPP presented 689 events reaching over 22,000 community members and 14 counties across the state of Maryland. These programs include the Violence Prevention Program, Intimate Partner Violence (Bridge) Program, Stop the Bleed® (STB) Program, Trauma Survivors Network, ThinkFirst® National Injury Prevention Foundation, and Adult Court-Ordered Drinking Driver Monitor Program. In FY 2025, RACSTC partnered with Harford, Howard, and Carroll County Public Schools to incorporate STB into their high school curriculums, including training of staff and equipping schools with training materials. CIPP also collaborated with Maryland Committee on Trauma to co-sponsor statewide events for National STB Week, expanding reach and awareness throughout the state. The Violence Prevention Program launched an intensive multi-week high-risk youth program, SMARTer, helping to change trajectories for first-time youth gun offenders in addition to the single-session programs already in existence. The Violence Prevention Program reached more than 300 youth with programming in Baltimore City and surrounding counties. In partnership with ThinkFirst® National Injury Prevention Foundation, it educated over 3,600 teens on head injury prevention and/or risky teen behaviors, including distracted driving. This continued growth of prevention programming to expand reach from last year continues to reflect CIPP's mission: to educate all Marylanders to reduce preventable injuries, equip them with skills that could help save lives, and create a culture of injury prevention throughout the state.

Quality Management and Improvement

RACSTC maintains a complete and comprehensive quality management program. It monitors all aspects of care from prehospital trauma-line consulting to peer review of complications and patient deaths. The program benchmarks and integrates the best practices of other institutions and specialty services who provide care to critically ill and severely injured patients. The multidisciplinary Quality Improvement Committee outlines program quality, monitors performance, and develops new initiatives. Over the past year, its quality improvement efforts have included initiatives focused on improving outcomes in for its elderly patients, lowering patients' length of stay, reducing VTE instances and preventing readmissions specifically through improvements in our post-discharge follow-up care, and our Trauma Survivors network.

EMS Outreach and Educational Activities

By focusing on patient care trends, RACSTC expanded and advanced its educational programs this year, delivering lectures and participating in case reviews with local jurisdictions. In March, the STC EMS Liaison team hosted the Shock Trauma EMS Conference. Presentations included Initial Resuscitation and Assessment, Whole Blood Administration, Revolutionizing Cardiac Arrest Response: ECPR in the State of Maryland, Non-compressible Torso Hemorrhage, Hyperbaric Oxygen Treatment, and Stop the Bleed training. Our EMS Educational Broadcasts offer EMS clinicians an opportunity to partner with us in presenting case studies that provide education encompassing care from the field through hospital discharge. Topics covered in FY 2025 included "Resuscitation Under Pressure – A Go-Team case in Allegany County" and "On the Fence". Additional EMS education is offered through The Center for Critical Care Training and Education (CCCTE) and is outlined below. EMS education reached over 246 EMS clinicians during FY 2025. Members of RACSTC's EMS liaison team continue to provide education to their assigned EMS jurisdictions.
A virtual tour video offers EMS students, clinicians, and other first responders an opportunity to better understand the process of transporting patients to RACSTC. We offer observation opportunities for EMS clinicians in the Trauma Resuscitation Unit and Critical Care Units, which hosted 72 EMS student observers in FY 2025.

The Trauma Observation Program offers healthcare professionals an up-to-date, real-world understanding of their specific areas of interest through immersive experiences, including clinical interactions, educational meetings and lectures, hospital rounds, and observation of operational procedures. Participants represent a wide range of backgrounds – EMS students, pre-medical students, military medics, nurses, high school athletic trainers, nurse practitioners, and physicians. The program welcomes both national and international attendees, fostering a diverse learning environment. In FY 2025, RACSTC hosted 113 participants from 16 countries, continuing its mission to share expertise and advance trauma care worldwide.

This year, RACSTC continued to support continuing education for EMS, Nursing and Physicians both at a local, national and international level with multiple podium and poster presentations at professional conferences including Society of Trauma Nurses TraumaCo; Magnet Pathway Conference; Trauma Center Association of America; American Association for the Surgery of Trauma; Panamerican Congress of Trauma, Lima, Peru; American College of Surgeons Point Counterpoint Conference; Southeastern Critical Care Medicine Conference; Eastern association for the Surgery of Trauma; Mid-Atlantic Transport Conference; TCAA annual conference and the Society of Trauma Nurses annual conference. In addition, staff from multiple disciplines continue to be published in peer reviewed journals including *Journal of Surgical Research; The American Surgeon; The Spine Journal; American Journal of Surgery; Journal of the American College of Surgeons; Journal of Surgical Research; Trauma Surgery and Acute Care*, and *Journal of Trauma Acute Care Surgery*. RACSTC conducted additional educational outreach specific to EMS at several conferences, including the Winterfest EMS Conference, the Miltenberger Emergency Services Seminar, and the Maryland State Firefighters Annual Convention and Conference.

Center for Critical Care Training and Education (CCCTE)

The Center for Critical Care Training and Education (CCCTE) offers a robust educational schedule and has built environments to mimic every phase of patient care within the Primary Adult Resource Center. CCCTE hosts many certification courses, including Advanced Trauma Life Support (ATLS) and Advanced Trauma Care for Nurses (ATCN). Advanced trauma skills training includes Basic Endovascular Skills for Trauma, Extracorporeal Membrane Oxygenation (ECMO) and ultrasound training. In FY 2025, CCCTE provided more than 620 course sessions to more than 11,700 participants from around the world, including EMS clinicians, medical students, attending physicians, and nurses. In addition, CCCTE provides EMS training for Maryland State Police, Maryland Express Care, Harford EMS, US Army National Guard, FBI Field Agents, and volunteer organizations, and hosts community outreach educational programs including Stop the Bleed®, Minds of the Future, and the Edmonson High School Scrub Tech Program. Learn more at https://www.umms.org/ummc/pros/critical-care-trauma-education.

Research

Research projects conducted at the R Adams Cowley Shock Trauma Center are designed to enhance the trauma system's ability to resuscitate, stabilize, and treat the needs of trauma patients. RACSTC manages research under the umbrella of the Shock, Trauma, and Anesthesiology Research – Organized Research Center (STAR-ORC), a multidisciplinary research and educational center focusing on the spectrum of traumatic injury including brain injury, critical care and organ support, blood and resuscitation, surgical outcomes, patient safety, and injury prevention. STAR-ORC is the first research center in the nation dedicated exclusively to the study of trauma, its complications, and prevention.

RACSTC closed out FY 2025 with more than 21 clinical studies either ongoing or upcoming. Topics include traumatic brain injury, hemorrhagic shock, spinal cord injury, biomechanics of motor vehicle crash-related injury, pelvic fracture and associated hemorrhage, big data, artificial intelligence and augmented reality. Its research partners include the National Institutes of Health (NIH), the US Air Force, Department of Defense, and Defense Advanced Research Projects Agency (DARPA), National Highway Traffic Safety Administration, Federal Drug Administration, and others.

This past year RACSTC has been the clinical site for a new ultrasound technology that can visualize behind bone, funded by the Department of Defense through industry collaboration. This year, RACSTC was requested to expand the Crash Injury Research and Engineering Network study to include motorcycle crash reconstructions to evaluate protective equipment and injury causation.

RACSTC continues to work on a large DARPA study to build a database of non-invasive and invasive vital signs collected in real-time to evaluate the efficiency of helicopter transport, trauma center reception, resuscitation and stabilization (Shock Trauma Center Research Infrastructure for Trauma with Medical Observations – STC RITMO). RACSTC remains a participating site in a large multi-center Trauma Resuscitation with Group O Whole Blood or Products (TROOP) study to examine whether patients who are injured and bleeding do better after receiving whole blood, or blood components. RACSTC, in collaboration with MIEMSS, will serve as a clinical site for the CAlcium and VAsopressin following Injury Early Resuscitation (CAVALIER) Trial, which will study the use of calcium replacement in the field and the early use of vasopressin in patents in hemorrhagic shock. RACSTC will also be the lead site for CRYOFIRST, which will compare the outcomes of a new cryoprecipitate product with a prolonged shelf life to conventional thawed cryoprecipitate.

Legislation

RACSTC's Legislative Committee plays a significant role in advocating for crucial improvements in trauma care and patient support across Maryland. This year, RACSTC advanced key legislative priorities by testifying in support of Maryland helmet safety laws and engaging directly with members of Congress to advocate for sustained federal trauma funding. Our efforts emphasized support for the Mission Zero initiative as well as other national trauma grant programs, reinforcing our commitment to injury prevention, trauma readiness, and the long-term sustainability of Maryland's trauma care system.

Rehabilitation Services

RACSTC emphasizes early patient mobilization and functional training at the beginning of the Advanced Trauma Life Support rehabilitative process. A highly trained interdisciplinary team of physicians, nurses, therapists and ancillary care providers participate in extensive daily interactions and disposition rounds to problem solve and set the clinical plan for their complex, multi-system patients. This interdisciplinary approach facilitates utilization of therapy services through the full continuum of care, from the Trauma Resuscitation Unit (TRU) to follow-up clinics after discharge. The RACSTC rehab team also serves as a specialty resource for local, regional, and national providers and professional associations. The University of Maryland Rehabilitation & Orthopedic Institute and the UMMC Midtown Campus primarily provide post-acute inpatient and outpatient services for RACSTC patients.

Level I Adult Trauma Center: The Johns Hopkins Hospital

1800 Orleans Street, Baltimore, Maryland
MIEMSS Region III

The Johns Hopkins Hospital (JHH) is a designated Level I Adult Trauma Center serving Baltimore City, surrounding counties, and patients throughout Maryland and the region. JHH strives to improve the health of the community and the world by setting the standard of excellence in medical education, research, and clinical care. Diverse and inclusive, Johns Hopkins Medicine educates medical students, scientists, healthcare professionals, and the public. It conducts biomedical research and provides patient-centered medicine to prevent, diagnose, and treat human illness. The trauma and acute care surgery departments of JHH, Johns Hopkins Bayview Medical Center, Suburban Hospital and Howard County General are unified under a single Division of Acute Care Surgery.

Between June 1, 2024, and May 30, 2025, JHH treated 3,129 trau-

ma patients, according to the Maryland State Trauma Registry. Adult trauma services are provided by the Division of Acute Care Surgery within the Department of Surgery. This year, *U.S. News & World Report* named The Johns Hopkins Hospital one of the nation's top 20 hospitals in its 2025–26 Honor Roll. JHH ranked #1 in Maryland and in Baltimore. Twelve specialties were ranked among the nation's top 10, with Rheumatology ranked #1 for the 21st consecutive year.

Quality Management and Improvement

JHH has advanced its quality management efforts through full integration with the Trauma Quality Improvement Program (TQIP), benchmarking outcomes against national standards. TQIP data informs analysis of mortality, hospital complications, and preventable events, driving priority improvements such as reducing catheter-associated urinary tract infections and ventilator-associated pneumonia. System-level initiatives, including the Trauma Transfer Review Workgroup and automation of trauma registry data, further strengthen performance monitoring, case review, and alignment of best practices across multiple centers.

This year, JHH introduced the following quality improvement initiatives:

1. **Trauma Quality Improvement Program:** JHH continues to maintain its status as a TQIP Center to help benchmark their program and enhance the quality of trauma care.
2. **Trauma Bypass Rate Maintenance:** Over the last five years, JHH has successfully maintained a Trauma Bypass Rate below 1%.
3. **Trauma Continuity of Care Committee:** Developed new PIP processes to identify opportunities to review the Trauma Discharge Process and help ensure patients are discharged with correct resources and patient navigation.
4. **System-Wide Violence Intervention:** The Johns Hopkins Break the Cycle Violence Intervention Team has expanded to cover the JHHS Trauma Centers: JHH Pediatrics and Bayview Medical Center as an effort to reduce mortality from gun violence trauma recidivism. In addition to high-risk gun-violence patients, the team now serves all violence at JHHS, which includes:
5. **System-Wide Benchmarking of Trauma Registry Data:** JHH collaborated with MIEMSS to develop a standardized tool that centers can leverage to review their performance across the state.
6. **Health System Trauma Narrator Updates:** The conversion of Trauma Narrator in EPIC has now been standardized to match the needs of our Adult Trauma Centers ensuring consistent training and documentation for all adult trauma nursing staff.

These initiatives reflect JHH's ongoing commitment to setting the standard in trauma care quality and patient safety.

Injury Prevention Program

The Injury Prevention Program is deeply embedded in the trauma service, with outreach and advocacy integrated into daily operations. FY 2025 initiatives included: a public-facing injury prevention dashboard; car seat distribution programs; Break the Cycle hospital violence intervention model, which leverages risk stratification, credible messengers, and registry-crime data overlays; survivorship programs including the Trauma Survivors Network (TSN), comfort carts, peer mentorship, and the *This Is My Story* audio project. Using geo-mapping of registry injury data, the division prioritizes violence, home safety (falls, lacerations, etc.), and motor-vehicle safety.

Leveraging partnerships across the Johns Hopkins healthcare system, JHH's injury prevention initiatives exemplify a comprehensive, collaborative approach to public health. Through significant outreach efforts, extensive staff involvement, and strategic partnerships with Bayview and Suburban hospitals, JHH continues to lead the way in promoting safety and preventing injuries within the community. Major injury prevention events in this year included:

- **Stop the Bleed Day®**, hosted by the Maryland Committee on Trauma, we trained over 200 Marylanders in Stop the Bleed.
- **Break the Cycle Summit:** The Break the Cycle Summit brought together hospital leaders, community partners, and policymakers to strengthen hospital-based violence intervention efforts across Maryland. The agenda focused on sharing best practices, elevating the voices of survivors and community leaders, and building strategies for sustainable partnerships and funding. Sessions highlighted innovations in trauma recovery, violence prevention, hip hop as a form of trauma therapy, and system-wide collaboration.
- **Trauma Survivors Day:** We also participated in Trauma Survivors Day, honoring three remarkable survivors for their resilience and strength.

EMS Education

Johns Hopkins Hospital (JHH) remains at the forefront of EMS education, actively engaging in quality improvement and providing essential follow-up to EMS professionals. The biannual Topics in EMS conference, hosted by JHH, is a key event that underscores our commitment to education and professional development. Additionally, JHH serves as a site facility for five EMS education programs, utilizing its EMS boardroom to deliver comprehensive educational services to EMS clinicians who bring patients to JHH for care.

Trauma education is a top priority at the JHH trauma center. Our trauma and emergency medicine attending physicians impart their knowledge through various advanced courses, including Advanced Trauma Operative Management, Advanced Trauma Life Support, Advanced Surgical Skills for Exposure in Trauma, and Rural Trauma Team Development. This past year, many of our trauma physicians were speakers at local, national and international conferences. Their contributions as session moderators, visiting professors, and keynote speakers have been invaluable. Additionally, they have shared their expertise with members of the US Congress and military, further extending our influence and impact on trauma education.

JHH is committed to supporting EMS and transport educa-

tion through key local initiatives, including the biannual Topics in EMS conference and the Mid-Atlantic Trauma Conference (MATC).

- **Topics in EMS Conference:** This biannual event, hosted by JHH, underscores our dedication to education and professional development. It brings together EMS professionals to discuss the latest advancements, share best practices, and collaborate on improving patient care. The conference serves as a critical platform for knowledge exchange and professional growth.
- **Mid-Atlantic Trauma Conference (MATC):** The MATC, which features notable presentations by experts across Maryland and led by Chad Bowman and Dr. Asa Margolis. Their sessions focus on the latest advancements in transport care which included some trauma specific care and innovative EMS practices. The conference fosters an environment of learning and collaboration among EMS professionals, emphasizing JHH's commitment to leading discussions that drive progress in trauma care and EMS education.

Research

The Johns Hopkins Global Surgery Initiative prioritizes expanding access to surgical and trauma care in low-resource settings around the world. Projects in countries such as Mozambique and Kenya have focused on building surgical capacity, strengthening trauma systems, and addressing inequities in access to lifesaving care. These efforts underscore Johns Hopkins' commitment to advancing health equity globally and sharing expertise beyond U.S. borders.

Nationally, Johns Hopkins has played a central role in shaping trauma and gun violence research and policy. The Bloomberg School of Public Health, the Center for Gun Violence Solutions and the Center for Injury Research and Policy continue to influence national dialogue through evidence-based research aimed at reducing firearm violence, improving trauma care, and advancing injury prevention.

Locally, Johns Hopkins has led innovative research to improve trauma clinical outcomes and patient care within its own hospitals and region. These efforts have focused on, among other areas, venous thromboembolism (VTE); management of severe liver injuries; airway management strategies in hemorrhage control surgery; and the introduction of robotic surgery and new educational methodologies, ensuring the next generation of acute care surgeons are prepared to meet evolving patient needs.

Research initiatives span both clinical outcomes and public health impact. JHH is actively engaged in studies on airway management, angioembolization, and disparities in trauma outcomes, while survivorship research explores innovative approaches like TIMS (patient audio storytelling). Legislative advocacy intersects with research, with leaders co-chairing TraumaNET's Legislative Committee and contributing to policy discussions on trauma funding, firearm safety, and motor vehicle injury prevention. Together, these efforts reflect a comprehensive strategy to advance evidence-based trauma care, inform legislation, and enhance patient recovery and equity.

Rehabilitation Services

The Johns Hopkins Department of Physical Medicine and Rehabilitation (PMR) delivers a full spectrum of rehabilitation services tailored to trauma patients – from bedside interventions to inpatient rehabilitation and home-based support. Their Comprehensive Inpatient Integrated Rehabilitation Program (CIIRP) features an 18-bed unit at The Johns Hopkins Hospital (Meyer-7), offering 7-day-a-week medical and rehab nursing services alongside intensive therapy, typically 3 hours per day for 5–7 days per week. Designed to simulate real-world settings, the unit includes a mock apartment and a "streetscape" area where patients can practice daily living activities such as using an ATM or grocery shopping, fostering greater independence and real-life readiness.

This year, PMR expanded its patient-centered offerings with advanced tele-rehabilitation, enabling patients to continue receiving personalized guidance and care after discharge – an important enhancement for individuals with mobility or transport challenges. Additionally, PMR continues to host an annual national rehabilitation conference, spotlighting emerging innovations in early ICU mobilization, virtual reality therapy integration, and wearable technologies for real-time patient progress tracking. These enhancements underscore Johns Hopkins' commitment to delivering state-of-the-art, comprehensive rehabilitation services that not only support physical recovery from trauma but also promote patients' successful reintegration into everyday life.

Level II Adult Trauma Center: Bayview Medical Center (JHM)

4940 Eastern Avenue, Baltimore, Maryland
MIEMSS Region III

Johns Hopkins Bayview Medical Center (JHBMC) is a designated Level II Adult Trauma Center serving eastern Baltimore City, eastern Baltimore County, Harford County, and Cecil County. As a member of Johns Hopkins Medicine, JHBMC provides emergency access to surgical care for acutely injured patients with time-sensitive injuries. The program provides patient-centered comprehensive care to all trauma patients, incorporating a multidisciplinary, collaborative approach, and evolves by implementing protocols that address patient, community, and institutional needs.

From June 1, 2024, through May 31, 2025, the JHBMC Emergency Department evaluated more than 5,000 patients triaged by EMS for specialty trauma care, and entered into the Maryland State Trauma Registry. Adult trauma care services at JHBMC are provided by the Johns Hopkins School of Medicine Department of Surgery's Division of Acute Care Surgery.

JHBMC is one of the state's busiest trauma centers by volume. The trauma and emergency surgery services of both JHBMC and The Johns Hopkins Hospital are unified under a single Division of Acute Care Surgery, and provide trauma attending physician support to both trauma centers. The Bayview Trauma Advanced Practice Providers (APP) Service has been expanded to four APPs who provide care exclusively for trauma patients facilitating more admissions to the trauma service with the goal of better patient outcomes through dedicated, specialized care. The trauma service is currently developing a geriatric trauma service and plans to

implement a geriatric hip fracture pathway to improve outcomes in the geriatric population.

JHBMC recognized National Trauma Awareness Month in May 2025 by welcoming back trauma survivors and their families to celebrate their recovery with a special event.

Quality Management and Improvement

Through its quality management process, JHBMC continually improves patient care and outcomes at both the individual and system level. Its multidisciplinary Trauma Joint Practice Committee, consisting of physician liaisons from Emergency Medicine, Trauma Surgery, Orthopedic Surgery, and Neurosurgery, reviews patient care to enhance multidisciplinary collaboration and identify improvement opportunities.

Injury Prevention Programs and Initiatives

In May 2025, JHBMC held its fifth annual Stop the Bleed® marathon training on National Stop the Bleed® Day, and offered Stop the Bleed® training sessions to local community groups. The injury prevention team has partnered with physical therapy and nutrition to conducted fall prevention training in the senior community.

EMS and Nursing Continuing Education

JHBMC hosted its semiannual Topics in EMS Conference for EMS clinicians in the spring and fall. This full-day hybrid course includes trauma and burn injury content. The trauma service conducted a spring and fall conference for clinicians and our clinician counterparts in United Arab Emirates, Australia and South Africa. In addition, EMS educational programs are contracted with JHBMC for clinical learning opportunities. It provides further continuing education for its EMS colleagues via an educational board in the ED. JHBMC is committed to improving patient outcomes through enhancing the knowledge of its nursing and ancillary staff. This year, JHBMC continued to support nursing staff participation in the Emergency Nurses Association Trauma Nursing Core Curriculum, Hospital Emergency Response Training for Mass Casualties and the Society of Trauma Nurses Advanced Trauma Care for Nurses Courses.

Research

The integrated Division of Acute Care Surgery continued to provide JHBMC with opportunities to join new and ongoing research initiatives focused on trauma care.

Rehabilitation

Approximately one-third of admitted trauma patients require a period of rehabilitative care after hospitalization, especially older patients with pre-existing comorbidities. JHBMC has access to an inpatient acute rehabilitation center on its campus to provide patients with this level of care. JHBMC's Social Work and Case Management Services assess each individual patient's post discharge needs prior to their release from the hospital.

Level II Adult Trauma Center: Sinai Hospital of Baltimore (LifeBridge)

2401 West Belvedere Avenue, Baltimore, Maryland
MIEMSS Region III

Sinai Hospital of Baltimore (Sinai) is a designated Level II Adult Trauma Center serving the Greater Baltimore metropolitan area. As part of the LifeBridge Health System (LBH), Sinai offers comprehensive treatment and preventative wellness services; educates medical students and residents; and engages in research to improve lives throughout Maryland and worldwide. Sinai treated 3,115 trauma patients from June 1, 2024, through May 31, 2025, according to the Maryland State Trauma Registry. Adult trauma services at Sinai are provided by the Acute Care Division of Surgery.

Notable Accomplishments

LBH played a pivotal role in advancing firearm safety legislation during the 2025 session of the Maryland General Assembly. As part of the Stop the Iron Pipeline campaign, LBH joined a coalition of trauma centers, community organizations, and advocates to support the successful passage of Senate Bill 443 Trafficking Regulated Firearms into law reclassifying the trafficking of regulated firearms as a felony and strengthening penalties for those who bring illegal guns into the state. These laws target the illegal flow of firearms into Maryland communities, directly addressing a critical upstream driver of violent injury. By closing loopholes and increasing penalties for those trafficking weapons, this legislation is expected to reduce the prevalence of illegal firearms, decrease community violence, and ultimately lower the number of preventable gun-related trauma cases. The campaign's unified approach, which included legislative testimony, public education, and survivor advocacy, demonstrates Sinai's commitment to pairing world-class trauma care with systemic prevention strategies.
In May, Sinai's Division of Trauma partnered with the Maryland Committee on Trauma at the annual Point-Counterpoint conference, where Trauma Program Manager James Gannon joined a generational panel of trauma nursing leaders to discuss advancing nursing practice.

Injury Prevention Programs and Initiatives

This year, Sinai trained more than 100 community members in Stop the Bleed®, and, in collaboration with several other regional and state trauma centers, provided additional classes reaching hundreds more community members across Maryland. In June 2024, we hosted a large-scale Bike Safety and Helmet Giveaway, distributing nearly 300 free bike helmets to children in our community while providing helmet fittings and bicycle safety education. In May 2025, Sinai hosted a Hyperthermia Awareness Event, engaging families on the dangers of vehicular heatstroke and prevention strategies. The event was broadcast on social media in real time, demonstrating how quickly a car can heat up to dangerous levels.

For the fifth consecutive year, Sinai Hospital partnered with Injury Free Coalition for Kids' Injury Prevention Day for kids, along with many other businesses and hospitals across the nation to turn our hospital green. Injury Free Coalition for Kids is a national

organization dedicated to preventing injury in children.

For the fifth straight year, Sinai Hospital and the Center for Hope again participated in the Red Desk Project in May, as part of Child Abuse and Trauma Awareness Month. A display of red desks – each one representing the life of a child lost to homicide in Baltimore City – was placed outside of the Center for Hope and Sinai Hospital, followed by a press conference and gathering of regional leaders urging a call to action to prevent child homicide and violence throughout Baltimore. The red desks were on display throughout the month of May and through National Gun Violence Awareness Day (June 7).

Quality Measures and Improvement

Sinai Trauma Services continues to be active in quality improvement initiatives. Partnering with our system-wide LBH Quality and Patient Safety Department and various multidisciplinary hospital committees allows the Division of Trauma to review cases concurrently and retrospectively at individual, unit, divisional, and system levels. Providers from all services involved in an injured patient's care routinely review and implement best practices to improve outcomes and the patient experience.

Our multi-year ED construction project reached a major milestone in this year with the completion of three brand-new trauma bays, each equipped with advanced monitoring and resuscitation equipment, expanding our capacity to care for the most severely injured patients. Additional improvements included a state-of-the-art ED radiology area with a new CT scanner and a dedicated EMS offload area designed to expedite patient acceptance and reduce EMS turnaround times.

Additionally, Sinai Hospital was awarded a $714,000 trauma equipment grant from the Maryland Health Care Commission (MHCC). This funding was used to enhance our neurosurgical and trauma surgical capabilities, further strengthening our ability to provide state-of-the-art care for critically injured patients.

Sinai's Hospital Violence Intervention Program (HVIP), in collaboration with the Center for Hope and Safe Streets, continued to address the root causes of interpersonal violence in Baltimore through bedside advocacy, safety planning, and sustained community engagement. Since the program's inception, Sinai has seen a significant downward trend in firearm-related injuries, with a reduction of firearm injuries presenting to Sinai by 42% since FY 2022.

This year, HVIP conducted 510 bedside interventions; 876 phone-based support interventions; 739 safety planning interventions; and 33 home and community visits. These efforts are reinforced through participation in multiple Safe Summer events and neighborhood outreach initiatives, fostering trust and visibility in the communities Sinai serves. While grant funding concluded at the end of FY 2025, the demonstrated impact, including a sustained reduction in firearm injuries compared to pre-program years, underscores the program's vital role in violence prevention. Sinai remains committed to seeking new resources to continue this critical work.

In October 2024, Sinai Hospital implemented a Low-Titer Whole Blood (LTWB) program for trauma resuscitation, bringing the hospital in alignment with national best practices for hemorrhage control. By incorporating whole blood into our trauma protocols, Sinai continues to strengthen its ability to provide cutting-edge, evidence-based resuscitation for Maryland's most severely injured patients.

Emergency Medical Services and Nursing Continuing Education

Sinai Hospital provides advanced airway management training for Baltimore County paramedics in our operating rooms, combining both hands-on and simulation-based instruction as part of the county's EMS training program.

Dr. Jeffery Sagel, Chief of Anesthesia and Associate Medical Director for Baltimore County EMS, leads a bimonthly lecture series for Maryland EMS clinicians, which is state-approved through MIEMSS and available for continuing education credit. Many Sinai physicians contribute to this series as lecturers. Dr. Sagel also serves as a representative on the Statewide Emergency Medical Services Advisory Council (SEMSAC) alongside Sinai Trauma Attending Surgeon Dr. Farheen Qurashi.

This year, Sinai expanded its trauma education offerings to include opportunities for nurses and clinicians to obtain free continuing trauma education credits from leading national trauma organizations and trauma centers. Additionally, we held a large multidisciplinary simulation involving Baltimore County EMS, ED, OR, NICU, L&D, PICU nursing, and surgical and OB/GYN residents, strengthening interdepartmental teamwork and readiness for complex trauma scenarios.

Fellowships and Residencies

Sinai is the third largest teaching hospital in the state, training residents in multiple specialties. All surgical residents and advanced practice providers at Sinai maintain current ATLS, ACLS, and BLS certifications. The surgical residents also have the opportunity to pursue additional trauma training in Advanced Trauma Operative Management, Focused Abdominal Sonography in Trauma, and Advanced Surgical Skills for Exposure in Trauma. Our residents complete four-week rotations at the University of Maryland Medical Center during their post-graduate III year focusing on pediatric surgery, Johns Hopkins main campus focusing on transplant surgery, and at Johns Hopkins Bayview Medical Center during their post-graduate II year focusing on burn surgery and wound care. We have also added to our residency program a global surgery rotation at Hospital Santo Tomas in Panama City, Panama. This is a 4-week long trauma rotation for one post-graduate IV resident per year.

Research

LBH Department of Research provides opportunities for all levels of providers and staff to participate in research initiatives, including those that advance trauma care. This past year, the Division of Trauma at Sinai Hospital has partnered with our Geriatric Surgery program and the Department of Advanced Orthopedics on research projects to further enhance the care we provide to our injured patients.

The Rehabilitation Institute at Sinai

The Rehabilitation Institute at Sinai's services are integrated throughout the patient's hospital stay at Sinai Hospital. When a patient is ready for discharge, Sinai can accommodate qualifying patients in a 43-bed inpatient rehabilitation center. It offers a full spectrum of rehabilitation services, including pain management, physical therapy, occupational therapy, and speech-language therapies. The rehabilitation center supports patient care with specialists in physiatry, social work, rehab psychology, offers programs for balance and dizziness, driving evaluation, return-to-work, and a brand-new division of rehabilitation engineering The ABBEL Research division. Additionally, the team now includes five APTA neuro certified specialists (NCS), five orthopedic certified specialists (OCS) and one geriatric certified specialist (GCS). Sinai is also proud to continue the ABPTRE accredited residency program. Our rehab goals for improvement over the next year include further expansion of our research and engineering capabilities, enhance professional development opportunities for our staff, and maintain high standards of patient care and advocacy. This year, we completed our CARF survey and were granted a three-year accreditation, the highest accreditation awarded by CARF.

Level II Adult Trauma Center: Capital Region Medical Center (UM)

901 Harry S. Truman Dr. N., Largo, Maryland
MIEMSS Region V

The University of Maryland Capital Region Medical Center (Cap Region) is a designated Level II Adult Trauma Center serving Prince George's County and other adjacent areas, including Washington, DC. With four major highways nearby, the hospital is an ideal location for local EMS transport and public transport. Cap Region is committed to restoring the quality of life for all its patients and their families, beginning with prehospital communication, and extending throughout their hospital stay, and long after discharge. From June 1, 2024, to July 31, 2025, the University of Maryland Capital Region Medical Center treated 2,390 trauma patients, according to the Maryland State Trauma Registry.

Opened on June 12, 2021, Cap Region's state-of-the-art facility features five treatment bays within a large trauma resuscitation unit, an operating room dedicated to trauma surgery, one operating room dedicated to acute care surgery, and one hybrid operating room dedicated to vascular, orthopedic, and trauma care. Its Acute Care Surgery and Trauma faculty consists of five board-certified surgical critical care full-time Associate Professors as well as one part-time surgeon and two community-practice surgeons with decades of trauma experience.

This year, Cap Region hosted rotating acute care surgery fellows from the R Adams Cowley Shock Trauma Center in Baltimore and supported the education of Howard University surgery residents at every level of their training, as well as rotating residents from Walter Reed National Military Medical Center, Ross University, and Anne Arundel Medical Center. Additionally, Cap Region's Sickle Cell Clinic, launched in March 2023, relocated in FY 2025, enabling it to treat more patients, while its new Center for Advanced Medicine marked its first anniversary of providing cancer care to Prince George's County in April 2025.

Quality Management and Improvement

Acute Care Surgery's quality management program consists of a multidisciplinary care team whose collaborative efforts align positive patient outcomes with clinical expertise and best practices and ensure access to necessary resources. Multiple monthly comprehensive case and peer reviews, loop closures, and process improvement initiatives reflect Cap Region's commitment to improving the care and outcomes of injured patients.

Injury Prevention Programs and Initiatives

Through its injury prevention programs and initiatives, Cap Region educated over 715 people this year. Inpatients receive injury-specific prevention and awareness resources daily. Cap Region offered injury prevention information and tips, such as the myriads of Trauma Awareness and Prevention activities held during National Trauma Awareness Month, in May, fall prevention demonstrations, and Stop the Bleed® training. Additionally, Cap Region educated the PG County community on Stop the Bleed® to school nurses, resources officers, and the community at large in collaboration with R Adams Cowley Shock Trauma Center. In conjunction with its Community Health and Domestic Violence and Sexual Assault Center, Cap Region participated in community events, and visited multiple community centers for aging, providing general injury prevention awareness. It distributed bicycle helmets and car seats and actively participated in the DC Trauma

Injury Prevention Coordinators Collaborative.

This year, Cap Region expanded its Violence Intervention Program (CAP-VIP) from 50 participants to 85 while likewise raising the age of inclusion to reflect increased needs for services. The program provides weekly virtual men's group meetings and an outdoor basketball group, enabling continued contact with survivors and ensuring the provision of post-discharge mental health and resource support necessary for a full recovery. This year, CAP-VIP held its third annual Health and Wellness fair showcasing survivors of violence who have participated in the program, and hosted its first Gun Violence Summit and Survivors Empowerment Exchanged to promote reduction of violent recidivism and enhancing professionalism among our participants.

EMS and Nursing Continuing Education

The Acute Care Surgery team provides enhanced EMS collaboration with Prince Georges Emergency Medical Services as well as Prince Georges Office of Emergency Management. Nursing education opportunities have ramped up to include in-person training, skills simulation stations, lectures specific to the care of the injured patient, and full-scale exercises that mimic real-life scenarios with emphasis on decontamination training.

Research

Cap Region's Trauma Registry and Acute Care Surgery team support internal, local, and multi-institutional research efforts to identify trends, improve outcomes, and evaluate injury prevention efforts. This year saw continued collaboration with the R Adams

Cowley Shock Trauma Center and the University of Maryland School of Public Health, focusing on research on violence intervention and recidivism – a top priority for the team. Due to this research, increased funding has been awarded to the Violence Intervention Program.

Rehabilitation

The Physical Medicine and Rehabilitation teams collaborate to ensure that the physical, occupational, and speech-language therapy needs of the injured patient are met. This year, the Physical Medicine Department enhanced its collaboration with the Acute Care Surgery team to focus on early ambulation and discharge for our injured patients.

Level II Adult Trauma Center: Suburban Hospital (JHM)

8600 Old Georgetown Road, Bethesda, Maryland
MIEMSS Region V

Suburban Hospital – Johns Hopkins Medicine (Suburban) is a state-designated Level II Adult Trauma Center serving Montgomery County, but also easily accessible from Frederick and Prince George's Counties. Suburban and its entire staff provide safe, compassionate, and evidence-based quality care to all injured patients, not only during their hospitalization but also throughout the entire continuum of trauma care. From June 1, 2024, through May 31, 2025, Suburban treated 2,900 trauma patients, according to the Maryland State Trauma Registry.

This year, Suburban Hospital marked the first anniversary of its partnership with Montgomery County Fire and Rescue to support the Montgomery County Prehospital Blood Program. The lifesaving benefit of administering whole blood to hemorrhaging patients in the prehospital setting is well established. Units of whole blood are stored at Suburban Hospital for easy access and exchange by EMS personnel.

To maintain increased readiness for pediatric trauma patients presenting emergently to the trauma center, new pediatric equipment and care processes were stress tested by Suburban during its first Pediatric Mock Trauma Activation in April 2025.

As part of its continued determination to return trauma patients to a productive life, Suburban Hospital renewed its memorandum of understanding with Adventist HealthCare Rehabilitation Center for specialty services. Physical, occupational, and speech therapy are provided onsite to trauma patients during their hospital stay. All trauma patients are assigned to a case manager and a social worker who work closely with the trauma team to make the necessary referrals to rehabilitation facilities.

Continuing Education Programs

In addition to the open monthly multidisciplinary Mortality and Morbidity conferences, trauma nursing education hours, including case reviews, Suburban continued to highlight internal educational opportunities based on actual trauma registry cases. In November 2024, Suburban Hospital, in collaboration with Montgomery County EMS and other regional trauma partners, hosted more than 180 EMS clinicians, nurses, advanced practice providers and physicians for the yearly Critical Issues in Trauma Seminar.

Through a combined agreement with Montgomery County EMS Training Academy and Montgomery County Community College, the Suburban Emergency Department also serves as a training site for prehospital clinicians. This ongoing alliance for training and professional development is further highlighted by the Montgomery County Emergency Preparedness Collaborative (MOCEP), a long-standing local partnership co-chaired by Suburban and EMS, and dedicated to sharing best practices for exercise planning, overall readiness and response to real-world emergencies.

