CENTER FOR PUBLIC SAFETY MANAGEMENT, LLC

Mobile Integrated Health Program Assessment and Strategic Plan

Prince George's County, MD Fire/EMS Department

CPSM®

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International