Quality Management Program

In a concerted effort to identify opportunities for improvement at all levels, every trauma patient's chart is regularly reviewed by a trauma clinical data abstractor, a trauma nurse with expertise in performance improvement, the trauma program director, and the medical director of Trauma Services. Additionally, all deaths, transfers, complications, and unexpected treatment outcomes are presented and discussed at the monthly Morbidity and Mortality conference for additional education and feedback.

Injury Prevention Initiatives

This year, Suburban Hospital Trauma Center's injury prevention initiatives included 23 events featuring over 750 individual in-person encounters. Suburban has been an active participant in the national Stop the Bleed® campaign since 2016. As part of the Maryland Trauma Network's statewide initiative to spotlight National Stop the Bleed® Day on May 22, 2025, the Trauma Center hosted a four-hour Stop the Bleed® Marathon, training more than 70 people and distributing as many Stop the Bleed® kits and tourniquets. Additionally, the hospital supported the Maryland Committee on Trauma on a large-scale Stop the Bleed initiative that reached over 200 people.

Level III Adult Trauma Center: Western Maryland (UPMC)

12500 Willowbrook Road SE, Cumberland, Maryland
MIEMSS Region I

Located in Cumberland, Maryland, UPMC Western Maryland is a nonprofit, acute-care hospital serving residents of Allegany and Garrett Counties in Maryland, as well as surrounding areas in West Virginia and Pennsylvania. The hospital is part of the University of Pittsburgh Medical Center (UPMC) network. UPMC Western Maryland is designated as a Level III Adult Trauma Center, providing critical trauma care primarily through its Emergency Department. From June 1, 2024, to May 31, 2025, the hospital treated 1,138 trauma patients, according to the Maryland State Trauma Registry.

Quality Management and Improvement. As part of the UPMC system, the hospital leverages UPMC's clinical expertise and innovation to drive quality initiatives across its tristate service region. UPMC Western Maryland is enrolled in the American College of Surgeons Trauma Quality Improvement Program (TQIP), enabling data-driven benchmarking and policy development to standardize care and improve outcomes using evidence-based

best practices.

UPMC Western Maryland's multidisciplinary team approach is designed to serve the unique needs of each patient. Staff work diligently to facilitate communication between hospital and prehospital personnel. In addition to serving as a base station, UPMC Western Maryland supports this mission through representation on the Miltenberger Emergency Services Seminar planning committee, the MIEMSS Region I EMS Advisory Council, the Maryland Trauma Center Network, Maryland EMS Protocol Revision Team for Trauma, Allegany County Emergency Services Board, Allegany County Emergency Services Quality Assurance Review Board, Allegany County Medical Review Board, Maryland Region I & II Healthcare Coalition, and the MIEMSS Region I Prehospital Care and Quality Improvement Committee.

Injury Prevention Programs and Initiatives

In conjunction with the Allegany County Department of Emergency Services and the Garrett County Department of Public Safety, UPMC Western Maryland provides instructional support for the Stop the Bleed® program for courses being taught to Fire/Rescue and EMS clinicians, law enforcement officers, and citizens throughout MIEMSS Region I and bordering counties in Pennsylvania and West Virginia.

UPMC Western Maryland participates in the Maryland Kids in Safety Seats program to help provide a safe ride for the children in our region. Additionally, UPMC Western Maryland networks with Maryland EMS for Children and Safe Kids Maryland to administer programs to prevent childhood injuries.

Emergency Medical Services and Nursing Continuing Education

UPMC Western Maryland serves as the central hub for continuing education in MIEMSS Region I, offering accredited training across a wide range of clinical subjects, including trauma care. The hospital's Training Center and Professional Development team deliver intermediate and advanced instruction through nationally recognized courses such as Advanced Cardiac Life Support, Pediatric Advanced Life Support, Neonatal Advanced Life Support, Basic Trauma Nursing, and the Trauma Nursing Core Course. In addition to these offerings, the team plays a key role in organizing and executing the annual Miltenberger Emergency Services Seminar. UPMC Western Maryland also functions as a clinical site for paramedic education programs affiliated with Garrett College, Blue Ridge Community and Technical College in West Virginia, and Indiana University of Pennsylvania. The hospital's simulation lab features three state-of-the-art patient manikins and is supported by a partnership with the University of Pittsburgh's WISER Institute, enabling hands-on learning for hundreds of staff members and external learners. Educational programs are designed to meet the needs of a diverse multidisciplinary care team, including physicians, nurses, technicians, unit assistants, and EMS clinicians.

Rehabilitation

The 13-bed Comprehensive Inpatient Rehabilitation Unit (CIRU) at UPMC Western Maryland delivers specialized rehabilitation services tailored to the needs of trauma patients. With a focus on restoring self-care abilities, mobility, and communication, the CIRU works to minimize limitations while promoting wellness, independence, and self-worth. Each patient receives a personalized care plan that extends beyond their inpatient stay, supporting a smooth transition back to home and community life.

Level III Adult Trauma Center: Meritus Medical Center

11116 Medical Campus Road, Hagerstown, Maryland
MIEMSS Region II

Meritus Medical Center (MMC) is a designated Level III Adult Trauma Center serving Washington and Frederick Counties in Maryland, southern Pennsylvania, and the eastern panhandle of West Virginia. The busiest Trauma Center in Western Maryland, its 24/7 in-house trauma team (all board-certified in trauma and surgical critical care) provides full care of the injured from the moment of arrival in the trauma resuscitation room to the operating room and ICU. The same trauma team provides continuity of care throughout the whole hospital stay. From July 1, 2024, through June 30, 2025, MMC treated over 3,700 trauma patients, according to the Maryland State Trauma Registry. In June 2025, the MMC Division of Trauma and Acute Care Surgery launched the Surgical/Trauma ICU (STICU) in order to provide specialized surgical critical care to ill and injured patients.

The Trauma Center at Meritus Health supports the prehospital EMS clinicians in Washington County through close collaboration and feedback. This year, the Trauma Program continued to hold local trauma system review calls, known as the Trauma Clinical Care Conference Call (TC4), modeled after the US military's weekly casualty care calls, which highlight and review lessons learned for care of the injured throughout the trauma system continuum of care. Topics include trauma patient care from the scene through transport, trauma bay resuscitation, the operating room, critical care, and patient discharge from the hospital, providing valuable feedback to the entire trauma system care team. In addition, MMC continued its tradition of holding biannual trauma conferences, delivering continuing education to more than 300 providers, including EMS clinicians, hospital staff, and other local healthcare providers from outside the organization.

Quality Management and Improvement

MMC worked throughout the year to strengthen the response and workflow in its trauma rooms allowing for efficient and effective care and disposition of trauma patients. Time to initial CT scan evaluation, the OR, and overall ED length-of-stay times were significantly reduced, thus improving overall ED throughput. The MMC trauma team provides continuity of care for those admitted and continues to hold daily multidisciplinary care rounds which has significantly decreased hospital length of stay and improve patient satisfaction.

Injury Prevention Programs and Initiatives

This year, MMC promoted distracted driving awareness and falls prevention through participation in statewide injury preven-

tion days. Additionally, MMC presented several Stop the Bleed® classes in the community and participated in the statewide Stop the Bleed Day sponsored by all Maryland trauma centers, and is actively collaborating with the Washington County Health Department on a two-year initiative to train all Washington County teachers in Stop the Bleed®. Working with Safe Kids Washington County, MMC helped provide bicycle, fire, medication, sun, and pedestrian safety education to children in the community through various community initiatives. MMC likewise partnered with local summer camps to discuss general safety with children. In addition to monthly car seat checks and loaner programs, MMC trauma staff offered one-on-one car seat installation assistance to families in the community; teaching parents and grandparents how to properly install child passenger safety seats. MMC offers both virtual and in-person car seat checks.

EMS and Nursing Continuing Education

This year, MMC organized free trauma conferences for staff and EMS partners, and provided trauma nurse core course (TNCC) and emergency nursing pediatric course (ENPC) courses at the hospital. The Trauma Department also provided Case Reviews for EMS throughout the region through our Trauma Clinical Care Conference Calls. Each spring and fall, the trauma department team recognizes a Trauma Nurse of the Year and a Critical Care Trauma Nurse of the Year for his/her outstanding care of our trauma patients. The honoree is granted an educational stipend to spend at on trauma continuing education. Monthly drop-in sessions were started with the TACS providers reviewing skills and providing up-to-date trauma best practice education to all staff that care for our trauma population.

Research

MMC's professional nursing research council studies and promotes evidence-based best practices in nursing. In FY 2025, the MMC Division of Trauma and Acute Care Surgery held monthly research meetings and submitted four posters to the Meritus School of Osteopathic Medicine inaugural TraumaCon meeting. Among topics presented included research and process improvement of first review of LTO Whole Blood use at MMC and the use of the Toyota Kata method to improve trauma resuscitation times. The TACS Division also continued to hold a monthly Journal Club to discuss relevant literature for best practice in Trauma, emergency general surgery, and surgical critical care.

Rehabilitation

Meritus Physical Therapy is the region's largest, most comprehensive rehabilitation center, providing care in multiple locations in Washington County and Frederick, Maryland. Meritus offers a wide selection of rehabilitation programs including, speech, occupational and physical therapy. We also provide aquatic therapy program in a warm water pool equipped with a chair lift and handrails. In addition, Meritus Health opened a Sports Medicine/Physical Therapy center at the Valley Mall which, through leading-edge technology, supports the unique needs of athletes of all ages. Meritus Health is the sports-medicine provider of choice for the Flying Boxcars professional baseball team and also partners with Washington County Public Schools to provide professional athletic trainers in the county's high schools.

Level III Adult Trauma Center: Peninsula Regional Medical Center (TidalHealth)

100 East Carroll Street, Salisbury, Maryland
MIEMSS Region IV

TidalHealth Peninsula Regional is a designated Level III Adult Trauma Center serving the Delmarva Peninsula, the Eastern Shore of Maryland, Sussex County in southern Delaware, and Accomack County on the Eastern Shore of Virginia. TidalHealth encompasses the former Peninsula Regional Health Systems, Nanticoke Memorial Hospital, McCready Memorial, the Peninsula Regional Medical Group, Nanticoke Physician Network, Delmarva Heart, and Peninsula Cardiology. On May 1, 2025, Atlantic General Hospital (AGH) officially joined the TidalHealth system, providing an exciting opportunity to further integrate our services and collaborate closely with AGH to expand access, improve quality, and advance health outcomes for the patients and families we serve. TidalHealth Peninsula Regional's licensed bed count is 273. Atlantic General Hospital's licensed bed count is 42. Together, these facilities expand our capacity to provide comprehensive care to the Delmarva community.

Driven by a focus on health equity, we continue to address the specific health challenges of our communities. With access to the latest technology, innovative techniques, and ongoing training, we are constantly evolving to improve the health and wellness of the entire Delmarva region. From June 1, 2024, to May 31, 2025, TidalHealth Peninsula Regional treated 3,143 trauma patients, according to the Maryland State Trauma Registry. The Emergency/Trauma Center provides adult and pediatric trauma services at TidalHealth Peninsula Regional.

Quality Management and Improvement

TidalHealth Peninsula is committed to continuous quality improvement through a range of strategic initiatives. Our Trauma and Emergency Department (ED) leadership teams actively collaborate with the EPIC healthcare software team to enhance the usability of the Trauma Narrator—EPIC's proprietary documentation tool. These efforts aim to make the system more intuitive and efficient for clinicians.

In FY 25, we implemented key enhancements to the Trauma Narrator, including: repositioning acknowledge orders and specimen/tasks above the Medication Administration Record (MAR) to improve visibility; integrating Suicide Risk assessments directly into the trauma documentation section, launching a new Massive Transfusion Protocol (MTP) workflow, which enables real-time blood scanning for improved accuracy and efficiency, and transitioning to electronic transfer forms, allowing for seamless digital completion and signatures.

In addition to these technological updates, a multidisciplinary team—working in close collaboration with clinical staff—is focused on improving key trauma care metrics. These include timely and accurate recording of vital signs, antibiotic administration for open fractures, time to head CT for patients with traumatic brain injury, and door-to-reversal times for anticoagulated patients pre-

senting with abnormal imaging. To support continuous learning and performance improvement, team members receive individualized documentation feedback as needed. Together, these initiatives reflect our commitment to delivering high-quality, efficient, and patient-centered trauma care.

TidalHealth Peninsula Regional continues to conduct trauma simulation sessions, offering clinical staff the opportunity to practice real-time documentation within the electronic medical record (EMR) while reinforcing the trauma nurse process. These hands-on simulations enhance clinical readiness, promote team coordination, and help standardize trauma workflows.

The Trauma Committee remains actively engaged in reviewing, revising, and approving proposed updates to trauma program policies across the health system. This ongoing work ensures a consistent, evidence-based approach to trauma care that aligns with current best practices and supports high-quality outcomes for our patients.

The ICU nursing team partnered with Respiratory Therapy to assess the risk of pressure injuries related to respiratory devices. Together, they evaluated device positioning and implemented adjustments to minimize skin breakdown. Additionally, sacral offloading assessments were conducted to evaluate the effectiveness of current patient turning and repositioning tools. In early April, the ICU launched a pilot of a new turning and repositioning system designed to reduce hospital-acquired pressure injuries. As a result of these efforts, the ICU reported zero sacral and heel pressure injuries in May 2025 demonstrating considerable progress in patient care and safety.

In the Emergency Department, an electronic handoff process was implemented for medical-surgical patients with the goal of reducing the time from "bed ready" to patient placement. Since the project's launch in August 2024, this time has decreased by more than 10%, improving patient flow and admission efficiency.

In FY 25, the EMS Medical Director actively participated in local and regional EMS meetings, providing leadership, guidance, and education to EMS agencies throughout the region. EMS clinicians also play a vital role as members of TidalHealth Peninsula's Acute Myocardial Infarction (AMI) and Stroke Committees, contributing their expertise to advance care protocols and outcomes.

Injury Prevention Programs and Initiative

Since June 2024, TidalHealth Peninsula has actively engaged in a variety of community safety and education initiatives designed to promote health, prevent injuries, and raise awareness across Delmarva. In June 2024: Partnered with Safe Kids to provide water safety education at the Maryland State Firemen's Convention. In August 2024: At the National Night Out, offered bike safety education and distributed 93 helmets to community members. In December 2024: At the annual Children's Christmas Carnival, the trauma department reinforced bike safety messaging and fitted 28 children with properly sized helmets. In March 2025: The Trauma Team participated in a distracted driving awareness commercial in partnership with MD DOT Highway Safety. In May 2025: The trauma department put on a heat safety awareness display on campus aimed at educating caregivers and encouraging behavior change to prevent heat-related illnesses. In 2024 and 2025: At "Soles for Seniors" and "Health Fest," the trauma department delivered evidence-based guidance on fall risk reduction, emphasizing balance exercises and environmental safety modifications for older adults.

Since June 2024, TidalHealth Peninsula has conducted multiple Stop the Bleed (STB) training sessions for both hospital staff and members of the community. These sessions are designed to equip participants with lifesaving skills to respond to traumatic bleeding emergencies. Highlights include a STB training session at the Arborist Convention and a community session hosted at the Hebron Fire Company as part of the Statewide Stop the Bleed® Initiative by all trauma centers. Trauma and Emergency Department staff, along with local fire and EMS personnel, actively participate as instructors and attendees—demonstrating our ongoing commitment to injury prevention and community readiness.

TidalHealth Peninsula Regional continuously monitors on-scene times for trauma patients transported to our facility. Data is categorized by the primary transporting jurisdictions—Wicomico, Somerset, Worcester, Salisbury, and Ocean City—to identify trends and opportunities for improvement. This information is regularly shared at local EMS advisory meetings and displayed on the board outside the EMS lounge for clinician review. Currently, the average on-scene time across these areas is approximately 12 to 15 minutes.

In collaboration with the Maryland Institute for Emergency Medical Services Systems (MIEMSS), we also monitor EMS off-load times at TidalHealth Peninsula. The current median off-load time is 7.18 minutes, with the 90th percentile averaging 14.9 minutes. These metrics are actively communicated to EMS clinicians to support ongoing performance enhancement and patient care efficiency.

EMS and Nursing Continuing Education

TidalHealth Peninsula plays a vital role in planning, coordinating, and sponsoring ongoing educational opportunities for both prehospital and hospital healthcare providers. The Annual Topics in Trauma Conference (September 2024) attracted EMS clinicians and nurses from Maryland, Delaware, Pennsylvania, and Virginia. The conference covered key topics including the daily practice of prehospital care and advanced inpatient trauma management, fostering regional collaboration and knowledge sharing. Trauma Nursing Core Course (TNCC) is mandatory for all registered nurses, TNCC certification ensures staff are equipped to deliver high-quality trauma care. In Fiscal Year 2025, 29 nurse completed the course and earned certification. Currently, 78% of Emergency Department Registered Nurse (ED RN) staff hold Trauma Nursing Core Course (TNCC) certification. In March 2025, a pediatric mock simulation was conducted involving EMS and Emergency Department staff. The exercise included participation from pediatric hospitalists and the Regional Pediatric Medical Director for Region IV, fostering teamwork and preparedness in caring for pediatric patients across the region. Emergency Nursing Pediatric Course (ENPC) (April 2025) was hosted at TidalHealth Peninsula, this course prepares nurses to provide expert emergency care to pediatric patients. ENPC, developed by the Emergency Nurses Association, is an industry-leading program focused on pediatric emergency nursing. Moving forward, TidalHealth aims

to offer ENPC consistently to enhance nurse competency, confidence, and patient outcomes across Delmarva. Continuing Education for EMS Clinicians: TidalHealth Peninsula provides advanced training including Advanced Life Support (ALS), ALS skills refreshers, and paramedic recertifications to EMS personnel in Worcester, Wicomico, and Somerset Counties. Support for EMS Education Programs: Through a partnership with Wor-Wic Community College, TidalHealth serves as a clinical training site for EMS students. This collaboration allows students to complete rotations across various hospital units, deepening their understanding of how evidence-based guidelines apply throughout the continuum of care.

Fellowships and Residencies

The TidalHealth General Surgery Residency Program delivers high-quality surgical training rooted in service, community care, and academic excellence. With a 123-year legacy, it prepares compassionate, skilled surgeons ready to serve diverse populations and meet regional healthcare needs. Residents train under expert faculty, gaining broad experience across surgical subspecialties and are supported in research, education, and board certification. Currently, the General Surgery Residency Program consists of fourteen residents, all of whom are supported by a team of highly qualified faculty committed to excellence in surgical education and the advancement of community health.

Rehabilitation

TidalHealth Peninsula maintains a robust in-house rehabilitation program offering physical, occupational, and speech therapy to support patients through every stage of recovery. For individuals requiring continued care after hospitalization, inpatient skilled nursing services are available at Alice B. Tawes Nursing & Rehabilitation Center in Crisfield, MD. To ensure seamless access to extended rehabilitation, TidalHealth also holds a memorandum of understanding with Encompass Health Rehabilitation Hospital in Salisbury, as well as other appropriate facilities. These partnerships enable us to provide patients recovering from traumatic injuries with the specialized care and additional recovery time they may need to regain independence and improve quality of life.

Adult Trauma Center: ChristianaCare Level I Adult Trauma Center – Newark Campus

4755 Ogletown-Stanton Rd., Newark, Delaware

ChristianaCare Level I Trauma Center is the only Level I Adult Trauma Center in the state of Delaware, as well as the only Level I Adult Trauma Center along the I-95 corridor between Philadelphia, Pennsylvania, and Baltimore, Maryland. It serves as the regional referral center for a catchment area that includes the entire state of Delaware, Southern Chester County (Pennsylvania), Salem County (New Jersey), and Cecil County in northeastern Maryland.

As an American College of Surgeons-verified Level I Adult Trauma Center, Christiana Hospital has the capability for the care and treatment of traumatically injured patients at all levels of acuity, including those who are critically injured. From July 1, 2024, through June 30, 2025, it treated ~5,091 patients, with ~3,500 (69%) being admitted for trauma care. Of those admitted, ~11% were Maryland residents.

Adult Trauma Center: Washington Hospital Center (MedStar)

110 Irving Street, NW, Washington, DC

MedStar Washington Hospital Center delivers exceptional patient-first care by providing the highest quality and latest medical advances through excellent inpatient care, education, and research. MedStar Washington Hospital Center is the largest and busiest hospital in the Washington, DC, greater metropolitan region and is one of two United States hospitals honored with both Magnet and Pathway to Excellence designation, recognizing our commitment to nursing excellence and the importance of a positive work environment. The MedSTAR (Medical Shock/Trauma Acute Resuscitation) Trauma Unit at MedStar Washington Hospital Center is the regional referral center for critical polytrauma, treating individuals who sustained traumatic injury and multiple victims simultaneously in mass trauma occurrences. Located in the heart of the nation's capital, the Center has responded in times of crisis, including treating patients of the September 11, 2001, terrorist attack on the Pentagon, victims of the Navy Yard shooting in 2013, and the active assailant attack on the Congressional Baseball Game for Charity in 2017.

Every trauma surgeon at MedSTAR Trauma is fellowship trained, has completed the American College of Surgeons Committee on Trauma training in Disaster Management and Emergency Preparedness, and is Advanced Burn Life Support-certified. Continuously verified by the American College of Surgeons as a Level 1 Facility since 1990, MedSTAR Trauma serves as a referral center for a 150-mile radius of the hospital, receiving critical trauma patients from the District of Columbia, Maryland, Virginia, Delaware, Pennsylvania, and beyond. It provides both air and ground critical care transport via MedSTAR Transport, bringing in patients from referring hospitals and from the scene of injury. This year, MedSTAR Trauma treated 2,304 trauma patients.

Adult Burn Center: Bayview Medical Center (JHM)

4940 Eastern Avenue, Baltimore, Maryland
MIEMSS Region III

The Burn Center at Johns Hopkins Bayview Medical Center (JHBMC) serves the residents of Maryland and specific regions of adjacent states. The Burn Center provides a comprehensive, nationally recognized program of care for patients with burn injuries. In FY 2025, JHBMC treated 666 burn patients (252 inpatients and 395 outpatients), either in the emergency room or under observation.

JHBMC advanced the science of burn care in FY 2025 with peer-reviewed publications on a wide variety of burn topics, including resuscitation, skin substitutes, and wound healing. In addition, the JHBMC's robust quality and performance improvement program has begun publishing its findings. Research projects including ex-

ploration of the impact of sleep on burn pain, early ambulation following skin grafting, and the experience of pain after childhood adversity.

This year, JHBMC supported vital programs rooted in evidence-based practice. Current initiatives directed at better serving the Burn Center's patients include quality improvement programs to improve sleep hygiene, address socioeconomic disparities in health care, decrease hospital-acquired infections, decrease pain, and improve functional outcomes of burn patients. JHBMC likewise played a vital role in providing burn care education to prehospital and hospital-based clinicians, including nursing students, paramedic students and members of the armed services prior to their deployments.

JHBMC remains verified by the American Burn Association. This distinction affirms that the Burn Center has met the highest standards of care for the burn-injured patient.

Quality Management and Improvement

JHBMC maintains a system dedicated to tracking and responding to a variety of quality improvement metrics, including time from scene to initial presentation, throughput time from ED to admission, and time to initial excision of the burn wound. In addition, the Burn Center works closely with the base station to identify communication and transport problems in near-real time. Additional metrics tracked include time to initiation of tube feedings, incidence and prevalence of compartment syndrome, development of adult respiratory distress syndrome (ARDS), time to complete excision of burn wounds, and use of continuous renal replacement therapy (CRRT) in the OR. These metrics are reported and discussed in a multi-disciplinary Joint Practice Committee monthly. Executive leadership support of this program resulted in the creation of a new tableau dashboard for near real-time tracking of these identified areas of interest.

Injury Prevention Programs and Initiatives

JHBMC designs, leads, and implements community outreach and education in a variety of ways. Educational offerings have included presentations in the Johns Hopkins Health Systems Pain Resource Program, the Johns Hopkins Occupational Therapy Hand and Acute Fellowship Program, and schools of nursing. JHBMC continues to host annual Topics in EMS conferences. The Burn Center also offers Advanced Burn Life Support courses to its internal and external staff, as well as prehospital clinicians. Community outreach activities included statewide health and safety fairs and programs in burn prevention. Outreach activities with burn survivors continued with participation in the Phoenix Society for Burn Survivors, the World Burn Congress, and Survivors Offering Assistance in Recovery (SOAR). This year, the Burn Center sent a record number of survivors, their families, and staff to the World Burn Congress where they participated in life-changing activities designed around a shared vision for thriving in survivorship.

The Burn Center's partnership with the Baltimore Firefighters' Burn Foundation has provided advanced opportunities for community engagement with survivors and firefighters. As part of these initiatives to better understand the etiology of firefighter injuries the burn center team participates in a live training with the fire department and holds join fundraising events.

EMS and Nursing Continuing Education

JHBMC provides clinical education at local nursing schools. The Burn Center cycles EMS students through clinical rotations and coordinates biannual prehospital and clinical educational opportunities, including Advanced Burn Life Support. In addition, JHBMC offers an EMS/Firefighter Burn Course for prehospital clinicians throughout the region, and participates in annual Emergency Medical Technician ALS updates in many Maryland counties. JHBMC delivers frequent lectures at EMS Regional Conferences as well as the EMS Care Conference, as well as to outside hospital conferences and lectures throughout the region upon request. Onsite clinical training for medical, nursing, rehabilitation, psychology, and dietician students continues. Additionally, the Burn Center provides educational presentations at many colleges and universities throughout the region for various health disciplines, including prehospital clinicians.

Research

The Burn Center collaborates with multiple disciplines, including physical and occupational therapy, critical care, nursing, infectious disease, palliative care, and psychology, to investigate complex, multi-disciplinary research questions. It participates in sponsored clinical trials, federally funded multicenter trials, and investigator-initiated research. The Michael D. Hendrix Burn Research Laboratory actively studies the non-healing wound environment in animal models, and looks at ways to improve burn wound healing. JHBMC's research this year included the utilization of social media during COVID-19; pressure mapping to prevent pressure injuries; risk factors for cooking injuries; opioid dependence in burn survivors; antibiotic prophylaxis; and the management of weight changes during acute hospitalization. The Burn Center publishes and presents its findings at various local, regional, and national conferences.

Fellowships/Residencies

For over 20 years, the Johns Hopkins Burn Center has provided annual fellowship training for physicians in both general and plastic surgery tracks. In addition, the Johns Hopkins Burn Center provides an ACGME accredited burn and critical care fellowship. The burn center also provides residency training in partnership with local hospitals and universities, including Johns Hopkins University, ChristianaCare Health System, Union Memorial Hospital, St. Agnes Hospital, Hershey Medical Center, and Sinai Hospital.

Rehabilitation

The Johns Hopkins Burn Rehabilitation Department is dedicated to rehabilitating burn survivors. Every patient admitted to the Burn Center is seen by PT/OT within the first 24 hours. This year, the Burn Center evaluated 252 inpatients. Burn inpatients are treated on a daily basis in the Burn Center's onsite burn rehabilitation gym or in their rooms, depending upon the patient's condition. The burn therapists at the burn center represent the nation's best, serving in leadership roles in the American Burn Association

and as participants in a multi-center research study investigating early ambulation in burn patients. In addition, the Rehabilitation Department works with case management and social workers to discharge patients to appropriate levels of care.

Improvements to the Continuum of Care

A weekly multi-disciplinary conference held to discuss each burn patient and burn consultation allows the Burn Center to better plan for discharges with a dedicated burn case manager and dedicated licensed clinical social worker (LCSW). With executive-level support, the Burn Center was able to create a new outpatient physician assistant (PA) position and attending physician roles in the last year. The addition of these positions allows for additional clinic days and visits. As a result, the Burn Center is able to closely follow patients post-discharge from the Burn Center.

Adult Burn Center: Washington Hospital Center (MedStar)

The Burn Center at MedStar Washington Hospital Center (MedStar WHC) is the only adult burn treatment center in the Washington Metropolitan area, serving the District, Southern Maryland, Northern Virginia, and Eastern West Virginia. In addition to providing care to patients with thermal, electrical, and chemical injuries, MedStar WHC Burn Center treats patients with soft-tissue injuries and diagnoses. This year, 656 acute burn-injured patients were admitted for treatment, with another 868 treated as outpatients. The Burn Center provided outpatient burn care for 2,554 patients in the Burn Clinic and 2,281 patients in the Wound Clinic. The Burn Center features a 10-bed ICU with its own operating room and tanking room, as well as a 23-bed Burn Step-Down Unit and a Burn Rehabilitation Gym staffed by specialized Burn Physical and Occupational Rehabilitation Therapists. Reconstructive surgery and rehabilitation are available for patients in the post-acute and convalescent phases of their care, regardless of where they received treatment for their acute burn injury.

The Burn Center meets stringent criteria for verification by the American Burn Association for providing excellence in burn care. Its multidisciplinary team approach to burn care provides comprehensive services for patients from injury through rehabilitation. The Burn Center is a national leader in laser scar revision, with a practice dedicated to patients with burn and traumatic injuries. For patients suffering from pain, itching, tightness, and discoloration associated with burn or traumatic scars, the Burn Center offers multiple interventions, including compression and massage, laser scar revision, and surgical reconstruction.

The Burn Center began complete renovations of its inpatient and outpatient clinic spaces. The first phase of renovations included complete remodeling of the Burn ICU and Burn Operating Room. These spaces welcomed their first patients in summer 2025. The next phase of the project will include renovations of the Burn Step Down Unit, Burn Rehabilitation Therapy Gym and Burn Clinic. These renovations are expected to begin in early 2026.

Pediatric Trauma and Burn Centers

Pediatric Trauma and Burn Centers: Johns Hopkins Children's Center

1800 Orleans Street, Baltimore, Maryland
MIEMSS Region III

JHCC Pediatric Trauma Center

The Johns Hopkins Children's Center (JHCC) is the designated Level I Pediatric Trauma Center serving Maryland and the surrounding region. The 205-bed, state-of-the-art hospital features an expansive pediatric emergency department equipped with dedicated pediatric trauma resuscitation bays, a 28-bed Pediatric Intensive Care Unit (PICU), and a pediatric operative suite with designated emergency operating rooms for pediatric trauma patients. From June 1, 2024, through May 31, 2025, JHCC treated over 1,100 trauma-injured children, according to the Maryland State Trauma Registry. In 2024, The Johns Hopkins Hospital received its fifth Magnet Designation from the American Nurses Credentialing Center, a healthcare organization's highest and most prestigious nursing designation, signifying innovation, excellence, and quality-driven patient care. Johns Hopkins Children's Center is ranked among the top pediatric hospitals in the country, including an Honor Roll placement at #10 and top statewide recognition. Johns Hopkins Pediatric Transport helped arrange the interfacility transfers of more than 800 trauma and burn patients from regional hospitals to JHCC. The JHCC Trauma team launched a quarterly collaborative meeting with multidisciplinary stakeholders from across the organization. These collaborative sessions drive discussion of ongoing initiatives from disciplines across JHCC, help to identify new research opportunities, and reinforce the shared mission of the trauma program.

Quality Management and Improvement

Johns Hopkins Children's Center (JHCC) concluded the fiscal year with its highest volume of pediatric trauma patients to date. The program's multidisciplinary Performance Improvement (PI) Committee meets monthly to review trauma statistics and other key data, promoting transparency and timely identification of areas for improvement. These statistics are tracked over months and years to identify trends and inform ongoing quality initiatives. All emergency department visits for traumatic injuries undergo thorough review, with patient charts audited through discharge. The JHCC Pediatric Base Station maintains an active quality improvement (QI) plan to regularly evaluate online medical direction provided to EMS clinicians, who offer formal and informal feedback to jurisdictional QI officers. Collaboration with EMS stakeholders is further reinforced through participation in monthly multidisciplinary process improvement meetings and morbidity and mortality conferences, ensuring continuity and excellence across the care continuum. In addition, JHCC introduced a new initiative for whole blood transfusion in pediatric trauma patients, further enhancing the program's life-saving capabilities.

Pediatric Psychology

Pediatric Psychology meets the mental health needs of patients and their families after traumatic injuries. The team provides

clinical services in the inpatient and outpatient settings to assess psychopathology or more common coping and adjustment challenges following injury. A dedicated trauma psychologist has guided the trauma team's development of a protocol for mental health screening for admitted patients, and the psychologist consults for those with identified needs. With a member of the trauma team, the psychologist also staffs the ambulatory Pediatric After-Injury Resilience (PAIR) clinic, where patients return following discharge for reassessment related to their functioning and ability to return home, to school, or to their community. Clinical services provided during inpatient and outpatient sessions include psychoeducation on expected psychological responses to traumatic events, common trajectories of mental health symptoms, training on evidence-based strategies for coping with posttraumatic stress symptoms, and recommendations to caregivers for supporting child and family resilience. The trauma psychologist also collaborates with other pediatric trauma centers through the Psychology Special Interest Group of the Pediatric Trauma Society for establishing psychosocial PI metrics and best practices.

Hospital-based Violence Intervention Program (HVIP)

Johns Hopkins Children's Center is collaborating with the Johns Hopkins Adult Hospital-based Violence Intervention Program to expand its impact into pediatrics. This partnership adapts proven strategies from the adult program to address the unique needs of children and adolescents affected by violence. By combining expertise in pediatric care with the adult program's established framework, the initiative aims to provide comprehensive support for young patients and their families, including bedside intervention, community resource connection, and long-term follow-up. This collaboration represents a critical step in addressing youth violence as a public health issue and ensuring continuity of care across the lifespan.

Injury Prevention Programs and Initiatives

The Johns Hopkins Children's Center (JHCC) Pediatric Injury Prevention Program (PIPP) is a collaborative initiative that engages partners across the Children's Center and throughout Maryland. This year, the program strengthened its partnerships with Safe Kids Baltimore and Safe Kids Maryland, the Injury Free Coalition for Kids, the Childhood Injury Prevention Network, JHCC multidisciplinary burn and trauma teams, the Johns Hopkins Safe Sleep Group, the Health System Trauma and Injury Prevention Collaboratives, the Maryland TQIC Injury Prevention Committee, Maryland TraumaNet, and the Maryland Committee on Trauma.

A major milestone this year was the creation of JHCC-branded injury prevention educational materials designed to meet local health literacy needs, providing families with clear, evidence-based tips on preventing common injuries. Content was adapted from nationally recognized sources to ensure accuracy and best practices.

In addition, PIPP launched a community outreach process in collaboration with Pediatric Emergency Department nurses. This streamlined system incorporates an outreach request form addressing the "5 Ws," post-event evaluations, and a dashboard to track engagement. As a result, JHCC staff participated in 127 outreach events – double the previous year's total – including back-to-school nights, school wellness fairs, Stop the Bleed® trainings, community festivals, and presentations to local, regional, and national audiences. Recognizing the power of digital outreach, PIPP expanded its social media presence, reaching over 110,000 people with injury prevention education.

The program also initiated the Hopkins Injury Prevention Assessment Tool (HIPAT) research project to evaluate caregivers' knowledge of injury prevention practices. Caregivers complete a questionnaire and receive tailored education, helping the program assess the impact of bedside education.

Child Passenger Safety Technicians (CPSTs) provided 161 car seat fittings, assisted with on-site installations, participated in community seat checks, and hosted a JHCC Car Seat Check event. The program also distributed 100 hospital-donated car seats to eligible families, guided by a newly established Car Seat Eligibility Algorithm.

On National Injury Prevention Day, PIPP partnered with the Baltimore City Firefighters Foundation and Maryland Kids in Safety Seats to host a community car seat check. Local landmarks participated by "Shining a Green Light" to raise awareness of injury prevention and highlight the program's community impact.

Interdisciplinary Pediatric Trauma Bootcamp for Residents and Fellows

Designed to enhance pediatric trauma team performance, this hands-on course emphasizes evidence-based management, procedural skills, and effective team collaboration. Participants apply ATLS principles to high-yield pediatric trauma scenarios, including blunt trauma, penetrating trauma, traumatic brain injury, and burns, while performing essential procedures such as chest tube placement, pelvic binder application, tourniquet use, intraosseous access, and airway management, including difficult airway scenarios. The course also introduces the fundamentals of mass casualty management and strategies for coordinated team response. Learners include residents from Pediatrics, General Surgery, and Emergency Medicine, as well as fellows in Pediatric Intensive Care and Pediatric Surgery, fostering a collaborative, high-impact learning environment.

EMS and Nursing Continuing Education

JHCC offered prehospital clinicians and students monthly training, including lectures, case reviews, and simulations throughout the year. Maryland State Police paramedics trained alongside pediatric anesthesiologists in the operating room to maintain comprehensive pediatric airway management competency. Trauma staff provided ongoing education and case reviews to referring facilities. The Johns Hopkins Simulation Center, a fully accredited, state-of-the-art training facility incorporating standardized patients and teaching associates, human patient simulation, virtual reality, task trainers, and computerized simulation, helped clinicians with trauma education and preparedness. The Pediatric Base Station provided online medical direction to EMS clinicians with an active QI plan for evaluation and feedback. Every six months, JHCC provides pediatric content for refresher classes for Baltimore City paramedics, consisting of seven hours of continuing education. Physicians from

all subspecialty areas provided continuing education for Maryland prehospital clinicians at annual EMS conferences across the state. JHCC developed an online base station course specific for those caring for children of all ages (birth to 18/21). Facilitating this 90-minute online course and quiz offers flexibility for staff to complete the Pediatric Base Station Course, which is required by MIEMSS and the Maryland Board of Nursing. JHCC has an active contract with the University of Maryland Baltimore County, Baltimore City Community College, Howard County Fire and Rescue Services, and the Community College of Baltimore County's Paramedic program within the pediatric emergency department. Students participate in assessments and vital signs and attend traumas in an observational role. Additionally, through the pediatric emergency department, JHCC hosts military-based Center for the Sustainment of Trauma and Readiness Skills (C-STARS) personnel preparing for active deployment.

Fellowships and Residencies

Johns Hopkins Pediatric Surgery offers a prestigious two-year fellowship program accredited by the Accreditation Council for Graduate Medical Education (ACGME). Through a highly competitive selection process, one fellow is accepted each year, allowing both a junior and senior fellow to train side by side. Under the guidance of pediatric surgery attendings, fellows assume primary responsibility for the care of all trauma and burn patients at JHCC. The program also includes a three-month rotation at the University of Maryland Medical Center (UMMS), providing fellows with additional breadth and depth of clinical experience.

Research

Members of the JHCC Pediatric Trauma Program are involved in several innovative research projects spanning from clinical outcomes and injury prevention to basic science research. These include but are not limited to: a National Institutes of Health funded, multi-institutional, five-year study that tackles the critical issue of drug and alcohol abuse in the pediatric trauma population; a multidisciplinary study of the neuroinflammatory pathways involved in pediatric traumatic brain injury, extending standard trauma research from the bedside into the laboratory; examination of the adherence to a trauma checklist during our highest trauma activations; evaluation of the association of elevated white blood cell count and other clinically significant inflammatory markers in pediatric trauma patients; and a study of the risk factors for trauma recidivists, including firearm injuries and non-accidental trauma.

JHCC Pediatric Burn Center

The Johns Hopkins Children's Center (JHCC) is verified by the American Burn Association (ABA) and designated by MIEMSS as a Level I Pediatric Burn Center. JHCC was re-verified in FY 2025 and is scheduled for re-verification in early 2028. Between June 1, 2024, and May 31, 2025, the burn team treated 440 pediatric burn patients and provided care to over 500 children in the burn clinic, according to the Maryland State Trauma Registry. JHCC facilitated transport for more than 185 pediatric burn patients from hospitals statewide.

To expand clinical capacity, the program increased multidisciplinary clinic availability to twice weekly and added ad hoc wound-check appointments. The burn team also held monthly leadership meetings and quarterly multidisciplinary meetings with stakeholders to drive collaboration in patient care and research. Regionally, the program led multiple educational events for hospitals, EMS teams, firefighters, and community groups. In addition, JHCC further integrated with its adult burn program at Bayview through case discussions, involvement of burn fellows in pediatric care, and development of a new Burn Foundation with the Baltimore Fire Department.

Quality Management and Improvement

The Pediatric Burn Performance Improvement (PI) Committee is a multidisciplinary team focused on the overall programmatic PI. The PI team reviews performance metrics and data trends, and existing policies and assesses and implements new regulatory requirements and recommendations. The committee develops, tracks, and implements action plans stemming from morbidity and mortality review, and develops and tracks the implementation of additional action plans raised by data trends and committee members. It compiles burn statistics in monthly reports and compares current metrics with those of the previous months to evaluate trends. All emergency department visits for burn injuries are reviewed for quality, and all burn patient charts are audited until discharge. Established in 2016, the Pediatric Injury Quality Improvement Collaborative (PIQIC) initiative provides a forum where pediatric trauma and burn specialists form JHCC and four other pediatric burn centers network and share knowledge and best practices in treating pediatric burn patients. Each program contributes to a centrally administered database allowing for benchmarking, development of best practice guidelines, and collaborative research. Jurisdictional quality improvement (QI) officers review EMS feedback regarding the online medical direction provided by the Pediatric Base Station to EMS clinicians. Integration with EMS stakeholders and the pediatric burn team occurs in the monthly multi-disciplinary process improvement and morbidity and mortality conferences as partners in the healthcare continuum.

Pediatric Psychology

Pediatric psychology is a vital part of the Johns Hopkins Children's Center (JHCC) burn program, providing both inpatient and outpatient support to patients and their families. The psychology team conducts standardized screenings to assess quality of life, risk for psychopathology (e.g., anxiety, depression, posttraumatic stress), and overall child and parent distress. Interventions focus on teaching coping strategies during stressful experiences, supporting adherence to medical recommendations, and promoting recovery for both patients and families.

JHCC's dedicated burn psychologist also leads national collaboration through the Pediatric Injury Quality Improvement Consortium (PIQIC), helping to establish psychosocial performance improvement metrics and best practices. Notably, the psychology screening protocol developed at JHCC has now been adopted across multiple burn centers nationwide. These efforts, along with collaboration with other PIQIC psychologists, have resulted

in numerous conference presentations and poster sessions, further advancing the field of pediatric burn care.

Injury Prevention Programs and Initiatives

The Pediatric Injury Prevention Program (PIPP) at JHCC educates patients, families, staff, and the broader community on practical strategies to prevent injuries. This year, the program expanded outreach through seasonal safety media interviews, 127 community events – double last year's total – and social media content reaching over 110,000 people.

Key initiatives included creating health-literacy–friendly burn and fire safety resources, developing a statewide tabletop fire burner safety guide in partnership with MIEMSS, and launching a structured outreach process with the Pediatric Emergency Department to track and maximize impact.

PIPP also strengthened community connections through collaborations with the Baltimore City Firefighters Burn Foundation and the Johns Hopkins Bayview Burn Program, hosting a Burn Survivors Holiday Celebration and a brewery fundraiser, while providing digital toolkits to support burn prevention messaging across the region.

EMS and Nursing Continuing Education

The JHCC burn team provides burn education to referring hospitals, typically focused on evaluating and managing injuries. This year, it provided closed-loop feedback to referring to hospitals through case-review offerings and CME burn education. In addition, the JHCC burn team offered monthly training to prehospital clinicians and students, including lectures, case reviews, and simulation. Maryland State Police paramedics train alongside pediatric anesthesiologists in the operating room to maintain comprehensive pediatric airway management competency. The burn team participates in annual JHCC pediatric nursing forums and education/simulation sessions with the Johns Hopkins Pediatric Transport Team.

Fellowships and Residencies

Johns Hopkins Pediatric Surgery offers an Accreditation Council for Graduate Medical Education (ACGME)-approved two-year fellowship program. Through a highly competitive process, one fellow is selected each year, allowing for both a junior and senior fellow to train concurrently. Under the supervision of pediatric surgery attendings, fellows are responsible for the management of all trauma and burn patients at JHCC.

The program maintains strong collaboration with the Bayview Adult Burn Fellowship Program, which hosts up to three fellows annually. Adult burn fellows are now invited to join the pediatric team to gain experience in the unique aspects of pediatric burn care. Burn psychology is also integrated into training, with psychology fellows and attending physicians meeting with every inpatient burn patient and providing care in the outpatient burn clinic.

To further enhance pediatric trauma readiness, the Interdisciplinary Pediatric Trauma Bootcamp provides evidence-based trauma management training with a focus on ATLS principles adapted for children. The course emphasizes procedural skills, teamwork, and multidisciplinary collaboration during trauma activations. This year's participants included residents in Pediatrics, General Surgery, and Emergency Medicine, as well as fellows in Pediatric Intensive Care and Pediatric Surgery, reflecting the program's broad, team-based approach to training.

Research

The JHCC pediatric burn staff served as session panelists/content experts at several national meetings and published several manuscripts in peer-reviewed journals. Current research initiatives include evaluating child quality of life and parent PTSD and depression symptoms following pediatric burn injury; parent perceptions of the pediatric burn healing process and the need for support; drug and alcohol screening in teens; epidemiology of hot beverage scalds in children; attrition between emergency department care and outpatient clinic visits; and follow-up compliance of burn patients during the COVID-19 pandemic.

Rehabilitation

JHCC's state-of-the-art pediatric rehabilitation program provides both inpatient rehabilitation and comprehensive outpatient services. For burn patients requiring ongoing inpatient care, the hospital collaborates with Mount Washington Pediatric Hospital (MWPH), which holds accreditation from the Joint Commission and the Commission on Accreditation of Rehabilitation Facilities for its Comprehensive Integrated Inpatient Rehabilitation Program, including a Pediatric Specialty Program. The program has also expanded to see patients directly in the pediatric emergency room for physical and occupational therapy prior to discharge. Additionally, JHCC's pediatric rehabilitation team works closely with providers across the state to ensure continuity of care for patients who cannot easily travel to the hospital after discharge.

Pediatric Trauma and Burn Centers: Children's National Hospital

111 Michigan Avenue, NW, Washington, DC

CNH Pediatric Trauma Center

Children's National Hospital (CNH), ranked among the Top 5 Children's Hospitals in the United States by *U.S. News & World Report*, is designated by MIEMSS as both a Pediatric Trauma Center and a Pediatric Burn Center. Serving Washington, DC, surrounding Maryland counties, and parts of Southern Maryland, CNH's pediatric trauma services are delivered by the Division of Trauma and Burn Surgery. In the past year, CNH cared for 1,361 trauma-injured children, 66% of whom were Maryland residents. Of these patients, 502 were treated in the Trauma Code Room and 586 required hospital admission.

Quality Management and Improvement

In October 2024, CNH underwent an American College of Surgeons (ACS) review, reaffirming their commitment to delivering the highest level of quality trauma care. The CNH Pediatric Trauma Center's quality improvement program includes regular participation in the Pediatric Trauma Quality Improvement Program (TQIP), supporting the ACS Committee on Trauma's mission to enhance patient outcomes nationwide. TQIP provides risk-adjust-

ed benchmarking for pediatric trauma centers, enabling us to track outcomes, evaluate performance, and implement evidence-based improvements in patient care.

This year, CNH further advanced its ability to provide rapid transfusions and fluid resuscitation to their smallest patients by integrating LifeFlow® manual rapid infusion devices into its trauma code rooms. These devices significantly reduce the time required to deliver blood products and critical fluid volumes, serving as an essential complement to the trauma team's Belmont Rapid Infusers.

Injury Prevention Programs and Initiatives

This year, CNH observed a slight decrease in penetrating injuries, from 7% in FY 2024 to 6.5%. CNH staff actively supported multiple Stop the Bleed® and firearm safety campaigns across the District of Columbia. Since its launch in FY 2023, the hospital's Violence Intervention Team has played an integral role in caring for patients with penetrating injuries. This team works to interrupt cycles of violence by building relationships with individuals at high risk for violent behavior and connecting them with services and resources that address the root causes of violence.

Falls remain the leading cause of injury, accounting for approximately 45% of CNH's trauma volume. To address this, the Injury Prevention team conducted several fall safety campaigns via social media, reaching thousands of District residents throughout the fiscal year.

EMS and Nursing Continuing Education

CNH provides both internal and external trauma continuing education opportunities for its staff and community members. All CNH nurses who care for trauma and burn patients are required to complete eight hours of dedicated trauma education annually. These hours may be fulfilled through formal certification courses, lecture sessions, CNH-produced podcasts, and other educational offerings. This year, CNH nursing staff achieved 100% compliance with this requirement, demonstrating their strong commitment to excellence in trauma care.

CNH trauma leadership and quality team members also contributed to the broader professional community by delivering continuing education presentations at multiple Emergency Nurses Association (ENA) and Emergency Medical Services for Children (EMSC)-sponsored events.

Research

CNH is an active participant in the MATIC2 Trial, a robust clinical study evaluating the effects of whole blood therapy compared to standard blood component therapy. The trial also examines the use of tranexamic acid in pediatric patients for the treatment of acute hemorrhage, with a focus on assessing its impact on outcomes and overall efficacy.

CNH Pediatric Burn Center

CNH Pediatric Burn Center serves Washington, DC; multiple counties in Maryland, including Montgomery and Prince George's; Southern Maryland; and select regions of neighboring states. In the past year, CNH treated 928 burn-injured children, 366 of whom reside in Maryland. Of these patients, 86 required hospital admission and 520 were evaluated in the emergency department. In addition, there were 1,638 burn clinic visits.
Pediatric burn services are provided by the Division of Trauma and Burn Surgery. Based on feedback from our Patient and Family Advisory Committee, the Burn Center has expanded its telemedicine program, which now accounts for approximately 20% of our total volume, from one to three days per week. Plans are underway to further expand telemedicine availability to five days per week and to introduce same-day appointments.

We also continue to provide long-term follow-up care at our offsite Friendship Heights location.

Quality Management and Improvement

The Pediatric Burn Center's quality improvement program conducts comprehensive primary reviews of all burn patients treated in the Emergency Department, as well as outpatient clinic patients on an as-needed basis. This year, more than 600 patients underwent primary review, with cases escalated to secondary and tertiary review as appropriate.

This year, CNH trauma burn advanced practice providers (APPs) led quality improvement initiatives aimed at enhancing the quality of burn surgery consultations and the burn care delivered by trainees. Additionally, data collection is underway for a multidisciplinary improvement project focused on maintaining nutrition during sedated dressing changes and operative procedures.

CNH is also a founding member of the Pediatric Injury Quality Improvement Consortium, one of five charter institutions benchmarking performance metrics across pediatric burn centers nationwide.

Injury Prevention Programs and Initiatives

Burn prevention remains a top priority for Children's National Hospital (CNH). This year, CNH launched a burn prevention social media campaign featuring a video series produced with funding from the District of Columbia Firefighters Association. This initiative targeted high-incidence areas within our catchment area, raising community awareness and promoting burn safety.

CNH also integrates burn education into clinical training through orientation sessions for each rotating surgical resident and through BurnCasts – podcast episodes designed for both nursing and provider audiences. Throughout the year, the burn team delivers lectures and workshops for pediatric hospitalists, nurses, and PICU providers, as well as targeted sessions for referring hospitals and providers upon request.

In addition, CNH faculty participate in teaching Advanced Burn Life Support (ABLS) courses, furthering the knowledge and skills of healthcare professionals across the region.

EMS and Nursing Continuing Education

This year, CNH offered over 50 hours in virtual and in-person continuing education. Virtual burn education is offered through the Trauma and Burn YouTube channel. The site, which contains both recorded didactic education as well as a "BurnCast" (burn podcast) is accessible to internal staff as well as external audiences. To date, CNH has produced over 20 BurnCasts covering

various burn care-related topics of interest to those caring for burn patients, including the mental health needs of a family post-burn injury, school re-entry, and OR interventions of the burn wound. In addition, virtual education has enabled CNH to expand its outreach and educational opportunities. Children's Burn Service, in partnership with the Children's Emergency Department, has developed monthly education for multiple EMS departments in Maryland, featuring content tailored to the specific needs of the EMS agency and patient situations encountered.

Research

The Burn Center maintains an active research program with multi-year studies in place. Through funds received from the National Institutes of Health and the Agency for Healthcare Research and Quality, the Burn Center continues to research automatic workflow capture and analysis using real-time, data-driven feedback to improve trauma resuscitation outcomes and trauma patient safety. Funded by the Lambert Foundation Award, the burn service examined methods to screen for young child hyperactivity and impulsivity with unintentional burn injuries and developed an intervention for parents to improve distress and child behavior after injury. Multiple presentations at the American Burn Association national meeting highlighted this work. Additionally, the burn team has published peer review articles on parent resiliency and parent traumatic stress after a burn injury.

Specialty Centers

Adult & Pediatric Eye Trauma Center: The Johns Hopkins Wilmer Eye Institute

1800 Orleans Street, Baltimore, Maryland
MIEMSS Region III

Based at The Johns Hopkins Hospital (JHH) in East Baltimore, Wilmer Eye Institute's Eye Trauma Center (ETC) is uniquely designated for and specialized in the diagnosis, treatment, and long-term management of ocular trauma. Founded in 1925 (and thus delighted to be celebrating our centennial, this year), Wilmer is among the largest and top-ranked academic departments of ophthalmology in the United States.

The Wilmer ETC gathers the finest scientific evidence to promote improved ophthalmic care and the reduction of visual disability in a collaborative environment that combines compassionate patient care, innovative research, and the training of future leaders in ophthalmology and visual sciences. Its faculty, staff, and trainees collaborate with JHH adult and pediatric emergency departments and care teams across the enterprise to meet the comprehensive care needs of patient populations both within and outside of Maryland. Dedicated eye treatment rooms, operating rooms, diagnostic and procedural equipment and supplies, Pharmacy, Radiology, and Pathology support services; and on-call coverage in every subspecialty ensure that patients are treated at the highest standard of care, 24 hours per day.

The Wilmer team is composed of 170+ full-time faculty members and more than 600 staff members working across nine locations in Maryland, and a new, tenth site in Arlington, Virginia. In FY 2025, the Wilmer clinical practice supported 285,237 patient visits and 15,216 eye surgeries.

Patient populations include neonates, pediatrics, adolescents, adults, and geriatrics. Core clinical areas of expertise include comprehensive eye care (medical, optometric, and optical services), cornea, glaucoma, laser vision correction, vision rehabilitation, neuro-ophthalmology, ocular immunology, ocular oncology, oculoplastics, pediatric ophthalmology and adult strabismus, retina; and traumatic eye injury. Consistent with prior years, patients from all across the State of Maryland and beyond (including Pennsylvania, Virginia, West Virginia, the District of Columbia, Delaware, New Jersey, New York, and North Carolina) presented to the Wilmer ETC. Baltimore City and Baltimore County together accounted for about 60% of within-Maryland origin, with Anne Arundel, Montgomery, Harford, Carroll, Frederick, Howard, Prince George's, and Washington Counties rounding out top-10 ETC referral regions.

The Wilmer ETC's patient base remains demographically diverse and encompassing of all age groups, with higher relative burden of eye trauma observed for racial and ethnic minority groups. Male-identifying patients sustained a disproportionate share of eye injuries, nearly double that of female-identifying patients, with higher prevalence among youth and young adults. Consistent with prior years, injury intentionality was split among accidents and assaults (predominantly blunt traumas) and spanned all etiology-of-injury categories.

The Wilmer ETC sustains close partnerships with other care teams, most frequently Johns Hopkins Emergency Medicine (JHH Adult & Pediatric Emergency Departments, EDs), Anesthesiology & Critical Care Medicine (ACCM), and Nursing. Wilmer's Patient Access Center for the Eye (PACE) clinic at JHH has continued to operate a successful, same-day and same-week appointment access program dedicated to Ophthalmology patients presenting to the ED with non-acute eye issues, which has promoted timely and more value-based care for this ED-presenting population. Iterative improvements to triage and consult protocols among Wilmer and ED teams has also contributed to meaningful reductions in lead time for ED initiation of Ophthalmology consults upon patient arrival, which in turn has had positive effects on total length of stay and patient/family experience. In addition to an in-house physician 24/7, Wilmer also has ophthalmology-trained physician assistants assisting in the care of patients on all weekdays during business hours. Our ophthalmology residency program also received approval for expansion to six, maximal trainee slots per program year, which will help sustain perpetual, on-demand consult coverage.

Quality Management and Improvement

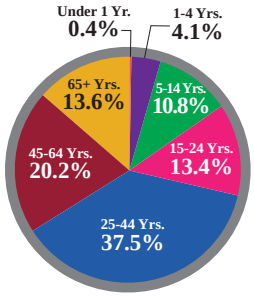
Wilmer ETC core staff participated in ongoing surveillance of quality and performance metrics, escalation of and loop closure on prior trauma cases warranting special review, analysis of demographic and injury trends, assessment of operations and infrastructure needs, and generation of new ideas for trauma education, research, and outreach. They also participate with and report up through the Quality Improvement Committee of the Wilmer Eye Institute, which convenes on a quarterly basis, and is directly

Wilmer Eye Institute at The Johns Hopkins Hospital Demographics

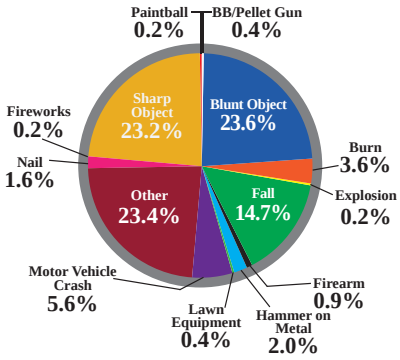
(June 2024 to May 2025), n=462

Source: Maryland Eye Trauma Registry

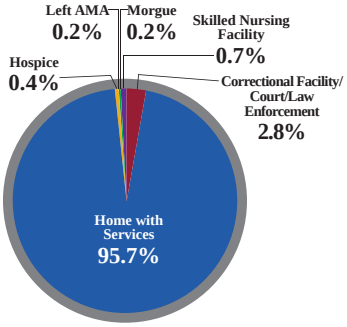
Age



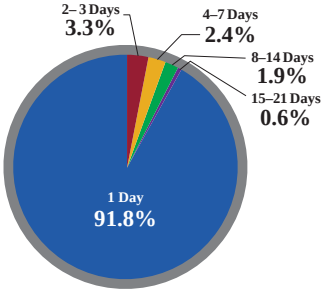
Injury Type



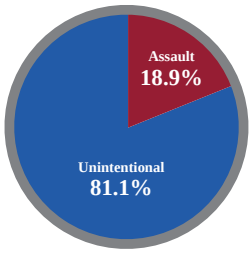
Final Disposition



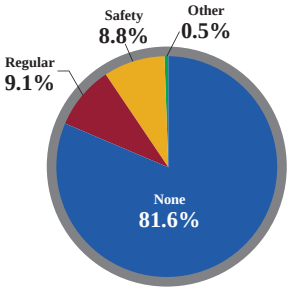
Length of Stay



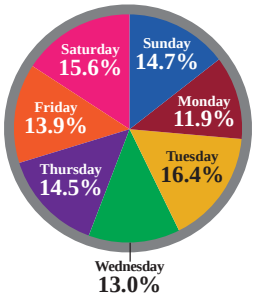
Intentionality



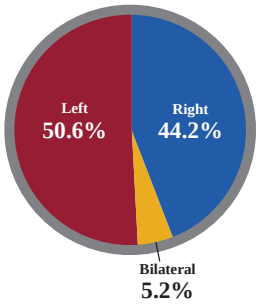
Eye Protection



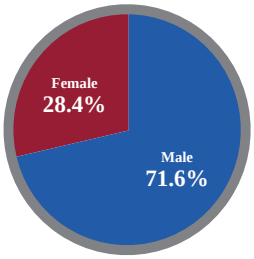
Day of Week



Eye Injured



Gender



aligned with the overall quality and safety structure and institutional initiatives at JHH. The ETC team meets quarterly with JHH ED leaders for detailed review of any issues related to clinical coordination and co-management of patients. The candid discussions that occur in this forum have directly contributed to improvements in handoff communication, workflows, access, quality of care, and value of care. The ETC has moved to a model of monthly data extraction and surveillance of Johns Hopkins Epic EHR-derived key performance indicators for Adult and Pediatric Emergency Department patients presenting with eye issues, including subsets of patients flagged positively for ocular trauma at time of specialty consult response. Wilmer staff, with oversight from the RN Program Manager, complete requisite patient data entry into the Eye Trauma Web Registry.

Injury Prevention Programs and Initiatives

The Wilmer ETC works with medical students, ophthalmology residents, public health experts, and other collaborators to analyze data and consider interventions for groups observed to have higher incidence of ocular trauma. ETC leaders continue to partner with Wilmer's Marketing and Communications team to produce social media messaging in line with American Academy of Ophthalmology eye health monthly observances, including workplace eye wellness, sports eye safety, and eye injury risks to children from toys that are frequently gifted during holiday months. Before each Fourth of July holiday, the Wilmer ETC partners with the Children's Safety Center of the Johns Hopkins Center for Injury Research and Policy to launch an article on firework safety on the Johns Hopkins website. Fasika Woreta, MD, MPH, Wilmer ETC

Director, Wilmer Vice Chair of Education, and Eugene de Juan, MD Professor of Ophthalmic Education, continues to serve on the Board of Directors for the American Society of Ocular Trauma (successively to prior executive roles). This national consortium of program leaders organizes trauma-focused CE programs as part of broader American Academy of Ophthalmology meetings, sets and updates professional practice priorities and standards of care for eye trauma management, and participates in active, cross-institutional research and publication.

Continuing Education

Each year, the Wilmer ETC provides education on eye trauma identification and management to multidisciplinary care teams throughout the Johns Hopkins Hospital & Health System enterprise; any entities that might serve as points of entry and first response for ocular trauma patients. Nurse educators deliver eye trauma programs across JHH units to assure meeting of biannual education requirements, through learning modules that include article reviews, lectures and conferences, online continuing education, and new staff orientations. In June 2025, Wilmer held its 41st Annual Nursing and Ophthalmic Technician Conference, commemorating 100 years of scientific progress in the field, and focusing heavily on clinical and surgical treatment of ophthalmic urgencies, including trauma. ETC Nursing also continues to co-participate in JHH and Johns Hopkins Health System-wide injury prevention education events, such as Fall Risk Awareness fairs. In addition to regular lectures on eye trauma at local, regional, national, and international forums, Wilmer ETC staff held its annual corneal suturing course around performing open-globe injury repairs for our residents. Our department also sends one resident a year to the Walter Reed National Military Center Ophthalmic Trauma Course.

Fellowships and Residencies

The Wilmer ETC supports a four-year ophthalmology residency program with recent integration of a medicine internship year. Wilmer residents, alongside assistant chiefs of service, faculty attendings, and staff are highly active participants in the assessment and management of ETC patients in the EDs, on inpatient floors, across clinics, and in the operating room. Wilmer has also launched an optometry residency program in recent years, which is anticipated to expand further.

Rehabilitative Services

The Wilmer ETC offers its patients direct, in-house access to a full complement of clinical services and resources necessary for visual recovery or functional accommodation, in the case of irreversible injury. Wilmer's Low Vision & Vision Rehabilitation Division matches patients with assistive technologies that can enable their independence and participation in activities of daily living, and even offers some functional, in-home support services through occupational therapist experts on its staff. Wilmer's Oculoplastics Division offers functional and cosmetic surgical services to limit the after-effects of traumatic eye injuries. ETC patients also have access to an ocularist, an expert who is highly skilled in the creation and fitting of ocular prosthetics.

Research

The Wilmer ETC faculty is composed primarily of clinician-scientists – prolific researchers, authors, and educators in addition to expert clinicians. In FY 2025, trauma-related publications covered the full spectrum of topics, including broad-scale clinical and demographic trending around common-cause ophthalmic injuries throughout the U.S., comparative clinical effectiveness reviews and metanalyses, novel biomedical and tissue engineering innovations, best-practice definitions around surgical sequela to primary eye injury presentations, effective prophylaxis with antibiotic administration, and public policy opportunities for reduction of healthcare disparities.

Hand/Upper Extremity Trauma Center: Curtis National Hand Center at Union Memorial Hospital (MedStar)

201 East University Parkway, Baltimore, Maryland 21218
MIEMSS Region III

As Maryland's referral center for the specialized care of injuries to the hand, wrist, forearm, and elbow, the Curtis National Hand Center (CNHC) at MedStar Union Memorial Hospital (MUMH), located in Baltimore City, is committed to handling acute injuries and providing reconstructive surgery for Maryland's trauma victims. Its focus on complex hand, wrist, and elbow injuries has been part of the well-developed Maryland trauma care system since Dr. Raymond M. Curtis, the Center's founder, collaborated with Dr. R Adams Cowley and others during the inception of the Shock Trauma Center and the Maryland EMS system.

In FY 2025, CNHC's emergency department cared for 2,166 patients with acute hand injuries, 26% of whom were transported by public safety, ambulance, or medevac helicopter. The unique nature of CNHC's services also draws acutely injured patients from a broad geographic region, including Pennsylvania, Delaware, Virginia, West Virginia, and Washington, DC. Whether in Baltimore City or as far as these neighboring states, the onsite heliport facilitates reduced travel times and continues to improve the speed of intervention for the most critically injured.

CNHC's expertise in management of challenging bone and soft tissue trauma is supplemented by advanced skills in microsurgery. CNHC's continued focus on the management of fractures, complex soft-tissue coverage problems, and amputations requiring replantation has supported our status as a regional replantation center and a member of the American Society for Surgery of the Hand/American College of Surgeons' Hand Trauma Center Network.

The acute trauma unit, staffed by specialists in orthopedic and plastic surgery with subspecialty training in hand and upper extremity surgery, is available for the care of the trauma patient 24/7/365. Calls for transfer from the field are received immediately and accepted by the emergency physicians. Transfer requests from other emergency rooms for the treatment of hand trauma patients are received via the dedicated hand transfer line. This year, the transfer center received 770 calls for transfer. Call logs of these transfer requests demonstrate an acceptance rate of greater than 97% of these patients to CNHC. The remaining cases (less than 3%) are determined to not require transfer emergently

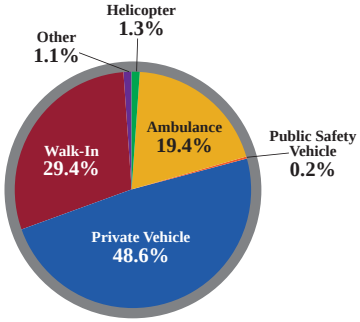
The Curtis National Hand Center at MedStar Union Memorial Hospital

(July 2024 to June 2025)

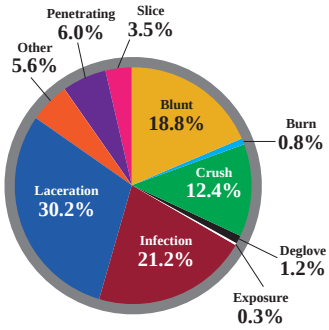
Source: The Curtis National Hand Center

n = 2,166

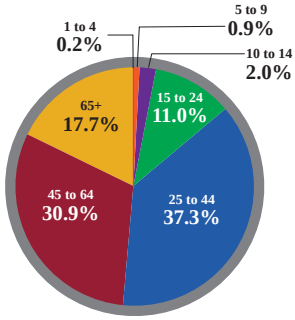
Transport Mode



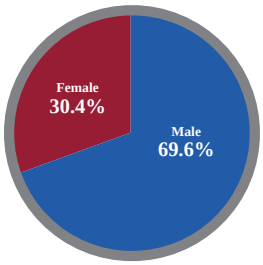
Injury Type



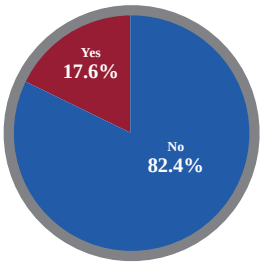
Age



Gender



Work-Related



and are provided outpatient follow-up at CNHC or are referred for other specialty care due to associated injuries (e.g., burns, ophthalmologic injury, spine injury).

Professional Education

CNHC continued to grow its academic offerings this year, reflecting greater collaboration with affiliated institutions and increased participation by colleagues and alumni around the region and country. The robust didactic program at CNHC includes lectures, dissections, and daily interactive conferences. Specialty labs held 15-20 times/year encompass half-day lab demonstrations and surgical simulation practice sessions. The monthly journal club symposium reviews the most up-to-date literature on a schedule of pertinent clinical topics, and includes all fellows, faculty, and other hand surgeons from around the area to ensure a robust and meaningful discussion and broader learning.

The Curtis National Hand Center has been designated as the annual host institution for the American Society for Reconstructive Microsurgery's internationally-attended Functional Extremity Reconstruction Congress. Starting in 2023, the 3rd annual meeting was held in Medstar Union Memorial Hospital's Curtis National Hand Center in March 2025. CNHC's international faculty bring together teachers and students from around the world inside the doors of the Hand Center to exchange ideas and techniques on management of upper extremity trauma reconstruction.

This year, CNHC continued its strong tradition of a Regional Hand Surgery Symposium, and its visiting lecture series has expanded to include impactful speakers who challenge faculty and staff with new ideas related to innovations in arthroscopy, congenital surgery, osteocartilaginous arthroplasty, microsurgery, allotransplantation, brachial plexus surgery, and forearm and elbow pathology. Speakers are invited from across the country and around the world. In March 2025, Washington, DC, hosted the International Federation of Societies for Surgery of the Hand, the largest meeting of hand surgeons in the world. As part of that meeting, CNHC was selected to host numerous international traveling scholars and clinical leaders in hand surgery. Additionally, many international visitors came to CNHC to speak, collaborate, and learn together with our team. Our hand center remains a global leader in hand surgery care and we continue our long-standing traditions of national and international collaboration and leadership.

Although this year's teaching and educational sessions featured both on-site and in-person programming, CNHC has maintained the remote learning option for many events to allow broader participation and inclusion of any providers unable to attend (whether related to pandemic/quarantine or not). MedStar provides enterprise-

level secure video conferencing accounts that continue to support CNHC's educational conferences and visiting speaker events.

Quality Management and Improvement

CNHC maintains a formal performance improvement process for timely problem identification, data-driven analysis, and resolution of issues within the quality framework of MedStar Union Memorial Hospital. This year, it reviewed challenging and readmitted cases for evaluation and outcomes at its monthly morbidity and mortality conference. CNHC maintains efficient electronic data capture and data entry into the Maryland Trauma Registry, providing thorough, high-quality reporting. With expanded data and analytic capabilities, the Hand Center has launched quality improvement initiatives aimed at improving triage and transfer, evaluating processes of care delivery and how to optimize them across all services, improving data collection and data systems, and providing unique approaches to reduce patient burden after trauma.

We have added enhanced ultrasound capabilities that allow our providers to evaluate nerve and tendon injuries acutely without the need for additional costly imaging, care delays waiting for outside imaging or studies, and other numerous barriers to care that exist at many other centers. By streamlining how we evaluate our patients we have improved the quality and timeliness of care delivery.

Injury Prevention Programs and Initiatives

This year, the Hand Center initiated community and hospital visitor outreach via social media and hospital digital wall screens that provided injury prevention and safety information about falls, bone health, lawnmowers, fireworks, and snow blowers. Each year, CNHC likewise participates in a statewide injury prevention initiative. In line with many other large upper extremity trauma centers, CNHC has initiated a focused clinic for patients that have suffered an upper extremity amputation. This clinic allows for coordination of care across hand surgery, orthotics/ prosthetics, therapy, and social work/social services during a single clinic visit, providing efficient and high-value care for amputees. In FY 2024, we expanded our specialty offerings to include an increased focus on peripheral nerve injuries and spasticity problems in the upper extremity, and this fiscal year has seen a substantial increase in patients with these major injuries and resultant limb challenges. With new providers that have special training and clinical focus on these areas, CNHC has expanded access to these unique services for some of our most challenging trauma and upper extremity pathology patients.

This year, MedStar Union Memorial Hospital's (MUMH) hand surgery-led bone health program continued to grow, seeing a 50% increase in patient volume up to nearly 500 patients. This program facilitates streamlined evaluation and management of patients with fragility fractures or bone health challenges that might affect recovery from other traumatic injuries. This partnership between hand/orthopedics, endocrinology, geriatrics, physical therapy/occupational therapy, the MedStar primary care network, and MUMH has made a substantial impact on timeliness, capture, and management of bone health, especially in more senior trauma patients.

Prehospital/EMS/Nursing Continuing Education

The MUMH Continuing Medical Education Committee oversees the continuing medical education (CME) program at the Curtis National Hand Center. Routine CME events are provided for the attending hand surgeons, fellows and residents, hand therapists, mid-level practitioners, nursing, and ED staff. Hand trauma labs are scheduled on a regular basis, giving staff the opportunity to learn, practice, and update their skills. Specialty labs for ED management of hand trauma are available for emergency department staff and first call providers. Advanced surgical labs are conducted for surgical staff, hand fellows, and residents. Hand surgeons provide lectures for OR staff on specialty topics as part of the OR weekly educational series, while visiting speaker events are open to all staff across the system.

Fellowships and Residencies

As one of the nation's premier training centers for hand surgery, CNHC's fellowship training program is highly sought after by the best plastic surgery and orthopedic surgery trainees in the world and prepares all graduates for management of complex upper extremity problems. CNHC offers two fellowship programs – one civilian, the other military – for advanced training in hand surgery. Additionally, CNHC provides dedicated hand surgery training rotations for residents in the Johns Hopkins Plastic Surgery, Georgetown Plastic Surgery, and MedStar Orthopedic Surgery training programs, among others.

Research

CNHC's investigative efforts have grown exponentially in the past few years. Funded by internal and external sources, research projects look at a wide range of issues, including microsurgery, peripheral nerve surgery and augmenting nerve recovery, bone and soft-tissue problems, evaluation and triage for traumatic injuries, neuroma management, chronic pain management, and reconstruction after trauma. This year, CNHC continued to expand its footprint in health services research and big data analytics through an expansive data collection initiative, participating in multiple clinical trials, and coordinating numerous research efforts evaluating policy and care quality issues around hand and upper extremity trauma. We have begun a series of study collaborations with our emergency department to improve triage and post-injury follow-up for our patients most in need of additional support.

Rehabilitation

The rehabilitation team at CNHC and across the MedStar rehabilitation network works closely with CNHC hand surgeons to establish a treatment plan for each patient. CNHC's complete suite of rehabilitation services includes management of acute or chronic pain; protective splinting for immobilization and controlled motion, postoperatively or post-injury; exercise programs to restore motion, strength, and fine and gross motor coordination; home exercise programs; sensory re-education programs after nerve injury; thermal and electrical modalities to minimize pain and swelling, and more. With a wide network of subspecialized Certified Hand Therapists (CHTs) located in satellites throughout the state of Maryland, the therapy team facilitates supervised and independent therapy sessions for CNHC patients based on their

specific surgical, rehabilitative, geographic, occupational, and socioeconomic requirements and restraints. In addition, CNHC offers in-person as well as teletherapy visits for its patients.

Pain Psychology Services

Considering the impact of the opioid epidemic, especially on musculoskeletal surgery and musculoskeletal trauma, CNHC has initiated multiple programs aimed at improving pain management while reducing reliance on opioids. Part of this initiative includes working with MedStar National Rehabilitation Hospital to provide pain psychology and cognitive behavioral therapy services to many of our hand trauma patients.

Neurotrauma Center: R Adams Cowley Shock Trauma Center (UM)

22 S. Greene Street, Baltimore, Maryland
MIEMSS Region III

Located at the R Adams Cowley Shock Trauma Center (RACSTC), in the University of Maryland Medical Center, the Neurotrauma Center (NTC) provides comprehensive management for patients with injuries to the brain, spinal cord, and spinal column. From June 1, 2024, through May 31, 2025, the NTC provided care to 2,047 patients with traumatic brain injuries, 461 patients with spinal column or spinal cord injuries, and 472 patients who suffered from both traumatic brain and spinal column or spinal cord injuries, according to the Maryland State Trauma Registry. The NTC's dedicated, highly trained, and experienced multidisciplinary clinical staff includes physicians, nurses, therapy services, case management, pain management, nutritional services, integrative medicine, social work and pastoral care staff, a designated patient advocate, and a substance abuse program.

NTC patients with severe brain injury receive a multisystem assessment with intracranial pressure parameters closely monitored so factors that may cause secondary brain injury are rapidly recognized and treated, optimizing patient outcomes. Neurosurgeons are readily available to intervene, if necessary, and perform craniotomies for hematoma evacuation, gunshot wound debridement, elevation of depressed skull fractures, decompressive craniectomies, and cranioplasties. Patients with spinal cord injuries, often with cervical spine injuries, are treated using sophisticated respiratory care protocols leading to successful weaning from mechanical ventilation for most patients.

The 12-bed Neurotrauma Critical Care Unit (NTCC) provides interdisciplinary care to critically ill patients who have sustained primarily central nervous system injury and may have other associated injuries or organ dysfunction. The NTCC operates with all required resources for critical care with the addition of specialized fiber optic, intraparenchymal and/or intraventricular intracranial pressure monitoring, cerebral oxygen monitoring and continuous electroencephalogram monitoring.

The 24-bed Neurotrauma Intermediate Care Unit (NTIMC) provides interdisciplinary care to ill patients who have sustained primarily central nervous system injury and may have other associated injuries or resolving organ dysfunction. These patients still require frequent monitoring or intensive nursing care.

In FY 2025, the NTC reinvigorated the diaphragmatic pacer program for patients with stable, high cervical spinal cord injury who lack diaphragm control. With implanted electrodes in the diaphragm, an external pulse generator delivers stimulus pulses to generate a breath. This enables the patient to breathe without assistance from mechanical ventilation for at least 4 hours a day. A protocol for the use of the Diaphragmatic pacer was updated, staff education has been completed with all NTC staff, and patient and family educational tools have been developed.

Nurses in NTCC engaged in ongoing outreach and support of our brain injured patients, by developing and maintaining active involvement and leadership in the Brain Injury Association of Maryland (BIAMD), an independent affiliate of the Brain Injury Association of America. This year, two NTCC nurses held Vice President and Secretary roles on the BIAMD Executive Board of Directors. Numerous other NTCC staff served as volunteers for outreach events, educational offerings, and fundraising events offered by the organization.

Severe brain injuries sustained by numerous patients that were admitted to the NTC, put staff in a unique position to recognize potential organ donors, make appropriate referrals to the Infinite Legacy Foundation (IL) organ procurement agency, and provide specialized care for donor patients that optimizes organ function. This year, NTCC had a 99% referral rate and no missed organ referrals with potential. NTCC performed above IL and the Donor Service Area (DSA) in overall authorization rate (51% vs goal 48%, DSA 45%), donation after cardiac death (42% vs goal 35% and DSA 38%), and organ referral timeliness (94% vs goal 90%, DSA 82%).

Quality Improvement/Evidence-Based Practice

In FY 2025, NTC quality initiatives continued to focus on reducing hospital-acquired infections (HAIs), by targeting factors identified in root cause analyses done routinely on all HAIs and from feedback obtained in regular audits done by staff and Infection Prevention. An Infection Champion Nurse continues to work in the NTC to ensure HAI prevention best practices are in place. Both NTCC and NTIMC have unit-based committees that aim to ensure staff adherence to HAI prevention best practices by providing peer reminders and coaching. Hospital-acquired infection prevention emphasis was on optimizing use of midline catheters rather than central lines, avoiding use of femoral central line insertion when possible, preforming daily chlorhexidine treatments, staff re-education and regular monitoring of adherence to hospital acquired infection prevention interventions, increasing use of silver impregnated indwelling bladder catheters, moving from sending urine analysis (UA) with culture to UA with micro unless the patient is hemodynamically unstable, and further shortening the timing for bladder catheter change prior to drawing a urine culture. The urinary catheter and central line usage standardized utilization ratio has remained consistently below 1.0 for NTCC and NTIMC throughout FY 2025.

A common factor in reported falls in NTCC and NTIMC was noted to be dysfunction of the bed or chair alarm system in the presence of patient impulsiveness, confusion, and agitation. In response, an environmental rounding tool was developed and implemented by

NTCC and NTIMC staff and unit leaders that assessed function of the bed alarms. A process to ensure timely replacement of any missing bed alarm cables was also created. Following implementation of these initiatives there have only been two falls in NTCC in all of FY 2025. Falls also decreased in NTIMC by 30% from the previous fiscal year.

Prevention of hospital-acquired pressure injuries (HAPI) remained an area of focus for the NTC's quality initiatives this year. Emphasis was on implementing a bundle of evidence based HAPI prevention interventions, including use of a sacral HAPI prevention dressing, implementation of a two-nurse skin assessment of a patient admitted or transferred to the unit, turning and repositioning the patient ensuring offloading of sacral pressure, ensuring appropriate heel pressure relief, minimizing risk of pressure beneath removable devices, and use of the correct bed surface. Frontline nurse skin champions conducted regular skin rounds and educated peers on evidence based HAPI prevention strategies. With implementation of these initiatives NTCC appreciated no HAPIs in the last quarter of FY 2025, and NTIMC had only one HAPI during the last four months of the fiscal year.

One of the challenges faced during onboarding graduate registered nurses (GNs) has been providing them with both the foundational components of bedside nursing and the advanced, neuro-specific clinical judgment required on the NTIMC unit. In collaboration with members of the RACSTC Simulation Center, NTIMC nurses developed three neurotrauma-specific simulations for Nurses new to NTIMC. To evaluate the impact of the simulations, the ten GNs completed the Simulation Effectiveness Tool-Modified (SET-M). The SET-M survey demonstrated that the GNs evaluated the pre-briefing and debriefing sessions positively. The survey data also highlighted the effectiveness of simulations in boosting confidence and facilitating learning. For instance, 100% of GNs (n=9) strongly agreed that the pre-briefing was beneficial to their learning and that the debriefing was a constructive evaluation of the simulation and contributed to their learning. Confidence in providing interventions that foster patient safety scored the highest with 100% (n=9) strongly agreeing.

Injury Prevention Programs and Initiatives

The Center for Injury Prevention and Policy (CIPP) aims to reduce preventable injuries and violence, and their consequences throughout Maryland. As part of its mission to prevent trauma and keep Marylanders safe, CIPP offers injury prevention programs for individuals of all ages, both on-site at Shock Trauma and throughout the state. These programs are designed to enhance participants' understanding of trauma care and to empower safe, informed decision-making, with the goal of promoting long-term behavioral change. Several injury-prevention programs operate within CIPP. Dr Gary Schwartzbauer, the NTC medical director, and Cara Lomangino RN, MS, CRNP, Senior Trauma Neurosurgery Nurse Practitioner, are the founding directors of the Maryland Shock Trauma Chapter of ThinkFirst®, a national injury prevention foundation whose mission is to prevent brain, spinal cord and other traumatic injuries through education, research and advocacy. This year, they participated in multiple ThinkFirst® community prevention programs alongside staff from the NTC. In addition, they have presented at the ThinkFirst® Trauma Prevention Foundation National Conference, provided Brain and Behavior lectures to medical students, and testified in opposition to HB639 which proposed repealing the state law for mandatory helmet use for motorcyclists.

This year, CIPP reached 500 teen/adolescent participants with head injury prevention programs (17 programs), 504 older adult participants with fall prevention programs (30 programs), and 3,160 teen/adolescent participants with programs about trauma prevention, motor vehicle safety, and teen risk reduction (56 programs). These sessions were often accompanied by a trauma survivor guest speaker whose life has been affected by brain or spinal cord injury, which helped to engage participants on a deeper emotional level. In addition, CIPP also participated in roughly 50 other community events, including festivals, health fairs, and advocacy events to raise awareness about important injury prevention topics. The Shock Trauma Neurosurgery team members continue to be active members of the Brain Injury Association of Maryland (BIAMD).

Emergency Medical Services and Nursing Continuing Education

In FY 2025, the NTC continued its commitment to providing education to our EMS colleagues. The STC EMS Liaison team continue to provide education to their jurisdictions inclusive of neurotrauma topics. In addition, Maureen Scarboro, CRNP, Trauma Neurosurgery Nurse Practitioner, presented on Spinal Cord Injury Management and Treatment at the Winterfest EMS Conference.
The NTC incorporates didactic education and simulations on care of patients with traumatic brain injury and spinal cord injury as part of the Trauma Theory course. This year, numerous lectures and articles on neurotrauma related topics were made available to all staff at RACSTC, fulfilling the mandatory Neurotrauma education credits of nursing staff.

Research

The NTC's multidisciplinary team of clinical experts employs evidence-based treatment strategies designed to ensure immediate diagnostic and therapeutic access for patients with traumatic brain, spinal column, and spinal cord injuries. The NTC faculty's trauma-related publications in FY 2025 covered a variety of topics including diagnosis and prognostication, treatment and management, and mechanisms and long-term outcomes:

Diagnosis and Prognostication

Several studies explore advanced diagnostic techniques and their ability to predict patient outcomes. Topics here include:

- **Imaging:** Using advanced techniques like DTI-ALPS to assess glymphatic changes and the burden of perivascular spaces following TBI. Other studies investigate the use of MRI to identify traumatic meningeal enhancement and its association with clinical recovery. Another topic looks at the use of intraoperative ultrasound for SCI patients.
- **Machine Learning:** Employing machine learning to predict prognoses in TBI patients, which could help personal-

ize treatment plans.

- **Biomarkers:** One study investigates how extracellular mitochondria and oxidative stress could serve as biomarkers or indicators of damage in TBI.

Treatment and Management

This category covers clinical practices and surgical interventions for both TBI and SCI. Key themes are:

- **Spinal Cord Injury Surgery:** Research on the surgical management of acute SCI, including clinical practice recommendations from organizations like AO Spine. One topic specifically addresses the reduction of a locked facet in the cervical spine and compares the success rates of closed traction versus surgical approaches.
- **Coma Management:** An initiative by the Curing Coma Campaign focuses on improving the care and outcomes for patients in a coma after severe brain injury.
- **Traumatic Injuries:** A case study of a rare condition, traumatic bilateral deep cerebral venous thrombosis, and research into the acute development of intracranial aneurysms after gunshot wounds to the head.

Mechanisms and Long-term Outcomes

These topics delve into the biological and clinical consequences of brain and spinal injuries. They cover:

- **Injury Mechanisms:** A study on the mechanisms of AIS grade conversion in traumatic SCI, which relates to changes in injury severity classification. Another investigates how extracellular mitochondria can induce a state of oxidative stress in the blood vessels following TBI.
- **Concomitant Injuries:** The effect of having both a TBI and a SCI and its link to worse one-year outcomes. Another study explores the association between mandibular fractures and TBI.
- **Long-Term Effects:** The identification of distinct patterns of sympathetic hyperactivity following TBI, which can affect long-term health. Another topic addresses how a prior TBI can increase the risk of in-hospital mortality.
- **High-Priority Research:** An analysis of the National Trauma Research Action Plan to identify and prioritize key scientific questions related to TBI.

New and ongoing clinical trials include optimizing brain oxygen supply and outcomes following TBI using a brain oxygen monitor; determining the effect of small nucleotide polymorphisms (SNPs) on spinal cord injury outcome; delivering optimal oxygen therapy to TBI patients through hyperbaric oxygen; cooling patients with spinal cord injury to improve outcomes; using virtual reality to both assess and treat TBI in older trauma patients; and determining if maintaining spinal cord perfusion pressure (not just MAP) leads to better outcomes for spinal cord injury patients. An exciting new ultrasound technology is being studied in clinical trial at the STC/NTC that allows real-time visualization of the spine and spinal cord. This has the potential to revolutionize SCI care before, during, and after the OR.

Rehabilitation

Part of the recovery process must start at the very instant patients arrive at the NTC, with the aim of stabilization of critical injuries followed by early rehabilitation. The NTC's emphasis on early patient mobilization as the beginning of the rehabilitative process helps to decrease morbidity associated with neurologic injury. Post-acute inpatient and outpatient services are primarily provided by the University of Maryland Rehabilitation & Orthopedic Institute.

Rehabilitation Services

Designated trauma centers within the Maryland EMS system are required to provide for the rehabilitation needs of their patients, whether provided in-house or by way of affiliation with other facilities. This service is a critical element of the continuum of care for patients who have survived traumatic injury.

Initiation of rehabilitation services begins as soon as possible following admission. Rehabilitation services are both in-patient and outpatient. Patients who experienced multiple trauma injuries resulting in temporary or long-term disability benefit from a full range of rehabilitative services dedicated to enabling them to resume active, independent lives. The most frequent injuries requiring rehabilitation are spinal cord injury, traumatic brain injury, fractures, amputations, and gunshot wounds. The goal is to enable the patient to resume their highest level of functioning by regaining strength, range of motion, and cognitive healing. Individualized rehabilitative interdisciplinary treatment plans, developed with the patient, assist in meeting their needs and goals. The initial rehabilitation team evaluates and monitors the patient, focusing on the prevention of morbidity associated with the patient's immobility, positioning, and nutrition. Rehabilitation services within the hospital setting are also useful for future rehabilitation planning, prognosis, and care. Following the acute care phase, trauma centers help the patient and/or family determine the most appropriate place to meet the patient's rehabilitation needs. Factors that affect the patient, such as functional outcomes, social needs, financial constraints, geographic location, and eligibility requirements, assist in consideration for rehabilitation placement.

There are three main types of rehabilitation: physical, occupational, and speech therapy. The purpose of each rehabilitative therapy focuses on the patient's unique circumstances in order to enable the patient to resume the greatest level of functioning.

- **Physical Therapy.** The goals of physical therapy are to relieve pain, improve movement, strength, balance, and flexibility following injury, and for teaching patients how to use devices to help the patient manage his or her mobility. A physical therapist visits the patient at the bedside or in a physical therapy setting while in the acute care hospital. Decreasing pain and limiting permanent disability ensures patients the best possible chance of returning to daily activities. Physical therapists assist patients following injuries to bones, muscles, nerves, the spinal cord, and the brain. Patients may continue to see a physical therapist at home or at an outpatient center after leaving the hospital.

Top Destinations of Patients Who Went to Inpatient Rehabilitation Facilities (Age 15 and Over) (June 2024 to May 2025)

Source: Maryland State Trauma Registry

Rehabilitation Center	Number
Adventist HealthCare Rehabilitation	162
Bay Harbor Post Acute and Healthcare Center	45
Encompass Health	349
Inpatient Rehabilitation Center at MedStar Good Samaritan Hospital	21
Inpatient Rehabilitation Unit at the JHH	38
Johns Hopkins Bayview Specialty Hospital Programs	42
MedStar National Rehabilitation Hospital	51
PAM Health	71
Rehabilitation Institute at Sinai	49
University of Maryland Rehabilitation & Orthopaedic Institute	296

Note: Total patients age 15 and over that went to rehabilitation centers = 1,928.

Destinations of Patients Who Went to Inpatient Rehabilitation Facilities (Age 14 and Under) (June 2024 to May 2025)

Source: Maryland State Trauma Registry

Rehabilitation Center	Number
The HSC Pediatric Center, DC	4
Kennedy Krieger Institute	5
MedStar National Rehabilitation Hospital	1
Mount Washington Pediatric Hospital	10

Note: Total patients age 14 and under that went to rehabilitation centers = 20.

- **Occupational Therapy.** Occupational therapists focus on restoring a patient's ability to perform self-care, recreational activities, and everyday tasks such as getting dressed, eating, driving, and taking a shower. Occupational therapy may take place in the acute care hospital, outpatient center, and at home.
- **Speech Therapy.** The goal of speech therapy is to combine speech mechanics with the use of language for enhancing patient outcomes for communication functioning. Speech therapy can help a wide variety of issues involving language, communication, voice, swallowing, and articulation. Frequently, speech therapies are employed following a traumatic brain injury. Speech therapists help patients to swallow, eat, and better comprehend language following an injury. Speech therapy takes place in the hospital, at home, or at an outpatient center, depending on a patient's condition and needs.

Maryland Poison Center, University of Maryland School of Pharmacy

The Maryland Poison Center (MPC) works to decrease the cost and complexity of poisoning and overdose care while maintaining and/or improving patient outcomes. MPC provides 24/7 emergency poison information to the public and health professionals across the state. MPC is accessed by calling the nationwide poison help telephone number, 1-800-222-1222, or via the Emergency Medical Resource Center (EMRC). A division of the University of Maryland School of Pharmacy, MPC is designated by MIEMSS as a specialty referral center and by the Maryland Department of Health (MDH) as a regional poison center for Maryland.

Effective April 1, 2025, MDH expanded MPC's service area to include Prince George's and Montgomery counties – regions previously served by another poison center that has since closed. Additionally, DC Health has designated MPC as the regional poison center for Washington, D.C., which was also previously served by the same now-closed center.

MPC is certified by the American Association of Poison Control Centers (AAPCC) as a regional poison center. It has provided poisoning treatment advice, education, and prevention services to Marylanders since 1972. MPC's poison specialists are pharmacists and nurses who are certified as specialists in poison information (CSPI) by AAPCC. Our current staff of 19 specialists at the MPC have over 210 years of combined poison center experience, ensuring that callers have access to experienced, qualified, and well-trained staff.

In CY 2024, MPC managed more than 37,000 cases. While 30,000 of these cases involved human exposure, the remaining 7,000 were requests for information or involved animal exposures. Children under the age of six accounted for 37% of poison exposures. The top five causes of poisoning were analgesics, household cleaning products, antidepressants, cardiovascular drugs, and cosmetics and personal care products. More than 66% of the cases reported to MPC were managed at a site not providing health care, such as the home, school, or workplace. Maryland EMS clinicians consulted with MPC on 1470 cases in CY 2024. In 10% of those cases, transportation by EMS to a healthcare facility was deemed unnecessary and avoided based on MPC advice. Safely managing patients at the site of the exposure avoids unnecessary health care costs and allows more efficient and effective use of limited healthcare resources.

MPC works closely with state and national agencies to monitor for possible chemical and biological weapons exposures and public health events throughout Maryland and the Washington, DC, region. MPC's data-collection system allows data to be submitted in real time to a nationwide poison center surveillance system. In addition to the astute clinicians covering the service 24 hours a day, automated symptom and substance outlier detection strategies are used to help identify evolving patterns or emerging clusters of exposures by the National Poison Data System (NPDS).

MPC staff conduct research to advance the prevention, diagnosis, and treatment of poisonings. A complete list of MPC research efforts can be found in the Maryland Poison Center's 2024 Annual Report.

MPC's public education efforts are intended to help prevent poisonings from occurring and to increase awareness of the Center's services. In CY 2024, MPC attended 62 programs throughout Maryland, reaching approximately 4,000 people. Organizations that partnered with MPC to provide education included fire and police departments, hospitals, health departments, pharmacies, hospital perinatal education programs, Head Start, Healthy Start, and local health improvement coalitions. Fourteen county school systems and daycare centers used educational materials from MPC in their classrooms. MPC distributed more than 124,000 pieces of educational materials (brochures, magnets, telephone stickers, Mr. Yuk stickers, teachers' kits, and more) at programs, schools, health fairs, and by direct mailings.

National Poison Prevention Week (March 17-23, 2024) activities included mailings to emergency departments and elementary schools throughout the state. To provide Poison Prevention Week toolkits to elementary schools, MPC partnered with elementary school nurses in eight counties to offer Poison Prevention Week materials. Schools could choose from a list of materials and activities to increase awareness of poison safety to the students and their families. In all, 52 schools participated, reaching over 24,000 students and their families.

MPC publishes *Poison Prevention Press*, a bimonthly e-newsletter for the public that highlights poison safety topics, and shares content on topics related to poison prevention and safety with the public via its Facebook, Instagram, and X channels, as well as its blog, *e-Antidote*. Additionally, MPC shares important clinical and medical toxicology information, updates, and news with health professionals via its monthly e-newsletter, *ToxTidbits*, and its dedicated accompanying X channel.

MPC's educational programming and materials are designed to help health professionals better assess and manage poisoning and overdose cases. In CY 2024, MPC presented 15 programs at hospitals, EMS/fire departments, colleges, professional conferences (state, regional, and national), and through online webinars. More than 400 physicians, nurses, EMS clinicians, pharmacists, physician assistants, and other health professionals attended these programs and webinars. MPC likewise provides onsite training for physicians, pharmacists, and EMS clinicians.

INTEGRATION OF HEALTH SERVICES

Maryland EMS effectively addresses clinical problems that may be of immediate high consequence. Information collected during EMS interactions is a critical component of patient-care records and health systems information. MIEMSS partners with other Maryland agencies to develop data sets that are vital to statewide healthcare improvement.

Mobile Integrated Health

Mobile Integrated Health (MIH) programs are collaborative efforts between Maryland EMS jurisdictions and health system partners and designed to address patients' medical needs before they result in 9-1-1 calls. During home visits, EMS clinicians evaluate patient living spaces and identify ways to improve that environment to promote the patient's mental and physical wellbeing and self-care. Currently, there are 13 Maryland EMS jurisdictions and one commercial ambulance service with MIH programs. Most MIH programs focus on patients who were recently discharged from the hospital, referred by allied health professionals, or have called 9-1-1 more than five times within six months. The MIH teams strategically partner with hospitals, health departments, pharmacies, and social services agencies to support a range of patient needs.

MIH programs visited 3,222 patient homes across Maryland during this fiscal year. During these visits, EMS clinicians assessed the living environments and developed appropriate interventions to reduce health risks to their patients, for example, adjusting living spaces to prevent falls, ensuring that medications are taken correctly, and scheduling follow-up medical appointments. Most importantly, MIH programs have pioneered the initiation of buprenorphine for patients with opioid use disorder, and providing hemoglobin A1c checks for patients with diabetes.

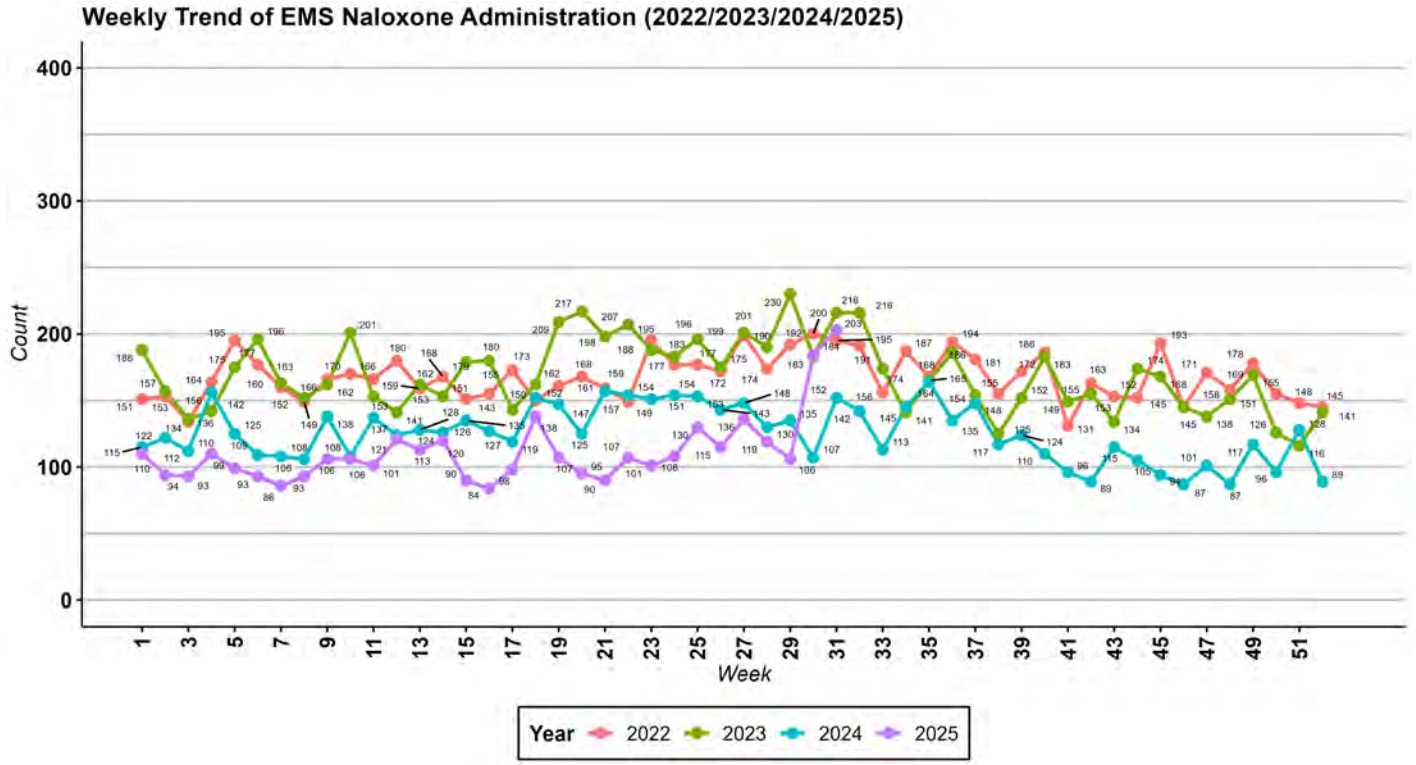
Chesapeake Regional Information System for our Patients (CRISP) and eMEDS® Integration Project

The integration of eMEDS® with Chesapeake Regional Information System for our Patients (CRISP), the health information exchange service for Maryland and Washington, DC, continues as an important ongoing project. Data Analysis and Information Management (DAIM) has enhanced this integration to allow CRISP to receive additional patient care data on a more frequent basis. Currently, EMS reports are securely transferred to CRISP in close to real time. This integration makes the EMS report available to all health care clinicians with CRISP access, including those in primary care. Aligning these two systems makes prehospital emergency care information available to participating physicians and hospitals throughout the state. A future phase of the project aims to make select patient medical data, such as medical history and medications, available to EMS clinicians to enhance the care they can provide at the patient's side.

Opioid Overdose Data Reporting (ODMAP)

MIEMSS contributes data derived from EMS patient care reports to the Washington/Baltimore High-Intensity Drug Trafficking Areas (HIDTA) Overdose Map (ODMAP) database. MIEMSS collaborates with the Maryland Department of Health, the Maryland Office of Overdose Response (MOOR), and other

partnering agencies to monitor and address opioid overdoses in Maryland and facilitate a comprehensive statewide oversight and proactive response to the opioid overdose challenge. This united front remains unwavering in its commitment to addressing and mitigating the opioid overdose crisis within Maryland.



Naloxone Administration

As every EMS encounter in Maryland is documented in a statewide EMS medical record system (eMEDS®), the information gathered can be helpful in assessing the overall burden of specific healthcare challenges in the community. Among them is the incidence of opioid overdose. Each week, MIEMSS shares the EMS experience with naloxone, an opioid overdose reversal agent, administration throughout the state. This information is used by the Maryland Office of Overdose Response and the Maryland Department of Health as part of public health surveillance efforts. This information is merely one aspect of monitoring progress toward attenuating the opioid overdose problem.

COMMUNICATIONS

Every county and town in Maryland must have a well-functioning, up-to-date, and accessible EMS communications and response system. To achieve this, Communication Engineering Services (CES) continually evaluates and maintains the response system and provides equipment, support, and expertise necessary for statewide coverage. Strong partnerships with Maryland State Police, Maryland State Highway Administration, Department of Natural Resources Police and Forestry, Maryland Department of Transportation and the Transportation Authority, Maryland Department of Emergency Management, Homeland Security Border Protection, and our 9-1-1 centers and Counties, are vital in overcoming challenges.

EMRC / SYSCOM

Maryland's Emergency Medical System's communications hub is composed of two integrated components, Emergency Medical Resource Center (EMRC) and Systems Communications (SYSCOM). Both the EMRC and SYSCOM function 24 hours a day, 365 days a year.

EMRC manages communications between prehospital emergency medical services clinicians and emergency departments, trauma centers, and specialty centers to facilitate medical consultations. During major medical incidents, the EMRC shares up-to-date situational awareness regarding the activities, capabilities, and capacities of hospitals and the prehospital system. The EMRC provides initial alerting, coordinates resources, and manages patient distribution

This year, EMRC handled 216,757 telephone and radio calls. These calls included communications involving administrative/operational support issues, single patients, incidents with multiple patients, and calls involving online medical direction. With integration of the Emergency Department Advisory System (EDAS) the center monitors and shares hospital status information with 911 centers, EMSOPs, MIEMSS officials and hospitals.

SYSCOM handles requests from EMS, law enforcement, homeland security, and disaster management, and coordinates helicopter resources for medevac and other missions. The Maryland State Police Aviation Command (MSPAC) Operational Control Center is located within SYSCOM, where MSPAC Duty Officers to coordinate missions. SYSCOM coordinated 4,369 total (law enforcement, search-and-rescue, medevac) flight requests, including/resulting in 1,864 patients flown to specialty referral centers.

Maryland First Responder Interoperable Radio System Team (MFiRST)

Maryland First Responder Interoperable Radio System Team (MFiRST) is a statewide encrypted radio system that provides radio communication across the entire State. The system provides air-to-ground channels for public safety flight operations that directly support the Maryland State Police Aviation Command (MSPAC) medivac operations. By serving on the Radio Control Board and Operations Committee, CES provides oversight of the operation and maintenance of the Statewide Public Safety Interoperability Radio System. This enabled the implementation of an interface that provides Maryland jurisdictions with use of MFiRST for medical consultations and guidance through the EMRC. With the additional implementation of P25 phase II upgrades, Maryland State Police Aviation Command will be able to fully migrate to MFiRST systems.

A primary goal of MFiRST is improving coverage by eliminating communication dead spots. While this goal is being achieved, CES continues to maintain the VHF low-band system for statewide communication, promoting integration of aviation talkgroups (AVTacs) within MFiRST, and establishing a shared communications platform for counties and aviation resources to enhance the continuum of care. Currently, Talbot, Caroline, Carroll, Cecil, Queen Anne's, Kent, Harford, Allegany, Garrett, Dorchester, Somerset, Washington, Wicomico, and Worcester Counties have implemented AVTacs, with plans to include additional counties as MFiRST completes statewide deployment.

Public Safety Interoperability Network (PSInet)

MIEMSS Communications Engineering Services (CES) deploys, administers, and maintains the Public Safety Interoperability network (PSInet), a statewide, private IP-based public safety network comprised of fiber, microwave, and wireless links that support critical data and voice.

Essential to future operations and implemented through the Communications Upgrade Project (CUP), PSInet is the foundation for Maryland's transition to an IP-Based EMS communication systems. The network provides connectivity into Maryland State Police barracks, MIEMSS regional operating centers, jurisdictional emergency operations centers (EOC), public safety answering points (PSAP), state and jurisdictional health departments, hospitals, and other allied agencies. Applications that currently operate on PSInet and Maryland First Responders Interoperable Radio System Team (MFiRST) include the Digital Emergency Medical Services Telephone (DEMSTEL), Central Maryland Area Radio Communications (CMARC), other systems monitoring/controlling the state's public safety microwave network, and tower infrastructure.

Communications Systems Maintenance and Improvements

In FY 2025, CES continued to migrate systems to new, more resilient technologies that enhance services provided to the EMS community. The department focused on several major projects to ensure a well-functioning, up-to-date, and accessible EMS communication and response system, including:

- Public Safety Microwave Systems updates
- Continued work on the Communications Upgrade Project (CUP)
- Addressing issues related to the Verizon copper

Maryland Institute *for*
Emergency Medical Services Systems

EMRC - SYSCOM Flight Statistics

216,757
2024 EMRC Connections

129,051
2025 EMRC Connections
(To-Date)

2024 Flight Requests

Total Number of Requests - 4,369

Completed Patient Transfers - 1,864

2025 Flight Requests
(To-Date)

Total Number of Requests - 2,698

Completed Patient Transfers - 1,191

retirement project

- Maintaining and servicing communications systems on a full schedule
- Leveraging newer communications systems such as MFiRST while maintaining current systems
- Partnering with Anne Arundel County to use its Multi-Protocol Label Switching (MPLS) network, enhancing reliability and geo-diversity of PSInet.

CES leads the design, implementation, and maintenance of Maryland's Microwave System for EMS communications. This critical infrastructure supports MIEMSS, Maryland State Police (MSP), Maryland Department of Natural Resources (DNR) Maryland State Highway Administration (SHA), Maryland counties' public safety radio systems, and other partner agencies. This system includes the statewide 700 MHz radio system project (MFiRST). Microwave systems are critical for reaching remote areas within that state that do not have access to newer technologies.

FY 2025 highlights within the current communication plan include upgraded microwave links to enhance reliability and resiliency, strategically placing Ethernet-capable radios in locations to further support CUP, upgrade of microwave links across Maryland that provides a more robust and reliable transportation of radio traffic (backhaul) for long-term sustainability of the EMS communication system.

The following significant microwave path replacements and new microwave links that expand the native Ethernet network and enhance connectivity for CUP:

- Allegany 9-1-1 to Allegany COB
- Oxon Hill-District Heights
- District Heights to PGCCF
- District Heights to DC Children's hospital
- Doctors' hospital to Cobb
- Ellicott City to Timbers

Since 2019, CES has steadily advanced work on CUP. To decrease the risk of vulnerabilities and outages from older communication systems and reduction of vendor support, the work on the microwave system and PSInet has supported critical upgrades required to advance CUP, and proactive replacement of these systems ensures systems like the Region III patching system that is 28 years old to maintain quality and reliability while working to bring the new systems online, the primary goal of CUP.

CES upgraded the primary and secondary Master Alarm monitoring servers to new Linux servers and continued integrating the MFiRST system alarms into the MIEMSS master alarm system. This integration enlightens system maintenance and performance issues and provides for rapid identification and diagnosis for system improvements while leveraging the state's investment in the master alarm system to enable an overall comprehensive view of MIEMSS, DNR, SHA, and the MFiRST radio infrastructure. This year, MIEMSS supported the installation of enhanced alarm monitoring systems at additional MIEMSS' tower sites and hospital locations.

PREPAREDNESS AND RESPONSE TO EXTRAORDINARY EVENTS

Preparation for extraordinary events is a continuous process involving many collaborators, including the Maryland Institute for Emergency Medical Services Systems (MIEMSS), the Maryland Department for Emergency Management (MDEM), the Maryland Department of Health (MDH), EMS operational programs, commercial ambulance services, health care partners and other federal, state, and local agencies. Recent efforts include ensuring readiness of the CHEMPACK program to enable deployment of time-critical chemical nerve agent antidotes, development of ambulance strike teams, an active assailant workgroup, and collaboration during the state's response to the COVID-19 pandemic. MIEMSS and local agencies periodically participate in disaster exercises.

Regional Coordination

MIEMSS Regional Offices are distributed across the state and staffed by regional coordinators and administrative personnel. Each office monitors the operation of its assigned region within the statewide EMS system. Regional coordinators serve as technical advisors to EMS jurisdictions, hospitals, and other part¬ners, assisting with EMS system coordination and development. They collaborate with jurisdictional EMS programs to ensure that efficient and effective emergency care is always available. Additionally, regional staff support local programs, such as Mobile Integrated Health. Regional coordination works closely with EMS and partner agencies to facilitate conferences, exercises and training sessions.

Regional Councils

Regional councils help implement quality assurance and improvement measures by reviewing performance data and suggest targeted trainings to address identified gaps. Additionally, the regional councils play a key role in disseminating protocol updates and organizing training sessions for new protocols (i.e., High-Performance CPR and Pediatric High-Performance CPR), ensuring EMS personnel remain informed and prepared to deliver high-quality care.

Emergency Medical Systems Situational Awareness and Operations

The EMS Preparedness and Operations (EMSPO) department plays a vital role in Maryland's emergency management framework. They provide 24/7 staffing and collaborate with both inter-

nal and external departments and agencies to respond to incidents. Their responsibilities include data collection and system integration to support and enhance EMS operations across the state.

The EMS Preparedness and Operations department coordinates, administers and maintains the following:

- The MIEMSS segment of the Administration for Strategic Preparedness and Response/Health and Human Services (ASPR/HHS) Hospital Preparedness Program (HPP) grant and funding.
- The Maryland Emergency Medical Resource Alerting Database (MEMRAD), which connects hospitals, EMS, Public Health, and other partners, providing a more unified operational view of incidents.
- The eMEDS® interface to the Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE) system, which combines EMS, hospital, primary care, Pharmacy, and other data sources data with other healthcare data for improved epidemic detection.
- Preparedness for the National Disaster Medical System, high-consequence infectious diseases (HCID), critical incident stress management, Chemical Emergency Preparedness (CHEMPACK) program, and healthcare facility evacuation exercises.
- The MIEMSS Incident Management Team, and support to the State Incident Management Team.

In addition, EMSPO provides situational awareness and facilitates state-wide support in the following ways,

- Ongoing situational awareness through communication with stakeholders and management of hospital intelligence and bed availability data.
- Maintained ongoing situational awareness of the EMS and Healthcare systems in collaboration and communication with federal, state, local, and other stakeholders.
- Provide EMRC reports for mass casualty events, healthcare facility fires, and other incidents where state support or other resources is required.
- Coordinated agency Continuity of Operation (COOP) planning.

COOP / Backup Sites

MIEMSS Continuity of Operations Plan (COOP), developed in FY 2024, evaluated current systems and recognized areas where mission specific needs required attention. MIEMSS identified an essential need for an additional Emergency Medical Resource Center (EMRC) and System Communication (SYSCOM) as a Backup Center capable of fully supporting current EMRC and SYSCOM operations if the primary communications center becomes unusable due to a building infrastructure failure, disaster, or other unplanned event. In 2022, MIEMSS and Harford County Department of Emergency Services began to integrate MIEMSS operations at their 9-1-1 Center. MIEMSS Communication Engineering successfully implemented a new console to fulfill the needs of the COOP plan and install a backup center geo-diverse from MIEMSS. In 2025, This project was able to meet some of the equipment needs through alignment with the Communications Upgrade Project (CUP) project, though more equipment is necessary to ensure full operation of this critical backup center.

CHEMPACK

EMS Preparedness and Operations (EMSPO), in collaboration with the Office of the State EMS Medical Director, oversees the CHEMPACK program for first responders in Maryland. This program, developed by the CDC's Strategic National Stockpile (SNS), is now managed in partnership with the U.S. Department of Health and Human Services Assistant Secretary for Preparedness and Response and the Maryland Department of Health Office of Preparedness and Response. CHEMPACK provides EMS clinicians with rapid access to critical antidotes for nerve agent attacks and large-scale organophosphate poisonings. Strategically stored antidotes at secure locations across Maryland are available for quick access when needed. The CHEMPACK inventory is carefully monitored.

Active Assailant Interdisciplinary Work Group (AAIWG)

The Maryland Active Assailant Interdisciplinary Work Group (AAIWG) identifies, updates, and shares best practices and current activities to help Maryland prevent, prepare for, respond to, and recover from active assailant incidents. The AAIWG's multidisciplinary membership includes subject matter experts from across the State. MIEMSS strategically partners with the AAIWG and has co-chaired theAAIWG committee since its inception in 2013. The AAIWG brings a multidisciplinary approach to prevention, intervention, response to, and recovery from active assailant incidents and related public safety and emergency management planning.

Maryland-National Capital Region Emergency Response System (MDERS)

Established in 2014, the Maryland-National Capital Region Emergency Response System (MDERS) serves as the single point of collaboration between fire, rescue, emergency medical services, law enforcement, emergency management, and healthcare within Montgomery and Prince George's Counties. MDERS is dedicated to supporting its stakeholders by leading the development and implementation of essential response capabilities that safeguard more than two million residents and visitors in the Maryland-National Capital Region. Working alongside a Steering Committee comprised of leaders from stakeholder agencies, MDERS identifies key response capabilities that need further enhancement and expansion. These priorities and their objectives are detailed in the MDERS Strategic Plan, which directs all planning, organization, equipment, training, and exercise investments for each fiscal year. From June 1, 2024, through May 31, 2025, MDERS assisted its stakeholders in developing and enhancing response capabilities through the provision of plan and policy development, training and exercise development and delivery, and equipment acquisition to support the missions of its partner agencies.

Investment Overview

Training and Exercise Program

MDERS's Training and Exercise program offers numerous opportunities for stakeholders to develop and enhance capabilities through in-person, virtual, and hybrid curricula. This year, MDERS supported the attendance of 498 stakeholders at 30 conferences and 19 training opportunities. Attendees were provided with the unique opportunity to learn from discipline-specific subject matter experts on a variety of topics including technical rescue, medical first receivers' operations training (FROT), aerial platform tactical operations, close quarters combat, and many more. MDERS also hosted its ninth annual symposium, the first in-person gathering since 2019, that was curated to educate first responders on lessons learned and how entities have evolved to strengthen response efforts. Additionally, MDERS led several training initiatives for stakeholders, including:

- a structural collapse full-scale exercise with Montgomery County Fire and Rescue Service (MCFRS) and Prince George's County Fire/EMS;
- a command oversight functional exercise with Montgomery County Police Department (MCPD);
- a fire response workshop and tabletop exercise (TTX) with Washington Gas and jurisdictional partners;
- an active assailant TTX with Prince George's County Public Schools (PGCPS) and first responders;
- a community reception center (CRC) workshop with the Montgomery County Department of Health and Human Services (MC DHHS);
- an active assailant TTX at the Adventist HealthCare Shady Grove and White Oak Medical Center;
- a public order TTX with MCPD and PGPD;
- a Homeland Security Exercise and Evaluation Program (HSEEP) course; and
- coordinated planning and execution of an exercise series with Montgomery County Office of Emergency Management and Homeland Security (MC OEMHS) for their Emergency Management Group (EMG).

Evolv Detection Systems

Threats to hospitals have dramatically escalated in recent years. As public-facing entities, it is difficult to screen individuals who pose a significant threat to a facility and its personnel. In partnership with Maryland-National Capital Region medical facilities, MDERS procured four Evolv detection devices. The detection devices use sensors and artificial intelligence to identify individuals who may be carrying weapons or other prohibited items within a hospital. Threat identification is paramount to addressing a threat before a hostile act may be committed. The four systems are placed at four medical centers, (Holy Cross Hospital, Adventist HealthCare Shady Grove Medical Center, University of Maryland Capital Region Medical Center, Luminis Health Doctors Community Medical Center), and future devices may be installed to further bolster threat identification capabilities at medical facilities.

Emergency Management Response and Recovery Professional Services

MDERS supported the diverse missions and functions of the Prince George's County Office of Homeland Security and Emergency Management (PG OHS/EM) and MC OEMHS through the provision of professional services.

Over the past year, the support to MC OEMHS has allowed them to conduct training on emergency preparedness for County residents, host a National Preparedness Symposium, collaborate with non-profit organizations to address the needs of disabled persons during emergencies, coordinate and plan emergency response efforts with partners that comprise the Community Organizations Active in Disaster (COAD), update and amend the Volunteer and Donations Plan. Another aspect of this MDERS allotment to MC OEMHS was the addition of large television monitors and teleconferencing equipment to expand monitoring capabilities for heightened situational awareness at their Department Operations Center (DOC).

PG OHS/EM leveraged additional professional support for the creation of a Cyber Resiliency Plan and hosted a TTX to examine the application of the plan with Prince George's County partners, expanded the functionality of the Community Lifelines mobile application, hosted CPR/AED/first aid training in coordination with members of the Community Emergency Response Team (CERT), conducted emergency preparedness drills with vulnerable populations, and arranged various community engagement events.

The programmatic progress made by both MC OEMHS and PG OHS/EM will better equip both jurisdictions to prepare and respond to emergencies.

Emergency Management Response Vehicles

The ability to quickly respond to an emergency is pivotal for a successful deployment. Both MC OEMHS and PG OHS/EM received a response vehicle to support emergency operations in their jurisdiction. Each sports utility vehicle (SUV) is capable of transporting personnel and equipment to an incident. These additions will greatly bolster each department's operational capabilities to oversee and support emergency operations.

Damage Assessment Software

Prince George's County OHS/EM advanced its emergency management capability through the acquisition of Juvare's Crisis Track software. The integration of this platform into their damage assessment capabilities facilitates prompt evaluations in the post-impact recovery phase. The data collected is categorized into standard Federal Emergency Management Agency (FEMA) forms to streamline reporting efforts. The swift collection and standardization of all data upgrades PG OHS/EM's ability to prioritize areas of need and direct resources to the most affected areas.

Public Health Emergency Response

MDERS funded two full-time medical resource officers (MROs), one each in Montgomery and Prince George's Counties, to bolster public health emergency preparedness and response capabilities. These MROs lead the coordination of the local Medical Reserve Corps (MRC) volunteers in both counties, including the recruitment, credentialing, planning, training, exercising, and deployment of volunteers. As part of the Montgomery County Department of Health and Human Services, the MRO and MRC achieved notable successes, including the development and implementation of necessary changes in response to the COVID-19 pandemic and the Mpox (monkeypox virus) outbreak. In Prince George's County, the MRO and MRC, overseen by the County's Health Department, also achieved notable accomplishments. The largest success was the drafting of a Medical Countermeasures Plan to better prepare personnel for all potential public health emergencies.

Law Enforcement Tactical Equipment

MDERS remains a critical partner in supporting MCPD's and PGPD's Special Operations Division (SOD). The SOD in each department is tasked with handling complex situations that necessitate specialized equipment to meet the unique objectives they are assigned. Over the past year, MDERS helped MCPD and PGPD procure a personnel deployment van. These vans significantly enhance each department's ability to deploy personnel to specialized law enforcement incidents that exceed routine patrol capabilities across the National Capital Region.

Additionally, MDERS procured a van that has been retrofitted to serve as a small unmanned aerial system (sUAS) deployment vehicle for MCPD. sUAS devices have become more prevalent in all emergency fields due to their ability to operate in a multitude of environments and leverage a variety of different capabilities such as video, thermal imaging, etc. This van, equipped with advanced communication capabilities, will enhance MCPD's tactical effectiveness by providing the mobility to safely and effectively deploy sUAS throughout the county.

sUAS capabilities were also supported for PGPD with the acquisition of various ancillary items. A MESH system, a network system to improve coverage over a large area, and antenna were added to the department's sUAS van to bolster communication capabilities. Steps were included to improve the functionality of the van.

PGPD also identified other areas to improve their response capabilities. MDERS procured eight active assailant training kits that include replica firearms, training props, moulage, and other equipment to safely train and improve tactical and medical techniques on a variety of law enforcement responses. A total of 677 command guides were produced for ease of reference for officers. These guides contain meticulous steps for officers to adhere to during various situations (e.g., active assailants, bomb threats, etc.). This ensures all required procedures are closely followed to ensure a successful response. Lastly, officer safety and the safety of the community is imperative for PGPD. MDERS purchased 500 individual first aid kits (IFAKs) for officers to be able to quickly administer needed initial care before the arrival of medical professionals.

Through these investments, MDERS supported MCPD's and PGPD's ability to expeditiously, effectively, and efficiently respond to and mitigate a variety of high-threat scenarios.

Law Enforcement Respiratory Protection Equipment

Law enforcement personnel often operate in austere or unpredictable environments where they may be exposed to hazardous chemicals, biological agents, or other harmful substances. These exposures can significantly hinder their ability to carry out their duties effectively and safely. To maintain a high degree of situational awareness in difficult settings, MDERS procured 60 powered air purifying respirators. These devices filter contaminants from the air and allow MCPD officers to breathe clean air and remain operationally functional during deployments.

Soft Target Protection Cameras

Situational awareness is imperative to first responders for an effective response. To increase this awareness, MDERS worked in collaboration with MCPD to acquire 16 camera systems that have been strategically placed at sensitive locations throughout Montgomery County. The cameras are strategically mounted on utility poles in high-priority locations to provide MCPD and other first responder agencies with continuous real-time video feeds. The constant vantage point from the cameras expedites notification to first responders of any potential emergency at these locations and maintains consistent monitoring throughout a response.

Command Competency Lab Enhancements

Training is a key repetitive function for all emergency partners. MCFRS has created a command competency lab to simulate a multitude of emergencies and evaluate officers' ability to manage the incident. To enhance the lab, MDERS worked with MCFRS to identify equipment to improve the lab's functionality. Additional computer monitors and recording and audio equipment were integrated into the lab to allow for more perspectives and streamline the evaluation process. This equipment also adds the ability to capture and replay the actions of a command officer going through the process. The unfiltered video of the individual allows evaluators and the officer to reexamine their respective performance and identify strengths and areas for improvement in a collaborative manner. MCFRS identified the need for a thermal imager to be included in this procurement. This adds another layer of realism and allows individuals to practice the appropriate usage of this tool. All these additions to MCFRS's Command Competency Lab will prepare officers for real-life emergencies.

Structural Collapse Equipment

MDERS has allocated extensive resources to the structural collapse capabilities of MCFRS and PGFD. This support extended through this year with the procurement of additional Paratech shoring kits and battery-operated tools. The shoring kits are an essential component for structural collapse response to ensure fire personnel have safe ingress and egress at the scene. In the confined areas of a structural collapse, there is limited maneuverability and increased difficulty in using equipment that requires an external power source. The battery-powered breaker hammers and rotary hammers can be used in a more user-friendly manner in these difficult settings. Overall, these tools will boost the structural collapse capabilities of both departments.

Chemical, Biological, Radiological, Nuclear, and Explosive (CBRNE) Training and Simulation System

Hazardous materials (Hazmat) are a prevalent threat in the National Capital Region. The concentration of government and private entities in the area poses a heightened threat. The ability to detect and correctly identify a hazardous substance is crucial for a successful response. MDERS obtained training equipment for MCFRS to train personnel on this vital ability. As part of this outlay, MCFRS received four radiation detector simulators, two radiation devices, one radiation source kit, one chemical hazard detection simulator, one chemical surface sampling simulator, eight gas training simulators (two with customizable scenarios), and one instructor remote monitoring system. This bounty of training equipment positions MCFRS to be at the forefront of Hazmat training and imparts the skills needed to their personnel.

Emerging Homeland Security Technology Pilot

MDERS supports stakeholders in identifying innovative ideas and equipment to address emerging homeland security challenges. Annually, MDERS allocates 5% of its budget to this program, which focuses on evaluating innovative tools and technologies identified through first responder experiences. Detailed below are the technology and equipment MDERS procured for MCPD and PGPD.

PGPD acquired Smart Firearm training pistols, scent systems, and additional training props. The training pistol is a cutting-edge device that identifies actions taken by the trainee. The sensors on the pistol are calibrated to detect if and when the trigger is pulled during an exercise. This information can be correlated to an exercise scenario to determine if a firearm discharge was warranted. The objective data can lead to objective evaluation and spur corrective action if needed. To further create realistic and immersive training scenarios for MCPD and PGPD, MDERS procured SensoryCo scenting systems, which emit an odor intended to replicate smells officers will encounter in the field. More lifelike props, including tools (e.g., hammers, crowbars) and adult and child mannequins, were obtained for PGPD. The totality of these items creates a holistic training environment to equip trainees with the skills needed for actual events.

PGPD received new hydraulic breaching and vertical access tools to upgrade their ability to enter structures. The breaching tools are a dynamic and durable option for PGPD to seamlessly overcome barriers to enter a building. The components for the vertical access kits include ladders and other scaling equipment for upward or downward mobility into a point of entry.

Officer safety is paramount for both MCPD and PGPD. If the unfortunate circumstance arises where immediate medical intervention is required, both departments were provided with airway suction devices to provide prompt medical care for an injured officer or civilian. The equipment adds a new capability to tactical emergency medical support (TEMS) providers to administer vital aid before transportation to definitive care.

Active assailant events are complicated endeavors for law enforcement, but they are exceedingly difficult for critical infrastructure facilities. While hospitals are open to the public, they have many areas that are secured with limited access and have numerous rooms or offices that can be locked. The expediency for law enforcement to neutralize a threat is significantly inhibited in these locations. MDERS, law enforcement, and hospital partners concluded that the acquisition of staged breaching equipment at nine Maryland-National Capital Region hospitals would help alleviate the potential for a slower response because of locked doors. The equipment can quickly be accessed by law enforcement and used to gain access to vital corridors of the hospital to neutralize a threat.

Before individuals can become sworn officers for PGPD they must pass the mandated curriculum in their training academy. An important aspect of this process is the Patrol Scenario Training (PST). This phase of the academy requires cadets to apply their skills to realistic scenarios. Handwritten assessments of their performance prolonged the evaluation process. MDERS bought four tablets to digitize the rubrics and simplify the submission process to expedite the review and improve the overall process.

MDERS Workgroups to Support Regional Activities

MDERS staff supported or led workgroups and initiatives that informed the vision, deployment, expansion, and investment of critical response capabilities. Through these workgroups, MDERS identified the necessary planning, organizing, equipping, training, exercising, and evaluation components necessary to enhance and sustain the Maryland-National Capital Region's public safety enterprise. These workgroups include, but are not limited to, the Structural Collapse Workgroup, sUAS Workgroup, Public Order Workgroup, Decontamination Workgroup, and the Command Competency Workgroup.

Representation in Regional Activities

MDERS represented its stakeholders by holding positions on regional committees hosted through the Metropolitan Washington Council of Governments (MWCOG). As a conduit between the local jurisdictions and the larger National Capital Region (NCR), MDERS minimized the burden on stakeholder agencies while ensuring their interests are represented and supported through regional funding. MDERS staff members participated in meetings and activities, including involvement in Regional Emergency Support Function (RESF) Committees; Regional Programmatic Working Groups; Regional Planning Guidance Working Group; the NCR Emergency Response System; and the NCR Homeland Security Executive Committee (HSEC), Policy Group, and Advisory Council.

RESOURCE MANAGEMENT

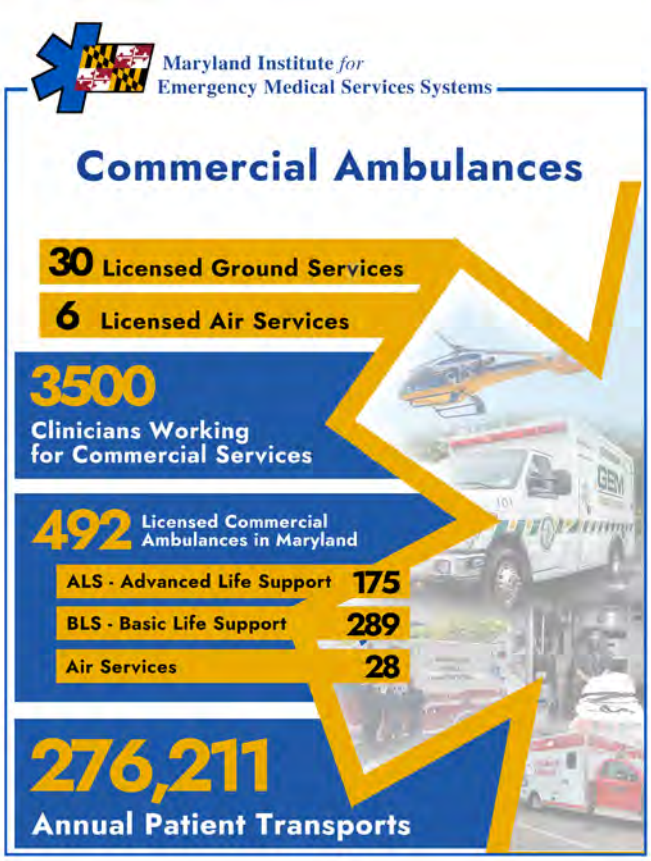
Maryland's EMS resources include more than 1,300 public safety ambulances and more than 400 commercial ambulances that provide most interfacility patient transports. The Maryland State Police provide air medical support for EMS response, where commercial air medical services provide air critical care interfacility transport.

State Office of Commercial Ambulance Licensing and Regulation

The State Office of Commercial Ambulance Licensing and Regulation (SOCALR) provides leadership and direction to support the operations and growth of Maryland's commercial ambulance industry. It protects the health, safety, and welfare of persons using these services through the development and modification of statewide requirements for commercial ambulance services and vehicles and the uniform and equitable regulation of the commercial ambulance industry throughout Maryland.

At the conclusion of FY 2025, 37 commercial ambulance services and 464 commercial ambulance units held licenses issued by SOCALR.

SOCALR has updated and enhanced several of its operating systems and applications to improve productivity and reporting capabilities. During FY 2025, SOCALR expanded the Commercial Ambulance Services Dashboard. This dashboard gives each commercial service access to all of the information that SOCALR maintains.



SOCALR works closely with commercial services and third-party electronic Patient Care Records (ePCR) vendors to ensure data is imported accurately and efficiently from the vendor platforms. Patient care reports are randomly sampled for accuracy of information and reviewed for completeness and to verify the receipt of data from services that import from third-party vendors. These measures are used to improve patient care through the standardization and aggregation of patient care data.

In May 2021, under the Governor's Emergency Declaration, SOCALR implemented a regulatory change that allowed Commercial BLS ambulances to be driven by non-EMS-licensed drivers. A waiver program was implemented to allow commercial services, who have gained approvals, to employ drivers on BLS units. Following the expiration of the emergency declaration, this program was approved by the EMS Board and adopted into COMAR. Currently, SOCALR has granted the waiver to 15 commercial services, which employ 216 approved non-EMS-licensed drivers. In Fiscal Year 2025, SOCALR worked with the Commercial Services to develop and implement regulations changes that expand this program to ALS units.

Ambulance Licensing and Renewal

SOCALR continues to maintain a year-round licensure renewal schedule, inspecting all commercial ambulances at least once during the year.

In addition to yearly unit renewal inspections, SOCALR conducts random unit inspections throughout the year. In FY 2025, SOCALR conducted random inspections on 110 days, visited 655 sites, and inspected 109 units. Additional inspections included nine surveys of licensed commercial services bases. A team of SOCALR personnel who provide follow-up reports outlining any corrective actions necessary to maintain COMAR Title 30.09 compliance conduct these base surveys.

Jurisdictional EMS Operations Programs

Maryland's Emergency Medical Services (EMS) system is built on a strong foundation of local expertise, statewide coordination, and a shared commitment to protecting the health and safety of every community. Emergency Medical Services pre-hospital care is provided by twenty-eight (28) Jurisdictional EMS Operational Programs (JEMSOPs), which deliver 9-1-1 EMS response across the State of Maryland. MIEMSS coordinates the Jurisdictional Advisory Committee (JAC) as a forum to disseminate information on new policies and protocols. The JAC bi-monthly meetings foster collaboration among jurisdictions and promote the development of best practices.

Each year, MIEMSS conducts an annual resource survey in partnership with these JEMSOPs. This survey provides a comprehensive snapshot of the EMS resources available statewide, including the number and types of EMS units staffed and deployed to respond to emergency calls. The data gathered offers insight into both current capacity and emerging needs, ensuring that Maryland's EMS system remains prepared, resilient, and responsive.

PUBLIC ACCESS

9-1-1 System

Public access to emergency medical services in every jurisdiction in Maryland is enabled through calls to 9-1-1 centers. Several have undergone recent technology updates as the patterns of callers have evolved, meaning calls from wireless devices exceed those from landline telephones in many areas. Resources are being made available to begin implementation of Next Generation 9-1-1, which is intended, in part, to facilitate access and information transfer by means other than voice communications. In FY 2024, Network monitoring and alarm monitoring systems were implemented to improve staff efficiency and enable rapid, decisive system repairs.

Automated External Defibrillator (AED) Program

Maryland regulation requires that Public high schools, middle schools, county or municipality-owned or operated swimming pools, grocery stores and restaurants meeting certain conditions, and some public/semi-public pools and health clubs depending on local ordinances are required to have publicly accessible AEDs.

The voluntary Maryland Public Access Automated External Defibrillator (AED) Program permits facilities that do not provide health care but meet certain requirements to have an AED onsite for bystander use in the event of a sudden cardiac arrest (SCA) until EMS arrives.

This year, the new Maryland AED registry application and online information was created to register track use of AEDs across Maryland. The Maryland AED registry (www.marylandaedregistry.org), received and approved 399 public access AED applications this fiscal year. There are 8,545 locations in the state have AEDs, a total of 16,963 AEDs, and there have been 285 (23.1%) successful AED outcomes out of 1,232 reported incidents. Success is measured by the patient having a return of pulse at EMS arrival, during EMS arrival, or during EMS transport. Of the overall arrests, 667 were witnessed, and 209 of those witnessed arrests regained a pulse at the time of EMS arrival. The AED program resulted in a 31.3% save rate for cardiac arrests when witnessed by a bystander.

PUBLIC EDUCATION AND PREVENTION

Public education is a core mission of the EMS system. Health care personnel, including EMS clinicians, are often a trusted source of valuable educational information. Further, as visible members of the community, EMS clinicians often have access to people and awareness of circumstances that other elements of the health care system routinely do not. They are often in positions to identify prevention needs, understand potentially effective strategies, and instill prevention mindedness. Each of the specialty centers that serve as pinnacles of systems of care is obliged to engage in public educational initiatives

EMS for Children Grants

Maryland EMSC State Partnership Grant

The Maryland EMS for Children program has received an EMS for Children State Partnership Grant from the Maternal and Child Health Bureau/Health Resources Services Administration for 22 consecutive years. This funding supports the integration of pediatric readiness into hospital emergency departments and EMS across Maryland, aiming to meet federal EMS for Children Performance Measures and the Maternal Child Health Core Performance Measure. In alignment with Maryland EMS Vision 2030, the grant now focuses on pediatric readiness in emergency departments and EMS agencies, pediatric disaster preparedness, and family advocacy to expand the Right Care When It Counts initiative. To advance pediatric readiness, the EMSC staff leads three Pediatric Champion teams: EMS, emergency department nursing, and emergency department physicians.

Family Advisory Network Council / Right Care When It Counts

The Maryland EMS for Children program and the Family Advisory Network (FAN) Council annually recognize children and youth in Maryland who have demonstrated "the right steps to take" in an emergency or preparedness for an emergency. In May, three children and youth were recognized for their actions to assist another citizen during an emergency or to provide education to other children and youth on what to do when an emergency happens. This year, the Right Care When It Count awards were presented in Regions III and V to children and youth for calling 9-1-1 and providing care until paramedics arrived and for starting CPR after a sudden emergency. The Right Care criteria were updated by the FAN Council for 2025 to simplify the nomination process. FAN Council members attended the EMS conferences to promote Right Care nominations, which are now open year-round as of June 2025.

Child Passenger Safety and Occupant Protection Healthcare Project

Funded by the Maryland Highway Safety Office, the Child Passenger Safety (CPS) and Occupant Protection Healthcare Project aim to reduce the number of injuries and deaths from vehicle crashes and related incidents in Maryland.

Educational efforts this year focused on proper and consistent use of seatbelts and car safety seats, for passengers and caregivers. A new webinar addressed maternal and fetal safety on the road, emphasizing restraint use and best practice emergency medical care for pregnant women in vehicle crashes. The CPS project encouraged EMS clinicians and hospital staff to become certified

CPS Technicians by offering free event registrations and educational credits. The project provided limited car seats and specialized restraints to healthcare clinicians to support safe transport and overall community safety: 16 hospital nurseries or NICUs and 23 emergency departments obtained car seats for families with financial need; healthcare providers treating children with special needs could borrow adaptive restraints through this project; and, the project provided "all-in-one" car seats to EMS agencies for transporting children in non-ambulance vehicles, when the child is not the patient.

This year, EMSC and the CPS project, in collaboration with Media Services, developed a new resource on safe ambulance transport that emphasizes the correct use of harnesses on ambulance cots. CPS project staff continued to assist at community car seat check-up events and teach in the national CPS Technician courses throughout Maryland. Daily outreach included advising hospital staff on safe transport of vulnerable children, conducting regional and national education programs for hospital and EMS clinicians, and distributing multilingual materials focused on safe travel for all ages, with an emphasis on children.

The CPS project leads public education on the dangers of leaving children alone in vehicles. Temperature displays are used to illustrate how quickly interior temperatures of vehicles rise to deadly levels to convey the critical message, "Never Leave a Child Alone in a Vehicle" or "Where's the Baby?". Six of these outdoor displays are strategically positioned in regions across the Maryland for use at community health and safety events.

The CPS Healthcare Project partners closely with Maryland Kids in Safety Seats (MD Dept of Health), Maryland Highway Safety Office, Safe Kids Maryland and CPS instructors statewide on child-centered activities. An additional ongoing partnership with Crash Core/Impact Research. in Ellicott City, Maryland, conducts educational workshops and on-scene crash tool development, with the goal of enhancing EMS clinician knowledge, skills, and abilities to assess potential occupant injuries at crash scenes and plan optimal transport and treatment.

Bike Safety Project

Funded by the Maryland Department of Transportation's Maryland Highway Safety Office (MHSO) for seven years, the Bike Safety Project (BSP) team coordinated bike safety marketing through new educational materials, social media communication, and dissemination of information to new and existing partners to include EMS, Fire, Rescue, and Emergency Department professionals in Maryland. During the project period, EMSC was able to distribute over 7,000 bike helmets to children, youth, and parents through local Safe Kids partners, trauma program managers, and Pediatric EMS Champions. Tabletop and Banner displays were developed and distributed across the state to provide interactive and static bike safety messaging. This year, Safe Kids Worldwide provided Maryland with a mini grant for helmets that were distributed with educational information to over 80 families at the Maryland State Firefighters Association Annual Convention and Conference in June. Through Safe Kids Maryland® and Risk Watch Maryland outreach, the bike safety education will continue with social media and in-person training to promote bike safety across Maryland communities.

Safe Kids Maryland® and Maryland RISK WATCH®.

Coordinated by Maryland EMSC, MIEMSS is the lead agency for the Safe Kids Maryland® state coalition. This year, Safe Kids Maryland® hosted statewide educational meetings with seven local Safe Kids coalitions and 15 community partners. EMSC, in collaboration with the Maryland State Firefighters Association (MSFA), Office of the State Fire Marshal, and the Maryland Fire and Rescue Institute, supported the Public Fire & Life Safety Educators Seminar held in March 2025. The Seminar focused on Injuries at Home and innovative programs across Maryland for local community risk reduction outreach.

Safe Kids Maryland® maintains membership in the Maryland division of the American Trauma Society, Maryland State Emergency Nurses Association (ENA), Partnership for a Safer Maryland, and the Maryland Trauma Center Network (TraumaNet). This year, EMSC facilitated the distribution of educational materials and resources for the Maryland Highway Safety Office grants. This effort targeted rural, suburban, and urban communities in Maryland. These efforts ensure that consistent injury prevention information is shared with MIEMSS' Regional Advisory Councils and PEMAC.

Maryland Risk Watch®, led by EMSC and the Family Advisory Network (FAN), collaborates year-round with the Office of the State Fire Marshal, the MSFA Fire Prevention and Life Safety Committee, and other significant jurisdictional partners to provide resources that promote injury prevention. The "Steps to Safety" program provided 10 interactive displays at the MSFA Annual Convention and Conference in June. These displays addressed various high-risk injuries and provided information for children, caregivers, and local injury prevention advocates, along with resources to take back to their communities. In addition, the FAN Council offered a standard babysitting course for youth at the Convention.

Maryland Medical Order for Life-Sustaining Treatment (MOLST)

The Maryland Medical Order for Life-Sustaining Treatment (MOLST) is a portable and enduring medical order form covering options for cardiopulmonary resuscitation and other life-sustaining treatments. The medical orders are based on a patient's wishes about medical treatments. The Maryland MOLST order form:

- Consolidates important information into orders that are valid across the continuum of care
- Standardizes definitions
- Reminds patients and clinicians of available treatment options
- Increases the likelihood that a patient's wishes regarding life-sustaining treatments are honored throughout the health care system

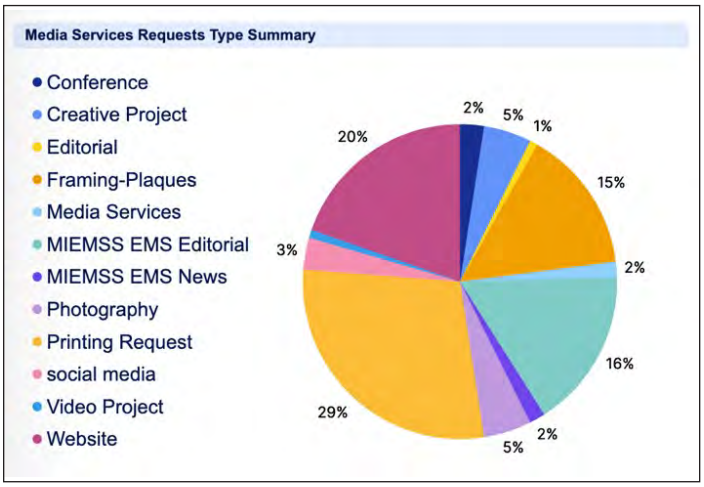
The order form may be signed by a doctor, nurse practitioner, or physician assistant. Every time a form is completed, a copy must

be given to the patient or authorized decision maker within 48 hours, or sooner if the patient is discharged or transferred. The MOLST form is valid across the continuum of care, and is to be honored by physicians, nurses, and other health care providers, as well as EMS clinicians.

In the absence of a valid MOLST form or EMS/DNR Order, patients calling for ambulance service who are unable to communicate their health care wishes will receive restorative interventions under the statewide *Maryland Medical Protocols for Emergency Medical Services*. The MOLST form can be downloaded from the Maryland MOLST site: https://marylandmolst.org/pages/MolstForm.html.

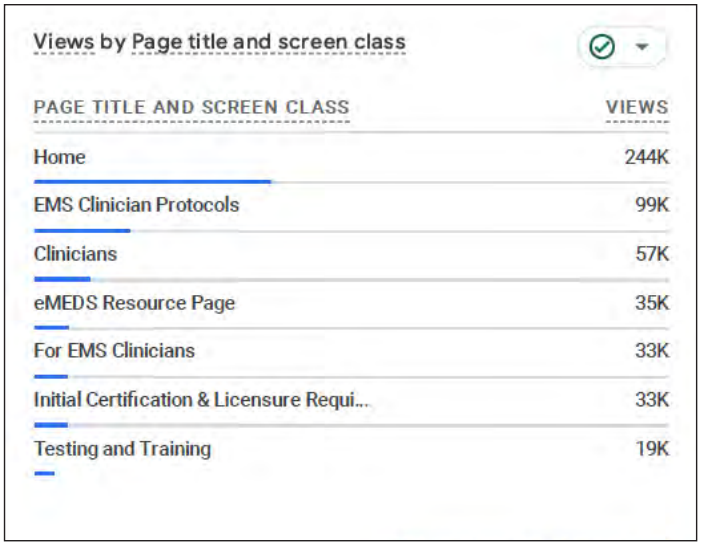
Media Services and Public information

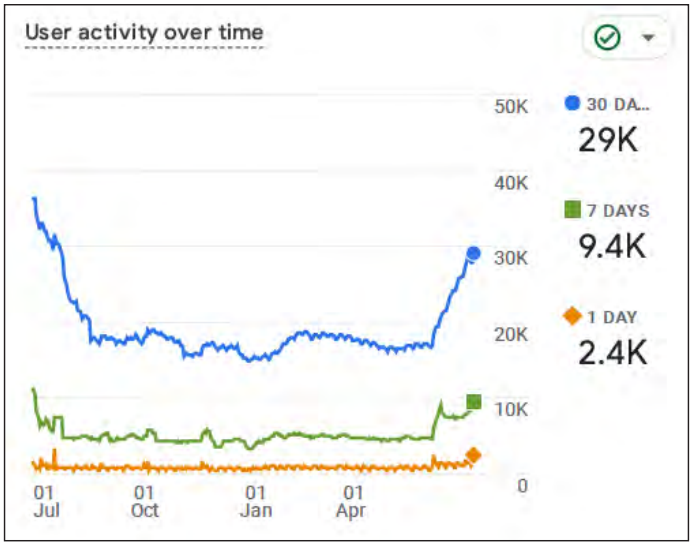
The MIEMSS Media Services and Public Information department manages communications and outreach to both the public and EMS stakeholders across Maryland. The team develops and distributes press releases, educational campaigns, newsletters, and digital content to share timely, accurate information about the statewide EMS system. The department creates multimedia products such as videos, graphics, and training materials to support clinician education and public awareness. Media Services provides communications support for conferences, recognition events, and statewide initiatives, while ensuring consistent messaging within MIEMSS and among partner agencies. In times of crisis or large-scale incidents, the department plays a critical role in disseminating urgent public information and supporting emergency communications needs. Products of MIEMSS media services include the MIEMSS website, the EMS Newsletter, *The Maryland Medical Protocols for Emergency Medical Services* iOS and Android app, and Public Service Announcements and other information through social media and other avenues.



MIEMSS Publications

Website: The MIEMSS website (miemss.org) continues to serve as the central online hub for Maryland's emergency medical services system. It provides clinicians, hospitals, and the public with access to EMS regulations, protocols, and clinical resources, as well as licensing and certification information. The website supports over 186,000 active users with over 660,000 page views per year and highlights statewide EMS initiatives such as pediatric care, injury prevention, and public health preparedness, and offers quick links to programs including EMSC, trauma, and regional operations. This online hub features training information, employment opportunities, safety campaigns to support grants and initiatives and communication tools that ensue Maryland's EMS clinicians, partners and the public can stay informed, connected and supported.





INFORMATION SYSTEMS

MIEMSS creates, manages, and leverages interconnected applications and information sources to convert data into usable content for the improvement of the EMS system. In managing these connections, MIEMSS focuses on the enhancing system usability, data reliability, and security.

EMS Surveillance Measures

MIEMSS maintains several EMS system surveillance priorities based on routine data review, customer requests, and research outcomes. Throughout FY 2025, hospital yellow alert demand was monitored at state, regional, jurisdictional, and hospital-specific levels through the online County Hospital Alert Tracking System (CHATS) for real-time system response capabilities as well as historical trends. The Emergency Department Advisory System (EDAS) will replace the CHATS legacy system in August 2025. This monitoring, coupled with hospital strategies that address the high demand for emergency department services, helps improve the availability of this vital service system wide. Yellow alert data also form one measurement in the Maryland Department of Health's (MDH) syndromic surveillance programs..

The Helicopter Utilization Database (HUD) accounts for all helicopter requests for transport independent of actual transport mode outcome, and permits requesting EMS managers and medical directors to conduct case reviews. HUD data analysis supports MIEMSS' efforts to utilize aerial transportation for only the most severe, time-critical incident scene patients statewide.

Since FY 2017, EMS interventions involving naloxone administration for opioid overdose cases have been consistently recorded and relayed to both MDH and Maryland's Office of Overdose Response. This non-confidential data, in conjunction with other valuable resources, serves as a crucial tool in tracking opioid overdose trends and devising effective strategies to address this unrelenting crisis.

@Hospital Ambulances (@HA) System Evolution

The At Hospital Ambulances (@HA) app continued to serve as a web-based application displaying ambulance activity at each of the Maryland hospitals utilized by jurisdictional EMS clinicians during FY 2025. The Data Analysis and Information Management (DAIM) department had developed this application to work on desktop computers and mobile devices, including iOS, Android, and Windows mobile devices. The @HA application displays information about ambulances located at the hospitals, including the hospital name, number of ambulance units, alert status, and length of stay based on data received from the EMSOP's Computer Aided Dispatch (CAD) Systems.

Emergency Department Advisory System (EDAS) Development

As part of the broader emergency department monitoring system modernization initiative, MIEMSS continued developing, incorporating, and expanding the original @HA functionalities that is evolving into the comprehensive Emergency Department Advisory System (EDAS).

EDAS development, completed in July 2025 for implementation in August of 2025, represents a comprehensive, web-based solution designed to use inputs from computer-aided dispatch systems via ImageTrend™ and the Maryland Emergency Medical Resource Alert Database (MEMRAD) to provide an objective overview of the state's EMS system with a focus on emergency department capacities. Unlike CHATS, which provided subjective assessments of emergency department "busyness," EDAS will convey objective assessments based on emergency departments' patient census relative to pre-determined capacities vetted with emergency department leaders at each facility.

MIEMSS collaborated extensively with emergency department leaders and EMS stakeholders to develop and refine EDAS capabilities. The system incorporates enhanced ambulance tracking functionality, displaying both ambulances currently located at hospitals and those en route to each facility. Additionally, EDAS includes filtering capabilities that allow system users to focus on emergency departments of routine interest, providing EMS clinicians with improved decision-making tools for patient destination choices.

Trauma Registry

The Maryland Trauma System focuses on a multidisciplinary approach to care for injured patients. The Maryland Trauma Registry (MTR) supports that initiative. All Maryland designated trauma centers abstract and enter data into the MTR. This data entry allows for a streamlined process of patient identification and injury definition. The MTR provides foundational support for the continuum of high-quality care across Maryland by producing standardized and consistent data to be used for the following purposes:

- public health surveillance
- data analysis
- research assistance
- performance improvement
- injury prevention
- education and best practice dissemination
- outcome assessment
- trauma center system development

Additionally, the trauma centers submit their data to the National Trauma Data System for trauma benchmarking across the United States.

Maryland Emergency Medical Resource and Alerting Database (MEMRAD)-NG

The Maryland Emergency Medical Resource Alerting Database (MEMRAD) serves as Maryland's statewide health and medical alert and resource tracking system. Administered by MIEMSS, this system connects hospitals, EMS, Public Health, Emergency

Management and other local, state and federal partners for real-time information sharing. During FY 2025, MIEMSS deployed the Next Generation (NG) upgrade of the legacy MEMRAD system bringing about an advanced alerting and notification system, and resource tracking and information sharing system. The new MEMRAD-NG integrates seamlessly into the Emergency Department Advisory System (EDAS), and has additional functionality which will be rolled out over the next year.

Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE) and eMEDS® Integration Project

MIEMSS' Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE) interface links EMS patient encounter data with other statewide healthcare data shared with ESSENCE. This combination of EMS, Hospital, Primary Care, Pharmacy, and other data sources gives public health partners enhanced situational awareness for potential disease outbreaks and epidemics.

Maryland Traffic Records Assessment

In the fall of 2024, Maryland volunteered for a National Highway Traffic Safety Administration (NHTSA) peer review assessment of our management and use of motor vehicle crash-related data. Two EMS-related programs contribute essential data to our state's injury surveillance system as defined by NHTSA. This includes all traffic-related etiology records entered in eMEDS® or the Maryland Trauma Registry. Of the 46 assessment questions pertaining to MIEMSS programs, 43 received a "Meets Advisory Ideal" rating, one received a "Partial" rating, and two received a "Does Not Meet" rating. These findings are exceptional when compared to other state assessments. One of the key findings found under assessment "Strengths" was that Maryland continues to support and improve all the components of a comprehensive statewide injury surveillance system, and Maryland has a long history of integrating multiple transportation safety-related datasets.

RESEARCH AND EVALUATION

Several intrinsic characteristics of Maryland's EMS system make it well suited for conducting meaningful research. Among them are inclusive patient care records, linkages with hospital records associated with systems of care, collaborative potential with prominent academic institutions, engaged EMS physician scholars, sophisticated EMS leaders, and innovative spirit. However, much of the opportunity for generating new knowledge about EMS systems and care remains under-developed.

Most evaluation of the EMS system occurs at local levels with varying degrees of sophistication and intensity. Statewide evaluations tend to focus on processes, with limited attention to relevant outcomes. Cardiac arrest outcomes are a notable exception. eMEDS® can be queried but is often complex and cumbersome.

State law requires the EMS Board to regularly review, and study issues related to emergency medical services, and the MIEMSS Executive Director is responsible for coordinating EMS-related research and education programs. Whenever these studies or programs involve people as research participants, MIEMSS ensures the research follow all federal and state rules, as well as strict ethical standards, unless the project is specifically exempt under federal research guidelines. Through the agency's Data Access Committee all data requests are expedited efficiently and accurately while always protecting patient and clinician confidentiality.

Data Confidentiality

MIEMSS maintains or has access to eight confidential databases used to ensure the delivery of quality EMS care. The Data Access Committee was formed to ensure that all data and requests for information are expedited efficiently and accurately while ensuring patient and clinician confidentiality at all times.

Collaborative Research

Maryland ambulances carry diltiazem to treat patients experiencing rapid heartbeat due to atrial fibrillation or atrial flutter. However, diltiazem has the potential to cause low blood pressure. Pil E, Levy M, Chizmar T, Troncoso R, Garfinkel E, Margolis A. Efficacy and safety of prehospital diltiazem. *J Prehospital Emergency Care*. 2024; 2024; 28(7): 920-927. https://pubmed.ncbi.nlm.nih.gov/38436598/

MIEMSS-Research Interest Group (RIG)

The Maryland Research Interest Group (RIG) is composed of members from MIEMSS, the National Study Center (NSC), University of Maryland Baltimore, Johns Hopkins University and other partners including, but not limited to, higher education institutions (including JHU), EMS Operational Programs, regional partners from Washington DC and Northern Virginia. Over the last year, MIEMSS-RIG members have submitted a manuscript for publication related to cardiac arrest and epinephrine use in MD. The data for a second manuscript is undergoing analysis, and it has to do with transfer of care times. The collaborative effort is extended by the involvement of NSC members serving on several MIEMSS committees to help advance the agency's mission for the citizens of the State of Maryland.

National Study Center for Trauma and EMS

The Charles "McC." Mathias, Jr., National Study Center for Trauma and EMS (NSC) was established at the University of Maryland by the US Congress in 1986. In 2009, the University of Maryland School of Medicine (UMSOM) designated NSC as part of the Shock, Trauma and Anesthesiology Research Organized Research Center (STAR-ORC) to further basic, translational, and clinical studies in injury research.

Research Activities

The NSC experienced robust research awards in FY 2025. Dr. William Teeter, Director of NSC, was awarded $1.5 million from the United States Air Force (USAF) for his proposal "Triage Clinical Decision Support for Prolonged Field Care Scenarios"; a study of thousands of trauma patients to develop CDS tools to assist with triage and identification of patient who need Life Saving Interventions (LSI). Dr. Teeter also received $69,000 from the USAF for the "A Rapid, Automated Method for Determining Lung-to-Periphery Oxygenation Delay" study. Dr. Roumen Vesselinov was awarded $250,000 from the District of Columbia Highway Safety Office (DCHSO) to conduct their 2025 DC Seatbelt Study. Dr. Vesselinov also received $162,000 from the Maryland Highway Safety Office (MHSO) to conduct their FY 2025 Occupant Protection-Seatbelt Survey. Dr. Stein was awarded $597,000 from the National Highway Traffic Safety Administration (NHTSA) for the Crash Injury Research and Engineering Network (CIREN). Dr. Kartik Kaushik was awarded $260,000 from MHSO for the Traffic Records Program FY 2025. NSC faculty were awarded more than $2.8 million in FY 2025.

In 2024, the NSC joined the Linking Investigations in Trauma and Emergency Services Network (LITES - https://www.litesnetwork.org/) as a study site. LITES is a network of medical professionals, prehospital providers, and emergency medical services joining to perform injury care and outcomes research. Its goal is to inform clinical practice guidelines and update the existing standards for the care of traumatic injuries. This network carries out a variety of research projects focused on trauma, blood and whole blood, traumatic brain injury, breathing tubes, airway management, and Hemorrhagic shock. In collaboration with the Maryland State Police Aviation Command, the NSC will be a clinical site for the CAlcium and VAsopressin Following Injury Early Resuscitation Trial (CAVALIER). CAVALIER will evaluate administration of prehospital calcium and in-hospital administration of vasopressin in subjects at risk of hemorrhagic shock requiring blood transfusion and early operative procedures during the early in-hospital phase of care. The study will run for approximately two years.

NSC, in conjunction with R Adams Cowley Shock Trauma Center (RACSTC), is a leading participant in the Crash Injury Research and Engineering Network (CIREN), funded by the National Highway Traffic Safety Administration (NHTSA). During the 2024 to 2025 contract year, 100 motor vehicle crash occupants have been consented. Of these, 27 have been enrolled and undergone a comprehensive investigation and review. This year CIREN initiated motorcycle crash investigations and the NSC CIREN team consented 23 cyclists. In February 2025, the NSC CIREN team hosted the annual CIREN meeting. CIREN teams from 5 other universities around the country came to UMB for 2 days of meetings and training with representatives from the Human Injury Research Division of NHTSA. The use of CIREN cases in biomechanics presentations at the RACSTC is integral, providing valuable insights into crash injury mechanisms and informing improvements in vehicle safety and trauma care.

In 2024, NSC received a grant from NHTSA CIREN Research for a project titled "Transportation Data Linkage and Cost of Injury Analysis" and it was completed by September 2024. NSC made a presentation of the preliminary results from this study at the Traffic Records conference in San Diego, CA in August 2024. A paper based on the final results from the study was accepted for presentation at the Association of Advancement of Automotive Medicine (AAAM) conference in Indianapolis, IN. A peer-refereed article "Multifactor Analysis of Cost of Injury Using Classification and regression Trees" was accepted for publication in the *Traffic Injury Prevention journal* in June 2025. NSC authored another peer-refereed article based on analysis of drug recognition experts' data from Maryland in the same journal in May 2025.

In FY 2025, NSC continued developing the Injury Outcomes Data Evaluation System (IODES), with the goal of producing a census of injury data in the state, including causes of injuries, treatments, and long-term consequences. The NSC has secured access to 10 years of Maryland Health Services Cost Review Commission (HSCRC) data (2016-2026). This data will be linkable to the existing datasets in IODES as research projects permit. The NSC has also secured access and purchased 6 years of Electronic Maryland EMS Data System (eMEDS®) data from ImageTrend®, which will also be linkable to IODES as permissible via IRB authority. With this new access to HSCRC and eMEDS® data IODES will have the capability to produce a census and yield a complete picture of all injuries, including penetrating trauma such as gunshots and stabbings, and blunt trauma such as falls, and other injury producing incidents in the state of Maryland.

As part of IODES, multiple members of the NSC staff continued supporting the development of the Center for Innovation in Clinical and Translational Shock and Injury Research (CISIR). CISIR is a platform where the data under IODES will be made available to researchers with the appropriate approvals for their study from an Institutional Review Board and partner data sharing agencies. Currently, CISIR has built a repository of data from the University of Maryland Medical System (UMMS) Electronic Health Records (EHR) that includes detailed data on patient admissions to the UMMS systems for trauma and emergency room visits.

In FY 2025, NSC staff successfully completed more than 30 traffic records data requests for MHSO for different requestors.

Findings from the 2024 Maryland Front Seat Belt Use Project conducted by the NSC were presented to MHSO in August 2024 and later at the Occupant Protection and Distracted Driving Emphasis Area Team Meeting of the MHSO. The usage rate on all roadways for both passenger cars/SUVs and pick-up trucks was 90.6% in 2024. Analysis has commenced on 2025 statewide restraint usage study, conducted in June 2025.

In 2024, NSC finalized the findings of the comprehensive report on drug use pattern analysis, originally funded by the Maryland Highway Safety Office. The study aimed to merge Drug Recognition Expert (DRE) data with the Maryland Citation database using drivers' full names. This linkage enabled an in-depth analysis of citation data in relation to positive drug screen results,

including the identification of repeat offenders. Additionally, GIS maps were created to pinpoint the locations of DRE cases and crashes, highlighting relevant driver characteristics. This approach helped identify areas for targeted DRE outreach to prevent situations where DRE officers were needed but unavailable.

The NSC has continued to do additional analysis on the Drug Recognition Expert data from the Maryland State Police. This work was initially presented at the 2024 TRB Conference. In FY 2025 NSC submitted a paper entitled "An Analysis of Drug Recognition Expert Evaluations and Comparisons with Police Issued Citations in Maryland, 2017-2021." which was accepted for publication in *Traffic Injury Prevention Journal*.

In collaboration with MHSO and Washington College, NSC developed an experimental composite transportation indicator for the State of Maryland. The results were used for the creation of Maryland's Public Participation and Engagement (PPE) ORIOLE Application presented at the Traffic Records Forum in Boston, 2025.

The NSC is responsible for the extraction of data from the R Adams Cowley Shock Trauma Registry (STCTR) for research protocols with appropriate permissions. In FY 2025 NSC has written over 25 SQL based queries to the STCTR. Some topics this past year included VTE prophylaxis, intubation in patients with metabolic acidosis, AI and trauma CAT scans, THC and TBI in older patients, REBOA and abdominal penetrating trauma and creatine kinase and compartment syndrome in trauma patients. The STCTR is often utilized to generate patient population estimates for research study proposals to ensure sufficient patients will be admitted meeting study inclusion and exclusion criteria.

The NSC launched several self-funded projects looking into a diverse array of cutting-edge traffic safety research areas. The findings from the studies were presented at multiple conferences, including ATSIP (Association of Transportation Safety Information Professionals) Traffic Records Forum in Boston, 2025 and the Transportation Research Board Annual Meeting in Washington, DC (January 2025). Presentations included the creation and qualities of the composite transportation indicator, transportation data linkage and cost of injury analysis, and analysis of traffic stops in Maryland. NSC started a new line of research related to the Artificial Intelligence (AI) analysis related to transportation related injuries. Initial results of the study were presented at the MHSO Summit in May 2025.

In 2024, the NSC produced a literature review as well as an update to the Motorcycle Crashes 360° Approach report. The literature review primarily focused upon compiling the findings of available studies that analyze the effectiveness of individual pieces of protective equipment in mitigating injury during a motorcycle crash. Literature relating to the impact of helmet legislation in reducing motorcycle crash fatalities was also studied and included. The Motorcycle Crashes report consisted of an analysis of Maryland motorcycle crash data spanning the past five years with the aim of deriving trends and discerning the impacts of various contributing factors. In January 2025, these deliverables were presented in a motorcycle focus group meeting in collaboration with the Maryland Highway Safety Office.

Analytical Support

In addition to in-house preparation of peer-reviewed research papers, NSC staff offer grant proposal, abstract, and manuscript preparation support, including technical writing, research design, and data analysis for university, hospital, and trauma center researchers. Partner agencies and the public can submit a specific data request to NSC epidemiologists and data analysts using the data request form on NSC's website (https://issomweb02.som.umaryland.edu/NSCTrauma/NSCData.aspx). NSC staff members were instrumental in the publication of manuscripts on various trauma and injury related topics, such as acute pancreatitis, influence of lower extremity fracture fixation on neurologic outcomes, and anticoagulation in emergency general surgery.

NSC also offers comprehensive statistical support to various research groups at UMB, ranging from Trauma Surgery, Critical Care Medicine, Acute Care Surgery, the Department of Anesthesiology, Precision in Medicine and Engineering Research Laboratory (PRIME-AI), and the Lung Transplantation Survival Research. NSC has authored and co-authored 11 peer-refereed articles during this period, including publications in the Journal of Trauma and Acute Care Surgery, Journal of Shock, American journal of Emergency Medicine, etc. Additionally, NSC extends its expertise to research projects funded by esteemed organizations like the National Institutes of Health (NIH), US Department of Defense, and US Army Medical Research, ensuring a robust and data-driven approach to cutting-edge research.

LEGISLATION AND REGULATION

Maryland Education Article, §13-501 through §13-517 provide the statutory basis for the statewide EMS system and the Maryland Institute for Emergency Medical Services Systems (MIEMSS). The Code of Maryland Regulations (COMAR) Title 30 provides the regulatory framework for MIEMSS to fulfill its responsibilities for the EMS system. Regulations may be promulgated and revised in accordance with the Administrative Procedure Act, State Government Article §10-101 through §10-117. State agency regulations undergo structured review every eight years.

Attorney General's Office

The Attorney General's Office (OAG) provides legal advice to the EMS Board, the Statewide EMS Advisory Council, and MIEMSS in connection with all aspects of EMS, the ongoing administrative functions of the agency, and the regulation of commercial ambulance services. OAG supports MIEMSS in promulgating and implementing the agency's regulations, procurement, personnel matters, and contracts, including technology initiatives, as well by assisting in the administration of state and federal grant programs.

OAG helps to ensure the safety and reliability of the Maryland EMS system by advising the MIEMSS Office of Integrity on matters concerning EMS clinician compliance and prohibited conduct. It also serves as the administrative prosecutor for cases involving allegations of prohibited acts by EMS clinicians before the EMS Provider Review Panel, the EMS Board, and the Office of Administrative Hearings.

OAG provided legal advice to the State Office of Commercial Ambulance Licensing and Regulation (SOCALR) in compliance matters and questions of regulatory interpretation, and provided support to the Commercial Ambulance Services Advisory Committee. This year, OAG assisted SOCALR with amending regulations to expand access to care in Maryland by updating the staffing standards for advanced life support ambulances. Assistant Attorneys General helped the Office of Care Integration to monitor compliance requirements of specialty referral centers and provided advice on the Maryland Public Access Defibrillation program and the AED Registry.

OAG advised the Office of EMS Clinician Services on regulatory amendments to update the requirements for licensure, certification, and renewals, and implementing new laws on the restricted use of social security numbers in the licensure process.

OAG assists MIEMSS in its commitment to public education and research by providing advice and support regarding data and information access. Assistant Attorneys General provide advice on sharing of data and information with the public and other EMS stakeholders, while maintaining patient confidentiality. OAG also negotiates data use agreements to support research projects using EMS data.

OAG also supports Maryland Orders for Life-Sustaining Treatment (MOLST), which provides patients with the legal means for communicating medical care wishes to EMS and other health care professionals. The public can download the MOLST form from the MIEMSS website, and MIEMSS provides hard copies for those individuals without internet access.

Office of Government Affairs

The MIEMSS Office of Government Affairs (OGA) serves as the agency's primary liaison to the executive and legislative branches of State government. Through the cultivation of collaborative partnerships with relevant stakeholders, the OGA is dedicated to developing and advancing effective statutory and regulatory policies in support of all components of the statewide EMS system, the emergency care system, and Maryland's healthcare system as a whole.

2025 Legislative Report

The 2025 legislative session of the Maryland General Assembly convened on January 8, 2025, and adjourned on April 7, 2025. During this time, the House and Senate considered hundreds of bills, including those impacting Maryland EMS. Here are four key EMS-related bills that passed during the session:

HB 1131 – Public Health – Buprenorphine – Training Grant Program and Workgroup. This legislation (1) establishes a Buprenorphine Training Grant Program (Program) to assist EMS Operational Programs with offsetting the cost of training paramedics to administer buprenorphine, (2) includes this Program as an authorized use of funding from the Opioid Restitution Fund, and (3) requires the Maryland Office of Opioid Response to convene a workgroup to study access to buprenorphine in the State.

HB 1131 includes a provision that requires the Governor to include in the annual budget bill an appropriation of at least $50,000 from the Opioid Restitution Fund for the Program. Based on projected training costs and the amount of this annual appropriation, the number of paramedics to be trained to induce buprenorphine therapy could be achieved in four years. This, of course, assumes there is interest among EMS Operational Programs in conducting and arranging the education and among paramedics in receiving it.

MIEMSS estimates that it would cost approximately $500 to train each paramedic, or $200,000.

HB 246 / SB 205 – Human Services – Adult Protective Services. This legislation specifies that certain provisions of law relating to confidentiality do not prohibit the disclosure of certain information by state or local government employees or the United States if the officer or employee is responsible for conducting an adult protective services (APS) investigation. It also expands the definition of "health practitioner" for the purposes of mandatory APS reporting, to include cardiac rescue technicians, emergency medical technicians, and paramedics. Additionally, the bill adds calls to the statewide reporting hotline administered by the Department of Human Services as a reporting method. While the bill generally goes into effect on October 1, 2025, the mandatory reporting requirement for EMS clinicians will not go

into effect until July 1, 2026, which will provide the necessary time for MIEMSS to revise its clinical protocols to ensure the alignment of the relevant statute and associated regulations.

HB 1380 / SB 676. This legislation requires the Maryland Department of Health, in coordination with MIEMSS, to adopt regulations establishing minimum perinatal care standards for hospitals that meet or exceed the Maryland Perinatal System Standards for each hospital that provides obstetrical services, as well as for freestanding birthing centers. This legislation requires compliance with these standards as a condition of licensure.

SB 369 / HB 593. This legislation requires each branch of a county library system or the Enoch Pratt Free Library to place an Automated External Defibrillator (AED) in a prominent area, accessible to employees and library users, and comply with the requirements of the Maryland Public Access AED Program. By December 1, 2026, MIEMSS must report to the Senate Committee on Education, Energy, and the Environment and the House Ways and Means Committee on the libraries that registered AEDs in accordance with regulations adopted under §23-102.2 of the Education Article.

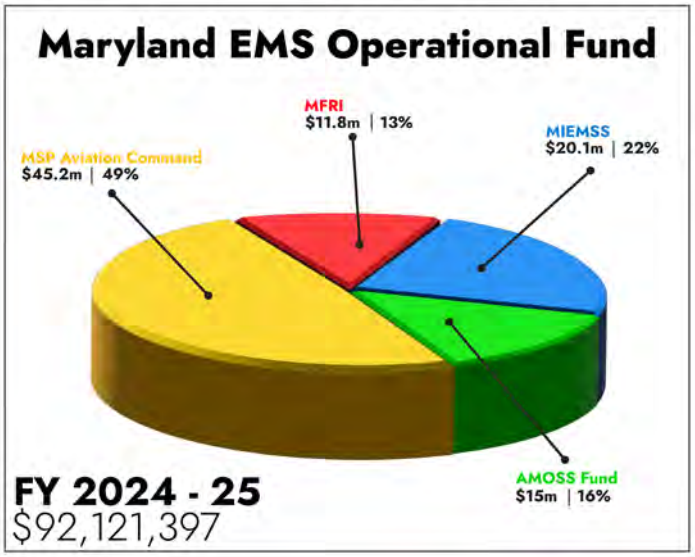
SYSTEMS FINANCE

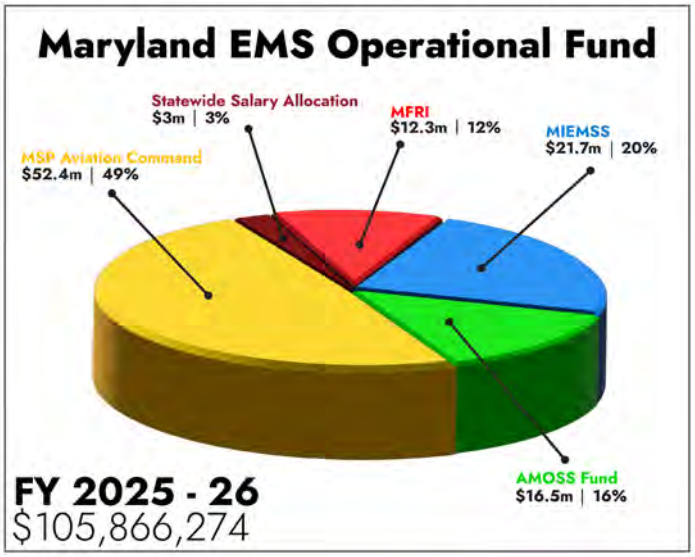
Funding for Maryland's EMS system is provided from a variety of sources. The Maryland Emergency Medical Services Operation Fund (MEMSOF) provides support for EMS partners in the state's budget, annually. The MEMSOF derives its revenue primarily from a $24.5 yearly motor vehicle registration surcharge and $7.50 moving violation surcharge. This fund supports the operations of Maryland Institute for Emergency Medical Services Systems (MIEMSS), the medically oriented missions of Maryland State Police Aviation Command (MSPAC), the Maryland Fire and Rescue Institute (MFRI), an operating subsidy to the R Adams Cowley Shock Trauma Center, and grants (Amoss Fund) to local jurisdictions for the purchase of EMS, fire, and rescue equipment and building rehabilitation.

Administration / Finance

The Procurement Unit obtains all necessary supplies, materials, and services required by MIEMSS to fulfill its mission in accordance with all applicable state procurement laws and regulations. The Procurement Unit is responsible for contract and grant administration.

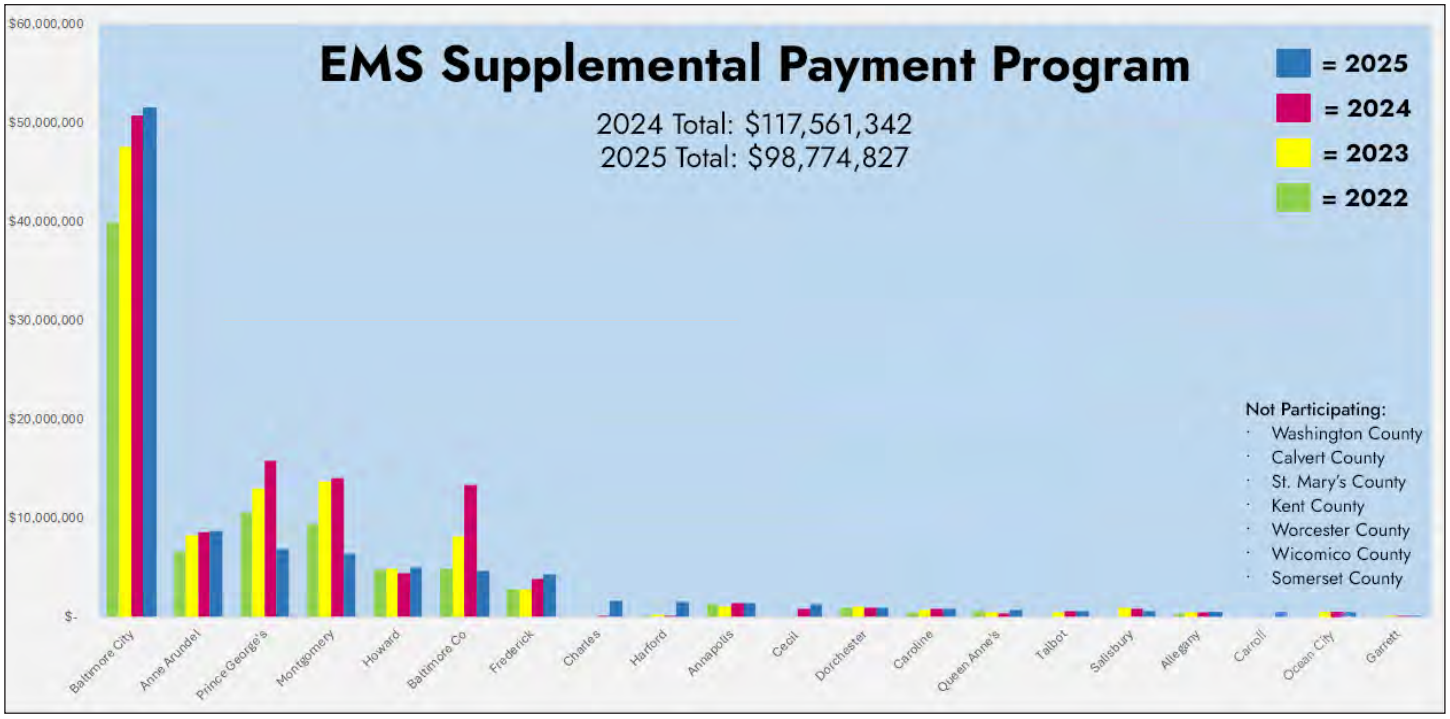
Administration's other responsibilities include inventory control, fleet management, travel services, and building operations and maintenance. In addition, Administration supports legislative and regulatory initiatives and provides financial data relevant to the legislative actions that support the Maryland Emergency Medical Services Operations Fund.





MIEMSS Grant Disbursements (FY 2025) by Region

	Cardiac Devices Grant for Fiscal Year 2025	ALS Training Funds	Emergency Dispatch Programs	Totals By Region
Region I	$28,930.00	$28,000.00	$0.00	$56,930.00
Region II	$59,812.00	$28,000.00	$26,501.00	$114,313.00
Region III	$130,956.00	$98,000.00	$2,500.00	$231,456.00
Region IV	$103,167.00	$67,998.00	$13,490.00	$184,655.00
Region V	$104,430.00	$78,000.00	$7,156.00	$189,586.00
Total	**$427,295.00**	**$299,998.00**	**$49,647.00**	**$776,940.00**



Emergency Service Transporter Supplemental Payment Program (ESPP)

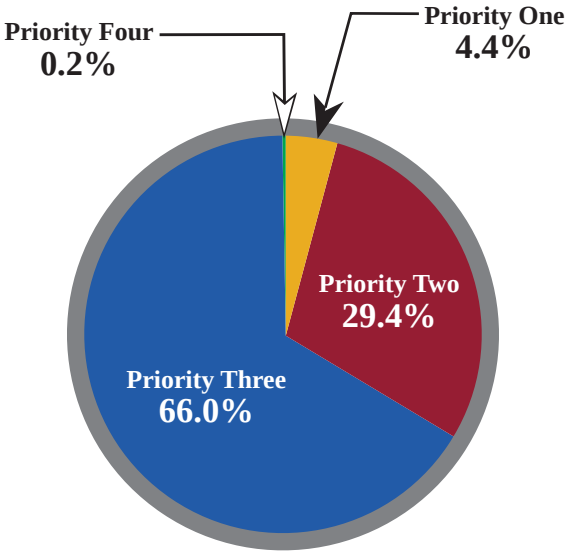
The Emergency Service Transporter Supplemental Payment Program (ESPP) is a Maryland Medicaid program that provides supplemental federal funding to eligible public emergency medical service (EMS) jurisdictions to offset the actual costs of ground emergency medical transportation provided to Medicaid recipients. This program, effective October 1, 2020, allows qualifying jurisdictions (JEMSOPs) to receive federal matching funds for their public expenditures on these services, thereby increasing their revenue and improving their capacity to serve Medicaid participants.

For FY 2025, the Maryland Emergency Service Transporter Supplemental Payment Program (ESPP) is allocating $98 million to public Emergency Medical Services (EMS) clinicians. The program leverages federal Medicaid funds to supplement provider payments, requiring no state general funds for the supplemental portion of the reimbursement.

MARYLAND EMS STATISTICS

Types of EMS Calls

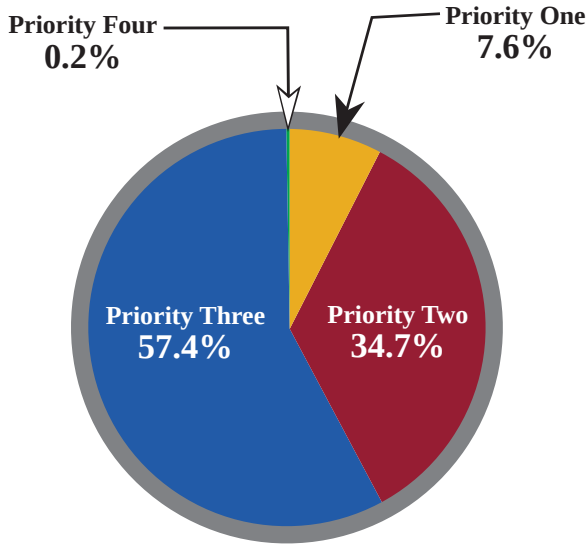
Patient Priority For Injury-Related Transports
Fiscal Year 2025



Source: electronic Maryland EMS Data System (eMEDS®)

Priority 1 *- Patient critically ill or injured (immediate / unstable)*
Priority 2 *- Patient less serious (urgent / potentially life-threatening)*

Patient Priority For Medical-Related Transports
Fiscal Year 2025

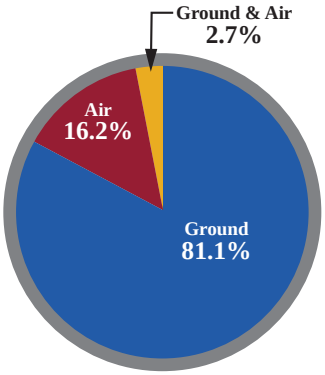


Priority 3 *- Patient non-urgent*
Priority 4 *- Patient does not require medical attention*

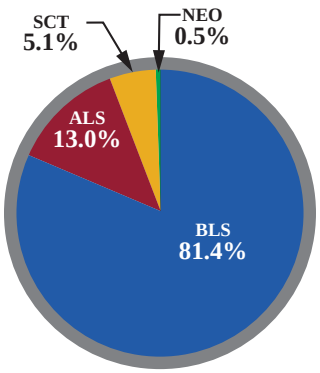
MARYLAND-LICENSED COMMERCIAL AMBULANCES

Maryland-Licensed Commercial Ambulance FY 2025 Statistics
Source: MIEMSS Commercial Ambulance Licensing System

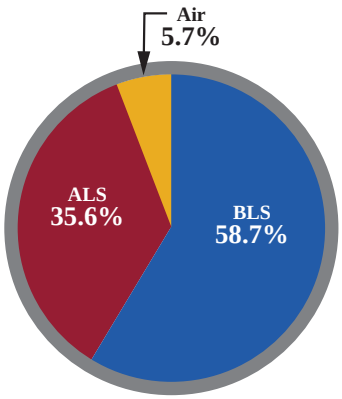
SOCALR-Licensed Services
n = 36



SOCALR Total Calls
n = 276,211



SOCALR-Licensed Vehicles
n = 492



CARDIAC ARREST REGISTRY TO ENHANCE SURVIVAL (CARES)

Cardiac Arrest Registry to Enhance Survival (CARES)
CY 2024 Registry Data

Demographic Information	Maryland	National
Mean Age (years)	64.4	63.1
% Males	60.3%	63.2%
% Females	39.7%	36.8%

Arrest Witnessed?	Maryland	National
Witnessed by Bystander	34.8%	37.5%
Witnessed by First Responder/EMS	12.9%	12.3%
Unwitnessed	52.3%	50.2%

Who Initiated CPR?	Maryland	National
Bystander	40.9%	41.9%
First Responder	25.0%	31.1%
Emergency Medical Services (EMS)	34.1%	27.0%

Who First Defibrillated the Patient?	Maryland	National
Not Applicable	71.0%	69.8%
Bystander	1.9%	1.7%
First Responder	4.4%	7.1%
Emergency Medical Services (EMS)	22.7%	21.3%

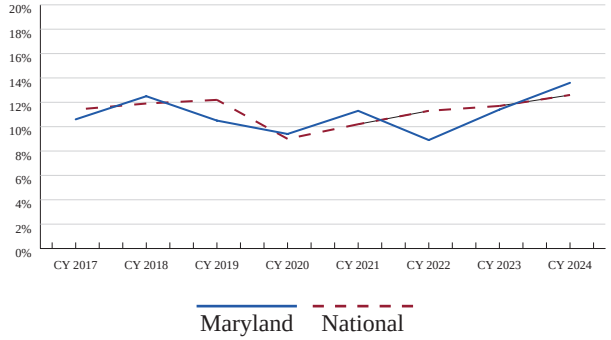
***Bystander Intervention Rates are calculated as follows:**

Bystander CPR: Arrests that occurred before the arrival of First Responders/EMS and that did not occur in a nursing home, health care facility, physician's office or clinic, in which CPR was initiated by lay persons, out of all arrests that occurred before the arrival of First Responders/EMS and that did not occur in a home/residence, nursing home, health care facility, physician's office, or clinic.

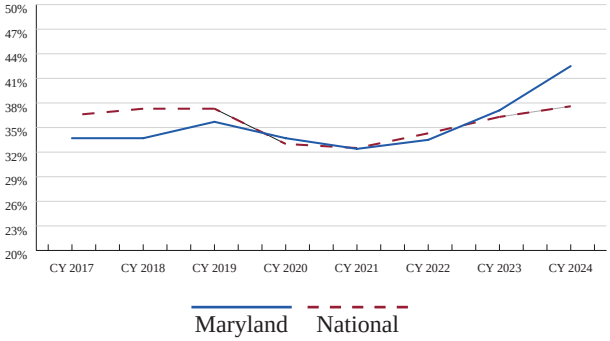
Public AED Use: Arrests that occurred before the arrival of First Responders/EMS and that did not occur in a home/residence, nursing home, health care facility, physician's office or clinic, in which AEDs were initially applied by lay persons out of all arrests that occurred before the arrival of First Responders/EMS and that did not occur in a home/residence, nursing home, health care facility, physician's office, or clinic.

Cardiac Arrest Registry to Enhance Survival (CARES)
CY 2017 through CY 2024 (Source: CARES Registry)

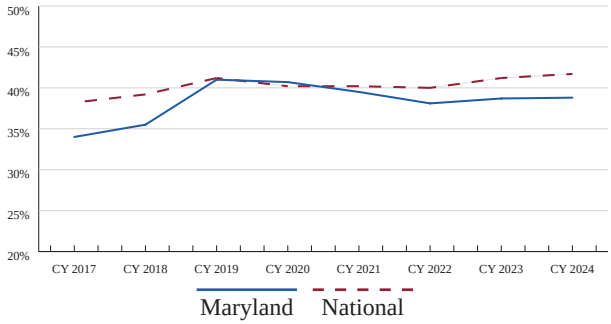
Maryland and National Public AED Use Rates



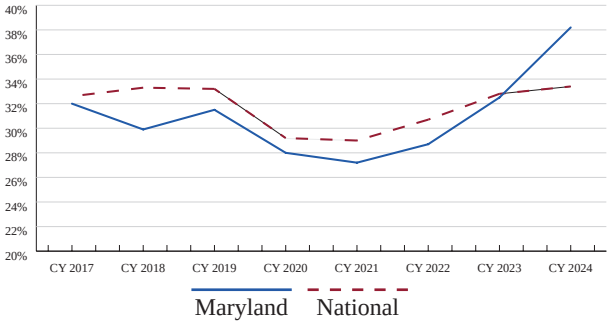
Survival Rates for Patients with Out of Hospital Cardiac Arrests With First Arrest Rhythms That Were Shockable and Witnessed by Bystanders and Bystanders Either Performed CPR and/or Applied AEDs



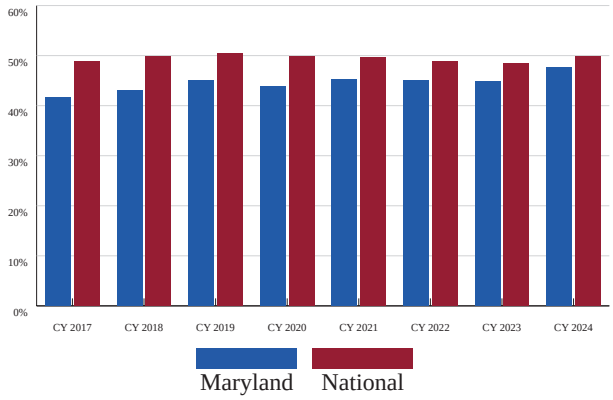
Maryland and National Bystander CPR Rates



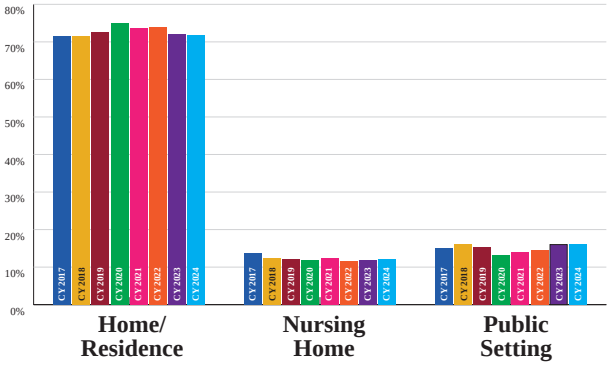
Survival Rates for Patients with Out of Hospital Cardiac Arrests That Were Witnessed by Bystanders and Had First Arrest Rhythms That Were Shockable



Percentage of Cardiac Arrests That Were Witnessed by Bystanders and/or First Responder/EMS by Calendar Year



Location of Cardiac Arrest



*See page 74 for intervention rate formulas.

electronic MARYLAND EMS DATA SYSTEMS (eMEDS®)

Patient Care Reporting Records Submitted to MIEMSS by Maryland Jurisdictions

The electronic Maryland EMS Data System (eMEDS®) enables Maryland's EMS clinicians to document and produce an electronic patient care record (ePCR). Additionally, it serves as a primary resource to query data about EMS demand, response, and outcome. All jurisdictional EMSOPs in Maryland use eMEDS® to document their call information. The EMSOPs can enter data either via a local device with internet connectivity or via a dedicated website. The table below displays the quarterly record volume for FY 2025.

eMEDS® Records Submitted to MIEMSS per Fiscal Year 2025 Quarter[1]

Reporting Between: 7/1/2024 - 06/30/2025

EMSOP	1st Qtr. FY 2025	2nd Qtr. FY 2025	3rd Qtr. FY 2025	4th Qtr. FY 2025	Total
Airports: BWI & Martins	1,667	1,564	1,507	1,684	**6,422**
Allegany County	4,192	4,191	4,042	3,983	**16,408**
Annapolis, City of	2,719	2,598	2,329	2,473	**10,119**
Anne Arundel County	18,869	18,933	18,208	18,590	**74,600**
Baltimore City	57,631	52,590	51,382	52,622	**214,225**
Baltimore County	36,357	36,782	37,034	34,811	**144,984**
Calvert County	4,110	4,027	4,442	3,960	**16,539**
Caroline County	1,816	1,802	1,900	2,025	**7,543**
Carroll County	6,679	6,587	7,023	6,549	**26,838**
Cecil County	4,063	4,168	4,103	4,023	**16,357**
Charles County	8,084	8,352	8,287	8,136	**32,859**
Dorchester County	1,944	1,931	2,012	1,843	**7,730**
Frederick County	14,523	14,437	14,842	14,856	**58,658**
Garrett County	1,400	1,304	1,355	1,293	**5,352**
Harford County	9,212	9,263	9,487	8,725	**36,687**
Howard County	9,151	9,860	9,525	9,595	**38,131**
Kent County	1,390	1,340	1,307	1,310	**5,347**
Montgomery County	25,086	25,276	25,213	24,202	**99,777**
MSP Aviation Command	551	512	438	585	**2,086**
Ocean City, Town of	2,732	1,203	966	2,005	**6,906**
Prince George's County	47,111	52,940	47,438	48,217	**195,706**
Queen Anne's County	2,280	2,222	2,173	2,271	**8,946**
Salisbury, City of	3,276	3,307	3,380	3,329	**13,292**
Somerset County	1,072	1,024	1,036	1,025	**4,157**
St. Mary's County	6,160	6,717	6,633	6,416	**25,926**
Talbot County	1,853	1,995	2,005	1,865	**7,718**
Washington County	9,440	9,233	9,206	9,122	**37,001**
Wicomico County	2,083	2,035	1,929	2,048	**8,095**
Worcester County	2,176	2,122	2,072	2,064	**8,434**
Other EMSOPs	1,432	1,384	1,441	1,430	**5,687**
Grand Total	**289,059**	**289,699**	**282,715**	**281,057**	**1,142,530**

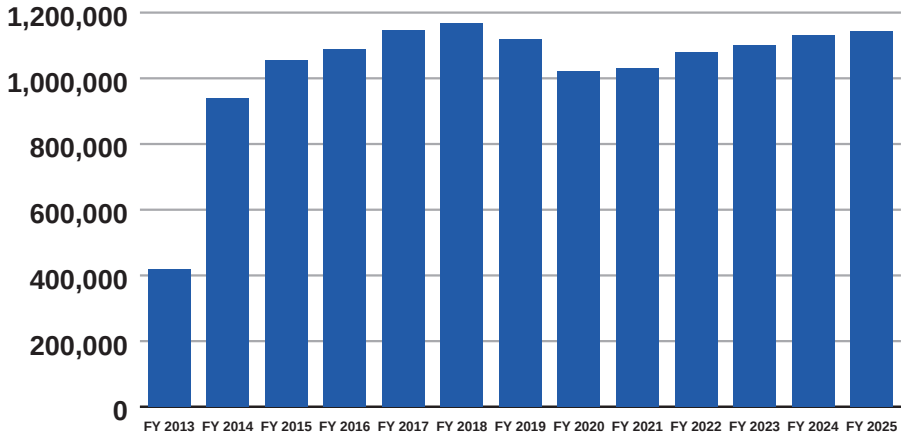
[1]The number of records submitted to MIEMSS does not necessarily represent the number of individual patients treated. Duplicate records can be submitted for the same patient if more than one EMS company responds to treat that patient. Number of records also include both EMS reports and Mobile Integrated Health (MIH) reports.

eMEDS® Records Submitted to MIEMSS per Quarter

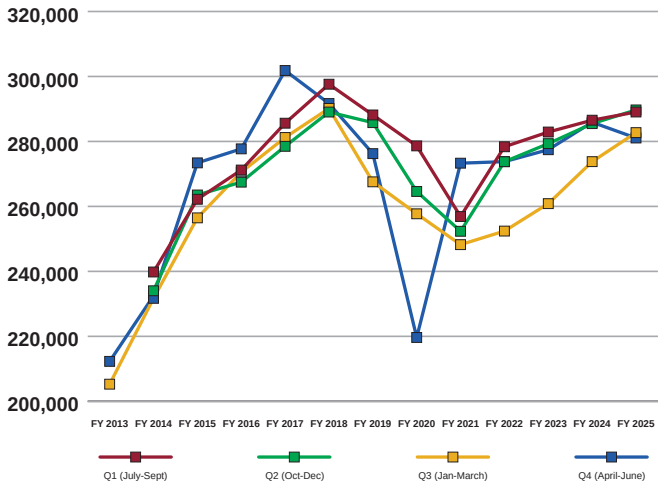
Reporting Between: FY 2013 - FY 2025

EMSOP	1st Qtr. (July-Sept)	2nd Qtr. (Oct-Dec)	3rd Qtr. (Jan-March)	4th Qtr. (April-June)	Total
FY 2013			205,278	212,297	**417,575**
FY 2014	239,810	234,029	231,699	232,470	**938,008**
FY 2015	262,197	263,515	256,475	273,403	**1,055,590**
FY 2016	271,193	267,467	270,538	277,714	**1,086,912**
FY 2017	285,611	278,493	281,211	301,832	**1,147,147**
FY 2018	297,614	289,044	290,157	291,666	**1,168,481**
FY 2019	288,151	285,788	267,566	276,245	**1,117,750**
FY 2020	278,630	264,598	257,723	219,655	**1,020,606**
FY 2021	256,887	252,341	248,229	273,306	**1,030,763**
FY 2022	278,362	273,760	252,406	273,778	**1,078,306**
FY 2023	282,893	279,324	260,853	277,455	**1,100,525**
FY 2024	286,538	285,483	273,782	285,906	**1,131,709**
FY 2025	289,059	289,699	282,715	281,057	**1,142,530**
Grand Total	**3,316,945**	**3,263,541**	**3,378,632**	**3,476,784**	**13,435,902**

eMEDS® Records Submitted to MIEMSS per Fiscal Year 2013-2025



eMEDS® Records Submitted to MIEMSS per Fiscal Year by Quarter 2013-2025



Public Safety EMS Units

Patient Transportation Vehicles

Region	Ambulances								Ambulance Buses	
	BLS				ALS				Type I	Type II
	In-Service	Peak Hours	Ready Reserve	Unstocked, Unequipped Reserve	In-Service	Peak Hours	Ready Reserve	Unstocked, Unequipped Reserve	20+ Patients	10 - 19 Patients
Region I	1	0	0	0	16	0	18	0	0	0
Region II	39	0	2	12	13	2	1	6	0	1
Region III	42	21	23	10	126	32	21	59	0	2
Region IV	2	2	11	1	52	17	78	4	0	1
Region V	70	8	73	26	52	13	13	2	1	2
STATEWIDE TOTAL	**154**	**31**	**109**	**49**	**259**	**64**	**131**	**71**	**1**	**6**

NOTE: Excludes federal EMS Operational Programs.
Source: Vehicle data reported by the EMS Operational Programs

Patient Transportation Vehicle Definitions:

Basic Life Support (BLS) Transport Vehicle: A vehicle equipped to carry and treat a patient per EMT Protocols
Advanced Life Support (ALS) Transport Vehicle: A vehicle equipped to carry and treat a patient per Cardiac Rescue Technician (CRT, CRT99) or Paramedic protocols
Total Equipped: Includes units that are equipped as either BLS or ALS and that are available for staffing in the event of system surge
Staffed 24/7: EMS clinicians assigned and ready to respond to a 9-1-1 call
Ambulance Bus: A passenger bus configured or modified to transport as many as 20 patients on stretchers

Public Safety/Non-Transportation Vehicles

Region	Non-Transport Support				Disaster Supplies		
	BLS Capable First Responder		ALS Capable First Responder		MCSU Type I	MCSU Type II	MCSU Type III
	Non-Suppression	Suppression	Non-Suppression	Suppression	100+ Patients	50 Patients	25 Patients
Region I	11	20	6	2	0	1	0
Region II	19	55	17	4	0	2	3
Region III	16	213	33	3	1	6	3
Region IV	22	75	20	4	0	3	3
Region V	28	128	27	52	3	4	0
STATEWIDE TOTAL	**96**	**491**	**103**	**65**	**4**	**16**	**9**

NOTE: Excludes federal EMS Operational Programs.
Source: Vehicle data reported by the EMS Operational Programs
***MCSU = Mass Casualty Support Unit*

MARYLAND TRAUMA AND BURN STATISTICS

Age Distribution of Patients Treated at Pediatric or Adult Trauma Centers

(3-Year Comparison)

Source: Maryland State Trauma Registry

Age Range	June 2022 to May 2023	June 2023 to May 2024	June 2024 to May 2025
Under 1 year	231	275	247
1 to 4 years	515	591	589
5 to 9 years	626	673	786
10 to 14 years	750	868	928
15 to 24 years	3,478	3,671	3,545
25 to 44 years	6,661	6,992	7,282
45 to 64 years	5,052	5,701	5,808
65+ years	8,845	11,662	13,329
Unknown	5	5	15
TOTAL	26,163	30,438	32,529

For children who were burn patients at Children's National Hospital or Johns Hopkins Pediatric Trauma Center, see Maryland Pediatric Burn Statistics.

MARYLAND ADULT TRAUMA STATISTICS

Total Cases Reported by Trauma Centers

(3-Year Comparison)

Source: Maryland State Trauma Registry

Trauma Center	June 2022 to May 2023	June 2023 to May 2024	June 2024 to May 2025
The Johns Hopkins Bayview Medical Center	2,419	3,631	5,082
The Johns Hopkins Medical System	2,620	2,835	3,128
Meritus Medical Center	2,986	3,838	3,708
R Adams Cowley Shock Trauma Center	5,687	5,922	5,717
Sinai Hospital of Baltimore	2,376	2,653	3,110
Suburban Hospital – Johns Hopkins Medicine	2,316	2,507	2,897
TidalHealth Peninsula Regional	2,190	2,661	3,151
University of Maryland Capital Region Medical Center	2,940	3,244	2,470
UPMC Western Maryland	755	985	1,137
TOTAL	24,289	28,276	30,400

Occurrence of Injury by County: Scene Origin Cases Only

(June 2024 to May 2025)
Source: Maryland State Trauma Registry

County of Injury	Number
Allegany County	784
Anne Arundel County	1,004
Baltimore County	5,009
Calvert County	113
Caroline County	48
Carroll County	325
Cecil County	35
Charles County	172
Dorchester County	171
Frederick County	582
Garrett County	32
Harford County	784
Howard County	418
Kent County	46
Montgomery County	2,304
Prince George's County	1,722
Queen Anne's County	61
St. Mary's County	184
Somerset County	235
Talbot County	78
Washington County	2,408
Wicomico County	1,072
Worcester County	637
Baltimore City	5,181
Virginia	119
West Virginia	189
Pennsylvania	444
Washington, DC	37
Delaware	147
Other	1
Not Indicated	1,213
TOTAL	25,555

Note: Scene origin cases represent 84.1% of the total trauma cases treated statewide.

Residence of Patients by County: Scene Origin Cases Only

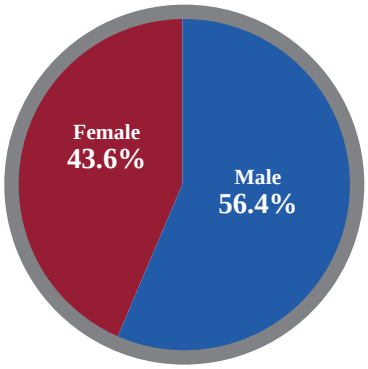
(June 2024 to May 2025)
Source: Maryland State Trauma Registry

County of Residence	Number
Allegany County	715
Anne Arundel County	1,066
Baltimore County	5,087
Calvert County	132
Caroline County	54
Carroll County	386
Cecil County	44
Charles County	207
Dorchester County	154
Frederick County	533
Garrett County	22
Harford County	826
Howard County	383
Kent County	44
Montgomery County	2,343
Prince George's County	1,564
Queen Anne's County	68
St. Mary's County	160
Somerset County	241
Talbot County	54
Washington County	2,497
Wicomico County	977
Worcester County	481
Baltimore City	4,785
Virginia	398
West Virginia	306
Pennsylvania	711
Washington, DC	317
Delaware	263
Other	466
Not Indicated	271
TOTAL	25,555

Note: Scene origin cases represent 84.1% of the total trauma cases treated statewide.

Gender Profile: Primary Admissions Only

(June 2024 to May 2025)
Source: Maryland State Trauma Registry



Note: "Primary Admissions" refers to all patients except those treated and released from the emergency department within six hours of emergency department arrival.

Patients with Protective Devices at Time of Trauma Incident: Primary Admissions Only

(3-Year Comparison)
Source: Maryland State Trauma Registry

Protective Device	June 2022 to May 2023	June 2023 to May 2024	June 2024 to May 2025
None	23.8%	22.1%	25.0%
Seatbelt	11.8%	8.8%	9.0%
Airbag and Seatbelt	37.3%	38.7%	38.0%
Airbag Only	12.0%	14.6%	12.3%
Infant/Child Seat	0.0%	0.1%	0.1%
Protective Helmet	14.9%	14.7%	15.2%
Padding/Protective Clothing	0.1%	0.1%	0.1%
Other Protective Device	0.0%	0.1%	0.0%
Unknown	0.1%	0.8%	0.3%
TOTAL	100.0%	100.0%	100.0%

Note: Patients were involved in motor vehicle, motorcycle, bicycle, and sports-related incidents only. "Primary Admissions" refers to all patients except those treated and released from the emergency department within six hours of emergency department arrival.

Legend Code

Johns Hopkins Bayview Medical Center	BVMC	Suburban Hospital – Johns Hopkins Medicine	SUB
The Johns Hopkins Hospital	JHH	TidalHealth Peninsula Regional	THPR
Meritus Medical Center	MMC	University of Maryland	
R Adams Cowley Shock Trauma Center	STC	Capital Region Health	UMCRH
Sinai Hospital	SH	UPMC Western Maryland	UPMCWM

Mode of Patient Transport to Trauma Centers: Scene Origin Cases Only

(June 2024 to May 2025)
Source: Maryland State Trauma Registry

Modality Type	BVMC	JHH	MMC	THPR	CRMC	SH	STC	SUB	WM	TOTAL
Ground Ambulance	92.6%	75.1%	81.5%	97.1%	88.1%	94.1%	76.1%	85.8%	67.6%	85.4%
Helicopter	0.1%	0.6%	0.4%	1.5%	8.5%	0.2%	22.4%	0.1%	0.4%	4.4%
Other	7.3%	24.3%	18.1%	1.4%	3.4%	5.7%	1.5%	14.1%	32.0%	10.2%
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Note: Only patients brought directly from the scene to a trauma center are included in this table.

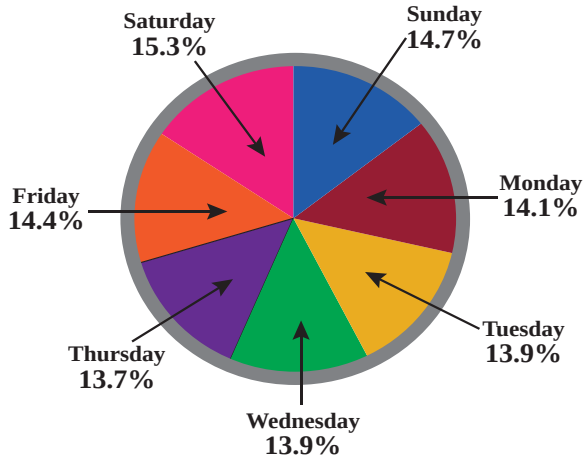
Origin of Patient Transport to Trauma Centers

(June 2024 to May 2025)
Source: Maryland State Trauma Registry

Origin Type	BVMC	JHH	MMC	THPR	CRMC	SH	STC	SUB	WM	TOTAL
Scene of Injury	96.1%	77.0%	97.8%	73.5%	88.1%	88.9%	67.0%	92.8%	92.5%	84.6%
Hospital Transfer	0.3%	6.4%	0.1%	1.6%	4.8%	6.6%	32.8%	3.2%	1.2%	8.5%
Other	3.6%	16.6%	2.1%	24.9%	7.1%	4.5%	0.2%	4.0%	6.3%	6.9%
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

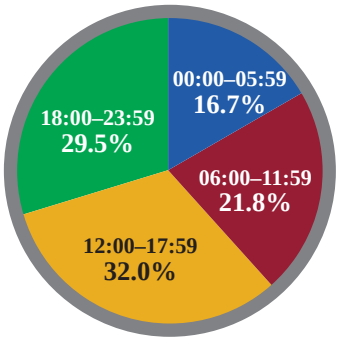
Emergency Department Arrivals by Day of Week: Primary Admissions Only

(June 2024 to May 2025)
Source: Maryland State Trauma Registry



Emergency Department Arrivals by Time of Day: Primary Admissions Only

(June 2024 to May 2025)
Source: Maryland State Trauma Registry



Note: "Primary Admissions" refers to all patients except those treated and released from the emergency department within six hours of emergency department arrival.

Number of Deaths by Age

(3-Year Comparison)

Source: Maryland State Trauma Registry

Age	June 2022 to May 2023	June 2023 to May 2024	June 2024 to May 2025
Under 1 year	0	0	0
1 to 4 years	0	2	1
5 to 14 years	3	4	9
15 to 24 years	104	101	70
25 to 44 years	210	196	207
45 to 64 years	173	153	131
65+ years	303	354	355
Unknown	1	2	0
TOTAL	794	812	773
Deaths Overall as a Percentage of the Total Injuries Treated	3.3%	2.9%	2.5%

Note: Only pediatric patients who were treated at Adult Trauma Centers are included in this table. For patients treated at Pediatric Trauma Centers, see Maryland Pediatric Trauma Statistics.

Number of Injuries by Age

(3-Year Comparison)

Source: Maryland State Trauma Registry

Age	June 2022 to May 2023	June 2023 to May 2024	June 2024 to May 2025
Under 1 year	65	71	81
1 to 4 years	120	145	184
5 to 14 years	270	299	404
15 to 24 years	3,273	3,403	3,299
25 to 44 years	6,660	6,990	7,280
45 to 64 years	5,051	5,701	5,808
65+ years	8,845	11,662	13,329
Unknown	5	5	15
TOTAL	24,289	28,276	30,400

Note: Only pediatric patients who were treated at Adult Trauma Centers are included in this table. For patients treated at Pediatric Trauma Centers, see Maryland Pediatric Trauma Statistics.

Number of Injuries and Deaths by Age

(June 2024 to May 2025)

Source: Maryland State Trauma Registry

	Number of Injured Patients		Number of Deaths	
Age	Total	Maryland Residents	Total	Maryland Residents
Under 1 year	81	71	0	0
1 to 4 years	184	147	1	1
5 to 14 years	404	335	9	8
15 to 24 years	3,299	2,910	70	63
25 to 44 years	7,280	6,429	207	191
45 to 64 years	5,808	5,164	131	118
65+ years	13,329	12,166	355	324
Unknown	15	1	0	0
TOTAL	30,400	27,223	773	705

Note: Only pediatric patients who were treated at Adult Trauma Centers are included in this table. For patients treated at Pediatric Trauma Centers, see Maryland Pediatric Trauma Statistics.

Etiology of Injuries to Patients Primary Admissions Only

(3-Year Comparison)

Source: Maryland State Trauma Registry

Etiology	June 2022 to May 2023	June 2023 to May 2024	June 2024 to May 2025
Cut/Stab	4.4%	4.1%	3.7%
Drowning/Submersion	0.0%	0.1%	0.1%
Fall	48.0%	52.9%	55.9%
Fire or Flame	0.2%	0.3%	0.3%
Hot Object or Substance	0.2%	0.2%	0.2%
Gun Shot Wound	6.9%	5.0%	3.9%
Machinery/Mechanical	0.6%	0.6%	0.6%
Motor Vehicle Crash	22.3%	20.6%	18.4%
Motorcycle Crash	3.3%	3.2%	3.4%
Bicycle Crash	1.6%	1.4%	1.6%
Pedestrian Incident	4.8%	4.1%	4.0%
Other Transport*	0.1%	0.1%	0.1%
Natural or Environmental	0.6%	0.7%	0.8%
Poisoning	0.3%	0.2%	0.3%
Struck by Object	5.1%	5.0%	4.8%
Other	1.6%	1.5%	1.9%
TOTAL	100.0%	100.0%	100.0%

*Note: *Injuries sustained in "Other Transport" include injuries while boating, using personal water craft, in airplanes, etc. "Primary Admissions" refers to all patients except those treated and released from the emergency department within six hours of emergency department arrival.*

Blood Alcohol Content of Patients* Primary Admissions Only

(3-Year Comparison)

Source: Maryland State Trauma Registry

Blood Alcohol Content	June 2022 to May 2023	June 2023 to May 2024	June 2024 to May 2025
Negative	68.0%	63.1%	57.8%
Positive	32.0%	36.9%	42.2%
TOTAL	100.0%	100.0%	100.0%

Note: "Primary Admissions" refers to all patients except those treated and released from the emergency department within six hours of emergency department arrival.

**These percentages include only patients brought to the hospital directly from the scene that needed a full team response excluding those patients that died in the Emergency Department. Therefore, the calculation has changed from what was reported in previous years to reflect current guidelines.*

Etiology of Injuries by Age: Primary Admissions Only

(June 2024 to May 2025)
Source: Maryland State Trauma Registry

Age	Motor Vehicle Crash	Motorcycle	Pedestrian	Fall	Gunshot Wound	Stab Wound	Struck by Object	Bicyclist	Other	Total
Under 1 year	0.1%	0.0%	0.0%	0.1%	0.0%	0.1%	0.5%	0.0%	1.1%	0.2%
1 to 4 years	0.2%	0.0%	0.0%	0.2%	0.0%	0.3%	0.4%	0.0%	3.0%	0.3%
5 to 14 years	0.6%	0.1%	0.6%	0.5%	1.7%	0.6%	1.5%	2.0%	2.2%	0.7%
15 to 24 years	18.8%	22.2%	15.1%	1.9%	30.5%	15.3%	14.6%	11.3%	12.2%	9.1%
25 to 44 years	38.3%	43.3%	40.3%	8.1%	54.5%	55.1%	44.2%	29.1%	34.1%	22.9%
45 to 64 years	21.8%	28.2%	29.5%	16.2%	11.0%	23.4%	28.1%	36.1%	26.3%	19.5%
65+ years	20.2%	6.2%	14.5%	73.0%	2.3%	5.2%	10.7%	21.5%	21.1%	47.3%
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Note: "Primary Admissions" refers to all patients except those treated and released from the emergency department within six hours of emergency department arrival. Only pediatric patients who were treated at Adult Trauma Centers are included in this table. For patients treated at Pediatric Trauma Centers, see Pediatric Trauma Center tables and graphs.

Etiology Distribution for Patients with Blunt Injuries: Primary Admissions Only

(June 2024 to May 2025)
Source: Maryland State Trauma Registry

Etiology	Percentage
Cut/Stab	0.3%
Fall	60.6%
Machinery/Mechanical	0.5%
Motor Vehicle Crash	20.2%
Motorcycle Crash	3.7%
Bicyclist Crash	1.8%
Pedestrian Incident	4.4%
Other Transport*	0.1%
Natural or Environmental	0.4%
Struck by Object	5.1%
Other	1.7%
Not Valued	1.2%
TOTAL	100.0%

*Note: *Injuries sustained in "Other Transport" include injuries while boating, using personal water craft, in airplanes, etc. "Primary Admissions" refers to all patients except those treated and released from the emergency department within six hours of emergency department arrival.*

Etiology Distribution for Patients with Penetrating Injuries: Primary Admissions Only

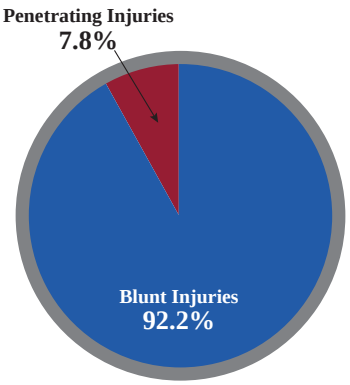
(June 2024 to May 2025)
Source: Maryland State Trauma Registry

Etiology	Percentage
Cut/Stab	43.7%
Fall	1.4%
Gunshot Wound	50.1%
Machinery/Mechanical	1.0%
Motor Vehicle Crash	0.1%
Motorcycle Crash	0.1%
Pedestrian Incident	0.1%
Bicyclist	0.1%
Natural or Environmental	0.2%
Struck by Object	1.1%
Other	0.8%
Not Valued	1.3%
TOTAL	100.0%

Note: "Primary Admissions" refers to all patients except those treated and released from the emergency department within six hours of emergency department arrival.

Injury Type Distribution of Patients: Primary Admissions Only

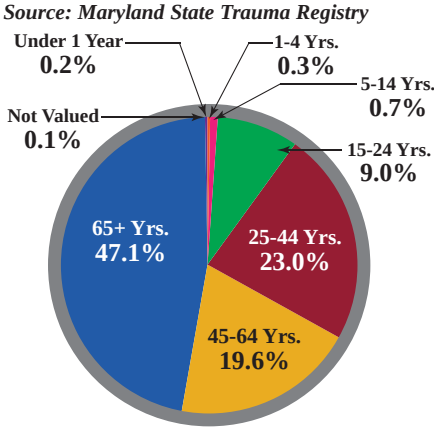
(June 2024 to May 2025)
Source: Maryland State Trauma Registry



Note: "Primary Admissions" refers to all patients except those treated and released from the emergency department within six hours of emergency department arrival.

Age Distribution of Patients: Primary Admissions Only

(June 2024 to May 2025)
Source: Maryland State Trauma Registry



Note: "Primary Admissions" refers to all patients except those treated and released from the emergency department within six hours of emergency department arrival. Only pediatric patients who were treated at Adult Trauma Centers are included in this table. For patients treated at Pediatric Trauma Centers, see Pediatric Trauma Center tables and graphs.

Final Disposition of Patients: Primary Admissions Only

(3-Year Comparison)

Source: Maryland State Trauma Registry

Final Disposition	June 2022 to May 2023	June 2023 to May 2024	June 2024 to May 2025
Inpatient Rehab Facility	8.4%	8.7%	8.8%
Skilled Nursing Facility	13.4%	13.6%	13.5%
Residential Facility	1.0%	0.9%	0.8%
Specialty Referral Center	4.2%	4.1%	3.7%
Home with Services	8.7%	9.6%	9.8%
Home	52.3%	51.1%	51.9%
Acute Care Hospital	2.1%	2.0%	2.0%
Left Against Medical Advice	2.1%	2.3%	2.3%
Morgue/Died	4.3%	3.9%	3.5%
Left without Treatment	0.1%	0.0%	0.0%
Intermediate Care Facility	0.1%	0.0%	0.0%
Hospice Care	1.0%	1.2%	1.2%
Jail	0.8%	0.9%	0.7%
Psychiatric Hospital	1.0%	1.1%	1.1%
Elopement	0.3%	0.5%	0.5%
Other	0.2%	0.1%	0.2%
TOTAL	100.0%	100.0%	100.0%

Note: "Primary Admissions" refers to all patients except those treated and released from the emergency department within six hours of emergency department arrival.

Injury Severity Scores of Patients with Penetrating Injuries: Primary Admissions Only

(3-Year Comparison)

Source: Maryland State Trauma Registry

ISS	June 2022 to May 2023	June 2023 to May 2024	June 2024 to May 2025
1 to 8	48.6%	52.2%	54.8%
9 to 14	26.9%	28.0%	26.3%
16 to 24	11.1%	8.1%	7.8%
25 to 75	13.4%	11.7%	11.1%
TOTAL	100.0%	100.0%	100.0%

Note: "Primary Admissions" refers to all patients except those treated and released from the emergency department within six hours of emergency department arrival.

Injury Severity Scores (ISS) by Injury Type: Primary Admissions Only

(June 2024 to May 2025)

Source: Maryland State Trauma Registry

ISS	Blunt	Penetrating	Total
1 to 8	54.9%	54.8%	54.9%
9 to 14	32.2%	26.3%	31.7%
16 to 24	7.5%	7.8%	7.5%
25 to 75	5.4%	11.1%	5.9%
TOTAL	100.0%	100.0%	100.0%

Note: "Primary Admissions" refers to all patients except those treated and released from the emergency department within six hours of emergency department arrival.

Injury Severity Scores of Patients with Blunt Injuries: Primary Admissions Only

(3-Year Comparison)

Source: Maryland State Trauma Registry

ISS	June 2022 to May 2023	June 2023 to May 2024	June 2024 to May 2025
1 to 8	50.2%	52.1%	54.9%
9 to 14	34.7%	33.9%	32.2%
16 to 24	9.0%	8.1%	7.5%
25 to 75	6.1%	5.9%	5.4%
TOTAL	100.0%	100.0%	100.0%

Note: "Primary Admissions" refers to all patients except those treated and released from the emergency department within six hours of emergency department arrival.

Injury Severity Scores of Patients with Either Blunt or Penetrating Injuries: Primary Admissions Only

(3-Year Comparison)

Source: Maryland State Trauma Registry

ISS	June 2022 to May 2023	June 2023 to May 2024	June 2024 to May 2025
1 to 8	50.0%	52.1%	54.9%
9 to 14	33.8%	33.3%	31.7%
16 to 24	9.2%	8.1%	7.5%
25 to 75	7.0%	6.5%	5.9%
TOTAL	100.0%	100.0%	100.0%

Note: "Primary Admissions" refers to all patients except those treated and released from the emergency department within six hours of emergency department arrival.

MARYLAND ADULT BURN STATISTICS

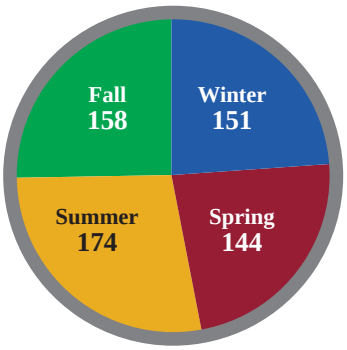
Total Number of Adult Burn Cases

Patients Aged 15 and Older Treated at Johns Hopkins Burn Center at Bayview (3-Year Comparison)
Source: Maryland State Trauma Registry

Institution	June 2022 to May 2023	June 2023 to May 2024	June 2024 to May 2025
Johns Hopkins Burn Center at Bayview	661	698	627

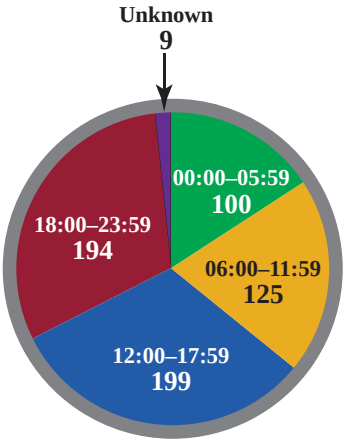
Season of Year Distribution

Patients Aged 15 and Older Treated at Johns Hopkins Burn Center at Bayview (June 2024 to May 2025)
Source: Maryland State Trauma Registry



Time of Arrival Distribution

Patients Aged 15 and Older Treated at Johns Hopkins Burn Center at Bayview (June 2024 to May 2025)
Source: Maryland State Trauma Registry



Place of Injury

Patients Aged 15 and Older Treated at Johns Hopkins Burn Center at Bayview (June 2024 to May 2025)
Source: Maryland State Trauma Registry

Place of Injury	Number
Non-Institutional Private Residence	382
Institutional Private Residence	16
School, Other Institution and Public Administrative Area	5
Sports and Athletic Area	1
Street/Highway	24
Trade and Service Area	45
Industrial and Construction Area	21
Other Places	25
Unspecified Places	108
TOTAL	627

Occurrence of Injury by County

Patients Aged Fifteen and Older Treated at Johns Hopkins Burn Center at Bayview (June 2024 to May 2025)
Source: Maryland State Trauma Registry

County of Injury	Number
Allegany County	4
Anne Arundel County	42
Baltimore County	122
Caroline County	4
Carroll County	11
Cecil County	8
Charles County	1
Dorchester County	2
Frederick County	11
Harford County	43
Howard County	18
Kent County	3
Montgomery County	7
Prince George's County	9
Queen Anne's County	3
St. Mary's County	1
Somerset County	3
Talbot County	4
Washington County	6
Wicomico County	9
Worcester County	1
Baltimore City	197
Virginia	3
West Virginia	8
District of Columbia	1
Pennsylvania	14
Delaware	2
Other	5
Not Valued	85
TOTAL	627

Residence of Patients by County

Patients Aged 15 and Older Treated at Johns Hopkins Burn Center at Bayview (June 2024 to May 2025)
Source: Maryland State Trauma Registry

County of Residence	Number
Allegany County	5
Anne Arundel County	53
Baltimore County	150
Caroline County	4
Carroll County	15
Cecil County	9
Charles County	1
Dorchester County	2
Frederick County	14
Harford County	47
Howard County	21
Kent County	3
Montgomery County	11
Prince George's County	12
Queen Anne's County	4
St. Mary's County	1
Somerset County	4
Talbot County	5
Washington County	6
Wicomico County	9
Worcester County	1
Baltimore City	206
Virginia	1
West Virginia	9
District of Columbia	2
Pennsylvania	16
Delaware	2
Other	4
Not Valued	10
TOTAL	627

Mode of Patient Transport

Patients Aged 15 and Older Treated at Johns Hopkins Burn Center at Bayview (June 2024 to May 2025)
Source: Maryland State Trauma Registry

Modality Type	Number
Ground Ambulance	311
Helicopter	31
Other*	276
Not Valued	9
TOTAL	627

**Note: The category "Other" includes patients who were brought in by fixed-wing ambulance, private or public vehicles, or were walk-ins.*

Etiology of Injuries by Age

Patients Aged 15 and Older Treated at Johns Hopkins Burn Center at Bayview
(June 2024 to May 2025)
Source: Maryland State Trauma Registry

Age Range	Electrical	Chemical	Thermal			Inhalation	Other Burn	Other Non-Burn	Not Valued	Total
			Flame	Contact	Scald					
15 to 24 years	1	2	23	9	26	2	2	1	9	75
25 to 44 years	7	9	63	42	102	5	4	0	24	256
45 to 64 years	5	3	63	20	67	9	5	3	18	193
65 years and over	2	1	36	17	36	2	0	0	6	100
Not Valued	0	0	0	0	0	0	0	0	3	3
Total	15	15	185	88	231	18	11	4	60	627

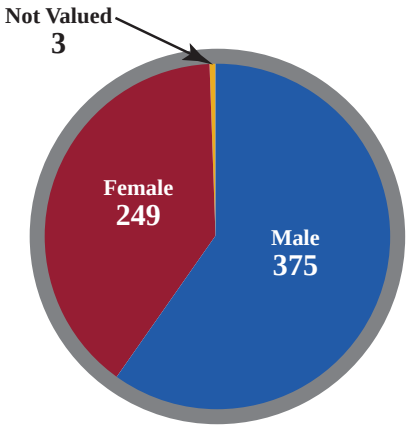
Final Disposition of Patients

Patients Aged 15 and Older Treated at Johns Hopkins Burn Center at Bayview
(3-Year Comparison)
Source: Maryland State Trauma Registry

Final Disposition	June 2022 to May 2023	June 2023 to May 2024	June 2024 to May 2025
Home	525	553	502
Home with Services	34	44	42
Transfer to Another Acute Care Facility	2	2	1
Discharged to Long-Term Care Facility	0	1	3
Discharged to Alternate Caregiver	1	0	0
Rehabilitation Facility	5	9	6
Skilled Nursing Facility	25	23	15
Psychiatric Hospital	8	10	4
Morgue/Died	12	16	13
Left Against Medical Advice or Discontinued Care	8	23	19
Jail	5	7	7
Hospice	2	4	2
Other	0	1	3
Not Valued	34	5	10
TOTAL	661	698	627

Gender Profile

Patients Aged 15 and Older Treated at
Johns Hopkins Burn Center at Bayview
(June 2024 to May 2025)
Source: Maryland State Trauma Registry



Number of Injuries by Age

Patients Aged 15 and Older Treated at Johns Hopkins Burn Center at Bayview
(3-Year Comparison)
Source: Maryland State Trauma Registry

Age Range	June 2022 to May 2023	June 2023 to May 2024	June 2024 to May 2025
15 to 24 years	83	105	75
25 to 44 years	281	267	256
45 to 64 years	195	214	193
65 years and over	102	112	100
Not Valued	0	0	3
TOTAL	661	698	627

MARYLAND PEDIATRIC TRAUMA STATISTICS

Legend Code	
Children's National Health System	CNHS
Johns Hopkins Pediatric Trauma Center	JHP

Total Cases Treated at Pediatric Trauma Centers

(3-Year Comparison)

Source: Maryland State Trauma Registry

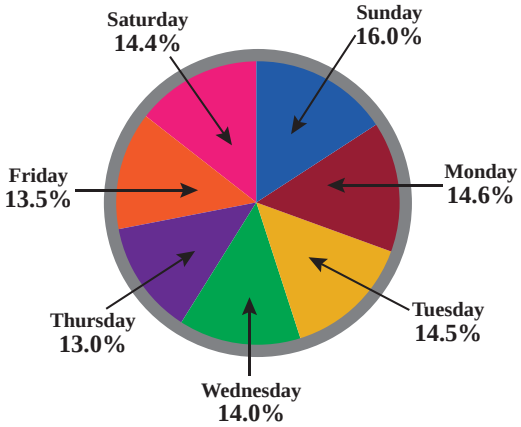
Trauma Center	June 2022 to May 2023	June 2023 to May 2024	June 2024 to May 2025
CNHS	848	978	979
JHP	1,026	1,184	1,150
TOTAL	1,874	2,162	2,129

Note: For children who were treated at Adult Trauma Centers, see Maryland Adult Trauma Statistics. Children's National Health System data include patients residing in Maryland and/or injured in Maryland. For children who were burn patients at each hospital, see Maryland Pediatric Burn Center Statistics.

Emergency Department Arrivals by Day of Week: Children Treated at Pediatric Trauma Centers

(June 2024 to May 2025)

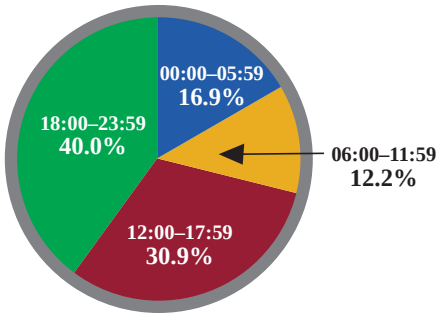
Source: Maryland State Trauma Registry



Emergency Department Arrivals by Time of Day: Children Treated at Pediatric Trauma Centers

(June 2024 to May 2025)

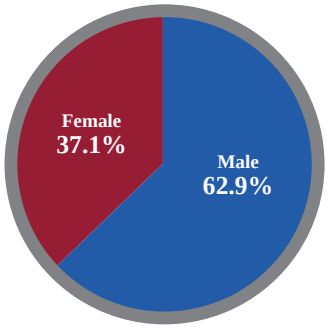
Source: Maryland State Trauma Registry



Gender Profile: Children Treated at Pediatric Trauma Centers

(June 2024 to May 2025)

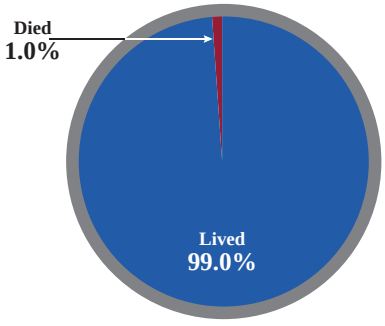
Source: Maryland State Trauma Registry



Outcome Profile: Children Treated at Pediatric Trauma Centers

(June 2024 to May 2025)

Source: Maryland State Trauma Registry



Note: For children who were treated at adult trauma centers, see Maryland Adult Trauma Report. Children's National Hospital data include patients residing in Maryland and/or injured in Maryland. For children that were burn patients at each hospital, see Maryland Pediatric Burn Center Statistics.

Mode of Patient Transport by Center: Scene Origin Cases Only

Children Treated at Pediatric Trauma Centers
(June 2024 to May 2025)
Source: Maryland State Trauma Registry

Modality Type	CNHS	JHP	Total
Ground Ambulance	67.7%	63.1%	64.4%
Helicopter	19.6%	9.2%	12.1%
Other	12.7%	27.7%	23.5%
TOTAL	100.0%	100.0%	100.0%

Note: Only patients brought directly from the scene to a Trauma Center are included in this table. For children who were treated at Adult Trauma Centers, see Maryland Adult Trauma Statistics. Children's National Hospital data include patients residing in Maryland and/or injured in Maryland. For children who were burn patients at each hospital, see Maryland Pediatric Burn Center Statistics.

Origin of Patient Transport by Center

Children Treated at Pediatric Trauma Centers
(June 2024 to May 2025)
Source: Maryland State Trauma Registry

Origin	CNHS	JHP	Total
Scene of Injury	33.2%	72.6%	54.5%
Hospital Transfer	58.4%	22.1%	38.8%
Other	8.4%	5.3%	6.7%
TOTAL	100.0%	100.0%	100.0%

Note: For children who were treated at Adult Trauma Centers, see Maryland Adult Trauma Statistics. Children's National Hospital data include patients residing in Maryland and/or injured in Maryland. For children who were burn patients at each hospital, see Maryland Pediatric Burn Center Statistics.

Injury Type

Children Treated at Pediatric Trauma Centers
(3-Year Comparison)
Source: Maryland State Trauma Registry

Injury Type	June 2022 to May 2023	June 2023 to May 2024	June 2024 to May 2025
Blunt	85.0%	87.2%	86.4%
Penetrating	5.0%	4.4%	3.8%
Near Drowning	1.1%	0.8%	0.7%
Hanging	0.3%	0.1%	0.3%
Ingestion	0.1%	0.0%	0.0%
Crush	0.1%	0.0%	0.1%
Animal Bite/Human Bite	8.3%	7.5%	8.5%
Other	0.1%	0.0%	0.2%
TOTAL	100.0%	100.0%	100.0%

Note: For children who were treated at Adult Trauma Centers, see Maryland Adult Trauma Statistics. Children's National Hospital data include patients residing in Maryland and/or injured in Maryland. For children who were burn patients at each hospital, see Maryland Pediatric Burn Center Statistics.

Mechanism of Injury

Children Treated at Pediatric Trauma Centers
(3-Year Comparison)
Source: Maryland State Trauma Registry

Mechanism of Injury	June 2022 to May 2023	June 2023 to May 2024	June 2024 to May 2025
Cut/Stab	1.8%	2.1%	1.6%
Drowning/Submersion	1.0%	0.7%	0.7%
Falls	31.0%	32.3%	36.5%
Fire or Flame	0.0%	0.1%	0.0%
Gun Shot Wound	3.3%	2.3%	2.0%
Machinery/Mechanical	1.4%	0.9%	0.8%
MVT – Occupant	19.6%	18.3%	18.0%
MVT – Motorcyclist	1.0%	0.8%	0.9%
MVT – Bicyclist	4.3%	4.1%	2.9%
MVT – Pedestrian	8.5%	8.4%	9.0%
Natural/Environmental	8.7%	7.4%	8.7%
Struck by Object	9.9%	11.3%	10.6%
Abuse	5.7%	7.3%	4.0%
Other	1.9%	2.2%	2.5%
Not Valued	1.9%	1.8%	1.8%
TOTAL	100.0%	100.0%	100.0%

Note: For children who were treated at Adult Trauma Centers, see Maryland Adult Trauma Statistics. Children's National Hospital data include patients residing in Maryland and/or injured in Maryland. For children who were burn patients at each hospital, see Maryland Pediatric Burn Center Statistics.

Etiology of Injuries by Age

Children Treated at Pediatric Trauma Centers (June 2024 to May 2025)
Source: Maryland State Trauma Registry

Age	Motor Vehicle Crash	Motorcycle	Pedestrian	Fall	Gunshot Wound	Cut/Stab	Struck by Object	Bicyclist	Other	Total
Under 1 year	2.6%	0.0%	0.0%	12.4%	0.0%	2.9%	3.1%	0.0%	13.7%	7.8%
1 to 4 years	18.1%	0.0%	11.0%	24.8%	14.3%	17.1%	6.6%	4.8%	23.2%	18.9%
5 to 9 years	31.5%	5.3%	29.3%	34.4%	19.0%	11.4%	17.3%	33.9%	28.6%	29.6%
10 to 14 years	37.3%	68.4%	48.2%	21.6%	45.3%	37.2%	45.6%	56.5%	24.4%	32.2%
15+ years	10.5%	26.3%	11.5%	6.8%	21.4%	31.4%	27.4%	4.8%	10.1%	11.5%
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Note: For children who were treated at Adult Trauma Centers, see Maryland Adult Trauma Statistics. Children's National Hospital data include patients residing in Maryland and/or injured in Maryland. For children who were burn patients at each hospital, see Maryland Pediatric Burn Statistics.

Number of Injuries and Deaths by Age

Children Treated at Pediatric Trauma Centers
(June 2024 to May 2025)
Source: Maryland State Trauma Registry

Age	Number of Injured Patients		Number of Deaths	
	Total	Maryland Residents	Total	Maryland Residents
Under 1 year	166	161	4	4
1 to 4 years	405	378	7	6
5 to 9 years	627	592	3	2
10 to 14 years	683	642	5	4
15+ years	248	232	3	2
TOTAL	2,129	2,005	22	18

Note: For children who were treated at Adult Trauma Centers, see Maryland Adult Trauma Statistics. Children's National Hospital data include patients residing in Maryland and/or injured in Maryland. For children who were burn patients at each hospital, see Maryland Pediatric Burn Center Statistics.

Number of Injuries by Age

Children Treated at Pediatric Trauma Centers
(3-Year Comparison)
Source: Maryland State Trauma Registry

Age	June 2022 to May 2023	June 2023 to May 2024	June 2024 to May 2025
Under 1 year	166	204	166
1 to 4 years	395	446	405
5 to 9 years	501	538	627
10 to 14 years	605	704	683
15+ years	207	270	248
TOTAL	1,874	2,162	2,129

Note: For children who were treated at Adult Trauma Centers, see Maryland Adult Trauma Statistics. Children's National Hospital data include patients residing in Maryland and/or injured in Maryland. For children who were burn patients at each hospital, see Maryland Pediatric Burn Center Statistics.

Number of Deaths by Age

Children Treated at Pediatric Trauma Centers
(3-Year Comparison)
Source: Maryland State Trauma Registry

Age	June 2022 to May 2023	June 2023 to May 2024	June 2024 to May 2025
Under 1 year	5	2	4
1 to 4 years	2	6	7
5 to 9 years	4	4	3
10 to 14 years	7	3	5
15+ years	1	1	3
TOTAL	19	16	22

Note: For children who were treated at Adult Trauma Centers, see Maryland Adult Trauma Statistics. Children's National Hospital data include patients residing in Maryland and/or injured in Maryland. For children who were burn patients at each hospital, see Maryland Pediatric Burn Center Statistics.

Final Disposition of Patients

Children Treated at Pediatric Trauma Centers
(3-Year Comparison)
Source: Maryland State Trauma Registry

Final Disposition	June 2022 to May 2023	June 2023 to May 2024	June 2024 to May 2025
Inpatient Rehab Facility	1.4%	1.8%	1.2%
Residential Facility	0.1%	0.0%	0.0%
Specialty Referral Center	0.0%	0.2%	0.1%
Home with Services	0.6%	0.5%	0.9%
Home	94.6%	94.5%	95.0%
Acute Care Hospital	0.5%	0.9%	0.4%
Left Against Medical Advice	0.1%	0.3%	0.1%
Morgue/Died	1.0%	0.7%	1.0%
Foster Care	1.1%	0.7%	0.7%
Jail	0.2%	0.1%	0.3%
Psychiatric Hospital	0.3%	0.2%	0.3%
Elopement	0.1%	0.1%	0.0%
TOTAL	100.0%	100.0%	100.0%

Note: For children who were treated at Adult Trauma Centers, see Maryland Adult Trauma Statistics. Children's National Hospital data include patients residing in Maryland and/or injured in Maryland. For children who were burn patients at each hospital, see Maryland Pediatric Burn Center Statistics.

Etiology of Injuries by Age

Children Treated at Pediatric Trauma Centers or Adult Trauma Centers (June 2024 to May 2025)
Source: Maryland State Trauma Registry

Age	Motor Vehicle Crash	Motorcycle	Pedestrian	Fall	Gunshot Wound	Cut/Stab	Struck by Object	Bicyclist	Other	Total
Under 1 year	3.5%	0.0%	0.5%	14.4%	0.0%	8.3%	5.4%	0.0%	14.4%	9.5%
1 to 4 years	20.5%	0.0%	11.6%	28.9%	12.5%	22.2%	10.4%	4.5%	30.2%	23.1%
5 to 9 years	33.0%	5.3%	33.7%	33.0%	22.9%	16.7%	22.2%	28.1%	30.5%	30.9%
10 to 14 years	43.0%	94.7%	54.2%	23.7%	64.6%	52.8%	62.0%	67.4%	24.9%	36.5%
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Note: Children's National Hospital data include patients residing in Maryland and/or injured in Maryland. For children who were burn patients at each hospital, see Maryland Pediatric Burn Center Statistics.

Occurrence of Injury by County: Scene Origin Cases Only

Children Treated at Pediatric Trauma Centers
(June 2024 to May 2025)
Source: Maryland State Trauma Registry

County of Injury	Number
Allegany County	2
Anne Arundel County	71
Baltimore County	202
Calvert County	24
Caroline County	2
Carroll County	12
Cecil County	7
Charles County	29
Dorchester County	6
Frederick County	24
Garrett County	1
Harford County	48
Howard County	29
Kent County	1
Montgomery County	48
Prince George's County	169
Queen Anne's County	4
St. Mary's County	19
Talbot County	7
Washington County	10
Wicomico County	3
Worcester County	3
Baltimore City	403
Virginia	1
Washington, DC	11
Pennsylvania	3
Delaware	2
Not Valued	19
TOTAL	1,160

Note: For children who were treated at Adult Trauma Centers, see Maryland Adult Trauma Statistics. Children's National Hospital data include patients residing in Maryland and/or injured in Maryland. Scene origin cases represent 54.5% of the total cases treated at Pediatric Trauma Centers. For children who were burn patients at each hospital, see Maryland Pediatric Burn Center Statistics.

Residence of Patients by County: Scene Origin Cases Only

Children Treated at Pediatric Trauma Centers
(June 2024 to May 2025)
Source: Maryland State Trauma Registry

County of Residence	Number
Anne Arundel County	72
Baltimore County	183
Calvert County	18
Caroline County	1
Carroll County	16
Cecil County	7
Charles County	27
Dorchester County	5
Frederick County	21
Garrett County	2
Harford County	48
Howard County	27
Kent County	1
Montgomery County	58
Prince George's County	136
Queen Anne's County	5
St. Mary's County	15
Talbot County	2
Washington County	10
Wicomico County	5
Worcester County	2
Baltimore City	417
Virginia	16
West Virginia	2
Washington, DC	35
Pennsylvania	9
Delaware	4
Other	16
TOTAL	1,160

Note: For children who were treated at Adult Trauma Centers, see Maryland Adult Trauma Statistics. Children's National Hospital data include patients residing in Maryland and/or injured in Maryland. Scene origin cases represent 54.5% of the total cases treated at Pediatric Trauma Centers. For children who were burn patients at each hospital, see Maryland Pediatric Burn Center Statistics.

Children with Protective Devices at Time of Trauma Incident

Children Treated at Pediatric Trauma Centers
(3-Year Comparison)
Source: Maryland State Trauma Registry

Protective Device	June 2022 to May 2023	June 2023 to May 2024	June 2024 to May 2025
None	46.2%	49.5%	46.9%
Seatbelt	2.9%	3.7%	2.3%
Airbag & Seatbelt	16.5%	15.3%	18.4%
Airbag Only	11.3%	10.4%	8.3%
Infant/Child Seat	12.2%	10.1%	12.0%
Protective Helmet	10.3%	10.6%	11.1%
Padding/Protective Clothing	0.3%	0.3%	0.4%
Other Protective Device	0.3%	0.1%	0.3%
Not Valued	0.0%	0.0%	0.3%
TOTAL	100.0%	100.0%	100.0%

Note: Children were involved in motor vehicle, motorcycle, bicycle, and sports-related incidents only. For children who were treated at Adult Trauma Centers, see Maryland Adult Trauma Statistics. Children's National Hospital data include patients residing in Maryland and/or injured in Maryland. For children who were burn patients at each hospital, see Maryland Pediatric Burn Center Statistics.

MARYLAND PEDIATRIC BURN STATISTICS

Total Number of Pediatric Burn Cases

Patients Treated at Pediatric Burn Centers and Patients Less Than Age 15 Treated at Johns Hopkins Burn Center at Bayview (3-Year Comparison)
Source: Maryland State Trauma Registry

Institution	Legend Code	June 2022 to May 2023	June 2023 to May 2024	June 2024 to May 2025
Children's National Health System Pediatric Burn Center	CNHSPBC	233	247	245
Johns Hopkins Pediatric Burn Center	JHPBC	380	418	422
Johns Hopkins Burn Center at Bayview	JHBC	41	44	55
TOTAL		654	709	722

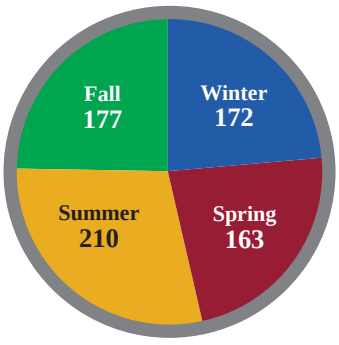
Place of Injury

Patients Treated at Pediatric Burn Centers and Patients Less Than Age 15 Treated at Johns Hopkins Burn Center at Bayview (June 2024 to May 2025)
Source: Maryland State Trauma Registry

Place of Injury	Number
Non-Institutional Private Residence	606
Residential Institution	1
School, Other Institution and Public Administrative Area	11
Sport and Athletic Areas	3
Street/Highway	3
Trade and Service Area	24
Other Places	22
Unspecified Places	52
TOTAL	722

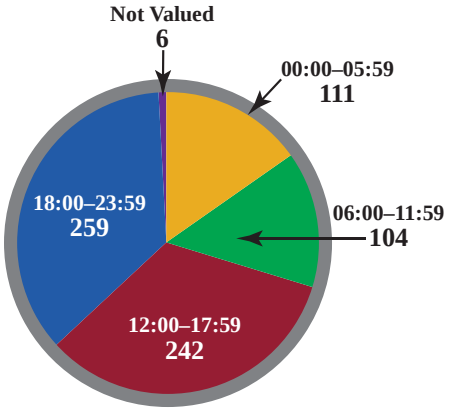
Season of Year Distribution

Patients Treated at Pediatric Burn Centers and Patients Less Than Age 15 Treated at Johns Hopkins Burn Center at Bayview (June 2024 to May 2025)
Source: Maryland State Trauma Registry



Time of Arrival Distribution

Patients Treated at Pediatric Burn Centers and Patients Less Than Age 15 Treated at Johns Hopkins Burn Center at Bayview (June 2024 to May 2025)
Source: Maryland State Trauma Registry



Occurrence of Injury by County

Patients Treated at Pediatric Burn Centers and Patients Less Than Age 15 Treated at Johns Hopkins Burn Center at Bayview (June 2024 to May 2025) Source: Maryland State Trauma Registry

County of Injury	Number
Anne Arundel County	38
Baltimore County	113
Calvert County	4
Caroline County	4
Carroll County	9
Charles County	13
Frederick County	20
Harford County	27
Howard County	30
Kent County	1
Montgomery County	84
Prince George's County	109
Queen Anne's County	2
St. Mary's County	10
Talbot County	3
Washington County	7
Wicomico County	9
Worcester County	3
Baltimore City	140
Virginia	4
West Virginia	3
Pennsylvania	7
Washington, DC	4
Delaware	7
Other	4
Not Valued	67
TOTAL	722

Residence of Patients by County

Patients Treated at Pediatric Burn Centers and Patients Less Than Age 15 Treated at Johns Hopkins Burn Center at Bayview (June 2024 to May 2025) Source: Maryland State Trauma Registry

County of Residence	Number
Anne Arundel County	42
Baltimore County	134
Calvert County	4
Caroline County	6
Carroll County	12
Charles County	14
Dorchester County	2
Frederick County	22
Harford County	29
Howard County	32
Kent County	1
Montgomery County	84
Prince George's County	114
Queen Anne's County	2
St. Mary's County	10
Talbot County	2
Washington County	10
Wicomico County	10
Worcester County	2
Baltimore City	153
Virginia	4
West Virginia	3
Washington, DC	7
Pennsylvania	11
Delaware	7
Other	5
TOTAL	722

Mode of Patient Transport to Burn Center

Patients Treated at Pediatric Burn Centers and Patients Less Than Age 15 Treated at Johns Hopkins Burn Center at Bayview (June 2024 to May 2025) Source: Maryland State Trauma Registry

Origin Type	CNHSPBC	JHPBC	JHBC	Total
Ground Ambulance	67	177	1	245
Helicopter	3	14	0	17
Other*	174	224	54	452
Not Valued	1	7	0	8
TOTAL	245	422	55	722

**Note: The category "Other" includes patients who were brought in by fixed-wing ambulance, private or public vehicles, or were walk-ins.*

Origin of Patient Transport by Burn Center

Patients Treated at Pediatric Burn Centers and Patients Less Than Age 15 Treated at Johns Hopkins Burn Center at Bayview (June 2024 to May 2025) Source: Maryland State Trauma Registry

Origin Type	CNHSPBC	JHPBC	JHBC	Total
Scene of Injury	88	156	25	269
Hospital Transfer	81	180	3	264
Other	74	66	27	167
Not Valued	2	20	0	22
TOTAL	245	422	55	722

Etiology of Injuries by Age

Patients Treated at the Pediatric Burn Clinics
At Johns Hopkins Pediatric Center and Children's National Medical Center (June 2024 to May 2025)
Source: Maryland State Trauma Registr

Age Range	Electrical	Chemical	Thermal			Other Burn	Other Non-Burn	Unknown	Total
			Flame	Contact	Scald				
Under 1 year	0	0	0	32	55	1	0	0	88
1 to 4 years	3	2	14	171	159	8	1	11	369
5 to 9 years	0	1	14	76	69	0	1	3	164
10 to 14 years	0	0	14	58	55	0	1	3	131
15 years and over	0	0	4	12	15	1	2	2	36
Total	3	3	46	349	353	10	5	19	788

Final Disposition of Patients

Patients Treated at Pediatric Burn Centers and Patients Less Than Age 15 Treated at Johns Hopkins Burn Center at Bayview (3-Year Comparison)
Source: Maryland State Trauma Registry

Final Disposition	June 2022 to May 2023	June 2023 to May 2024	June 2024 to May 2025
Home	607	653	649
Home with Services	15	26	37
Transfer to an Acute Care Facility	12	12	16
Rehabilitation Facility	1	4	9
Skilled Nursing Facility	0	0	2
Morgue/Died	4	3	1
Left Against Medical Advice	7	4	1
Alternate Caregiver	2	2	1
Foster Care	5	0	2
Transfer to Inpatient Psychiatric Facility	1	1	0
Not Valued	0	4	4
TOTAL	654	709	722

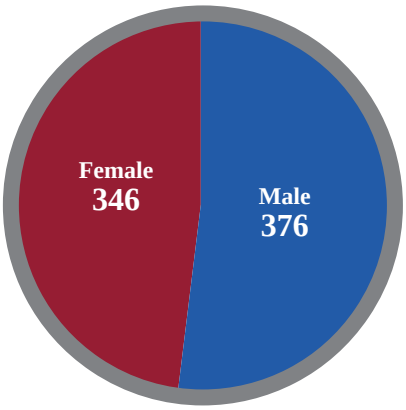
Total Body Surface Area (TBSA) Burned by Length of Stay in Days

Patients Treated at Pediatric Burn Centers and Patients Less Than Age 15 Treated at Johns Hopkins Burn Center at Bayview (June 2024 to May 2025)
Source: Maryland State Trauma Registry

Length of Stay	Less Than 10% TBSA	10 - 19% TBSA	20% or Greater TBSA	Not Valued	Total
1 Day	464	9	9	67	549
2 - 3 Days	61	6	14	0	81
4 - 7 Days	21	8	4	0	33
8 - 14 Days	22	3	0	0	25
15 - 21 Days	0	0	2	0	2
22 - 28 Days	1	2	2	0	5
Over 28 Days	0	0	6	1	7
Not Valued	17	0	0	3	20
TOTAL	586	28	37	71	722

Gender Profile

Patients Treated at Pediatric Burn Centers and Patients Less Than Age 15 Treated at Johns Hopkins Burn Center at Bayview (June 2024 to May 2025)
Source: Maryland State Trauma Registry



Number of Injuries by Age

Patients Treated at Pediatric Burn Centers and Patients Less Than Age 15 Treated at Johns Hopkins Burn Center at Bayview (3-Year Comparison)
Source: Maryland State Trauma Registry

Age Range	June 2022 to May 2023	June 2023 to May 2024	June 2024 to May 2025
Under 1 year	51	64	85
1 to 4 years	321	368	327
5 to 9 years	154	148	161
10 to 14 years	93	93	110
15 years and over	35	36	39
TOTAL	654	709	722

Number of Patients Treated at the Pediatric Burn Clinics at Johns Hopkins Pediatric Center and Children's National Hospital

(3-Year Comparison)
Source: Maryland State Trauma Registry

	June 2022 to May 2023	June 2023 to May 2024	June 2024 to May 2025
Unique Patients	765	815	788
Total Pediatric Burn Clinic Visits	1,484	1,485	1,454

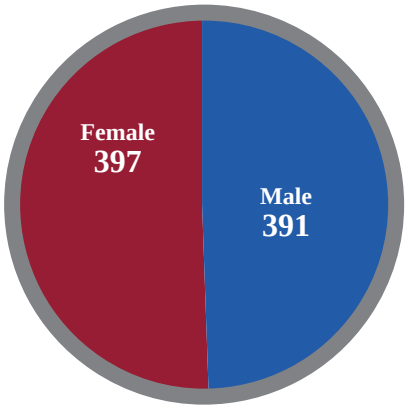
Number of Patients by Age Treated at the Burn Clinics at Johns Hopkins Pediatric Center and Children's National Hospital

(3-Year Comparison)
Source: Maryland State Trauma Registry

Age Range	June 2022 to May 2023	June 2023 to May 2024	June 2024 to May 2025
Under 1 year	69	61	88
1 to 4 years	376	407	369
5 to 9 years	170	180	164
10 to 14 years	102	117	131
15 years and over	48	50	36
TOTAL	765	815	788

Gender Profile

Patients Treated at the Pediatric Burn Clinics at Johns Hopkins Pediatric Center and Children's National Hospital (June 2024 to May 2025)
Source: Maryland State Trauma Registry



Etiology of Injury by Age of Patients

Patients Treated at Pediatric Burn Centers and Patients Less Than Age 15 Treated at Johns Hopkins Burn Center at Bayview (June 2024 to May 2025)
Source: Maryland State Trauma Registry

Age Range	Electrical	Chemical	Thermal			Inhalation	Other Burn	Other Non-Burn	Unknown	Total
			Flame	Contact	Scald					
Under 1 year	0	0	1	27	50	1	3	0	3	85
1 to 4 years	7	5	8	141	138	0	5	1	22	327
5 to 9 years	2	2	15	62	62	5	0	1	12	161
10 to 14 years	1	0	13	35	38	8	5	1	9	110
15 years and over	1	1	7	16	8	1	2	0	3	39
Total	11	8	44	281	296	15	15	3	49	722

EPILOGUE

Consistent with Maryland law and guided by the Vision 2030 as our roadmap, MIEMSS strives to fulfill its mission of reducing preventable deaths, disability, and discomfort among the citizens and visitors of Maryland.
For questions regarding any of MIEMSS' services and functions please visit www.MIEMSS.org.

STATE EMS BOARD /SEMSAC

GOVERNOR OF MARYLAND
Wes Moore

LIEUTENANT GOVERNOR
Aruna Miller

MARYLAND EMS BOARD (July 2024–June 2025)

Public at Large
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University of Maryland Baltimore Designee
Thomas Scalea, MD

Hospital Administrator
James Scheulen, PA, MBA

Volunteer Firefighter
Stephan Cox

Emergency Medical Services Physician
William Frohna, MD

SEMSAC Chairman
Eric Smothers

Public at Large <175,000
Sally Showalter, RN

Emergency Medical Services Nurse
Vacant

Trauma Physician
Dany Westerband, MD, FACS

MDH Secretary (July 2024–December 2024)
Secretary Laura Herrera Scott, MD

MDH Secretary Designee (January 2025–March 2025)
Deputy Secretary Nilesh Kalyanaraman, MD

Career Firefighter
Vacant

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EMS Region IV Advisory Council
Scott A. Haas, *Chairman*

R Adams Cowley Shock Trauma Center
Kristie Snedeker, DPT

Emergency Numbers System Board
Tony Rose

Volunteer Field Provider
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Board of Physicians
Vacant

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EMS Region III Advisory Council
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Maryland Fire and Rescue Institute
Michael Cox

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Danny Platt

American College of Surgeons, Maryland Chapter
Farheen A. Qurashi, MD

MedChi, The Maryland State Medical Society
Jeffrey Sagel, DO

General Public
Lisa Tenney, BSN, RN

General Public (County Population of <175,000)
Wayne Dyott

General Public
Kathleen Grote

Aviation Division, Maryland State Police
Major Michael Tagliaferri

Maryland Society of Anesthesiologists
Linda W. Young, MD, MS

Association of Critical Care Nurses
Jennifer Milesky, DNP

Maryland TraumaNet
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Office of Traffic and Safety,
Maryland Department of Transportation
Timothy J. Kerns, PhD

National Study Center for Trauma and EMS (Director)
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Maryland Hospital Association
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Lisa Lisle

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Vacant

Helicopter Pilot
Erik Abrahamson

MARYLAND INSTITUTE FOR EMERGENCY MEDICAL SERVICES SYSTEMS (MIEMSS)

Theodore R. Delbridge, MD, MPH, FACEP, FAEMS – *Executive Director*
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MARYLAND EMS
A SYSTEM SAVING LIVES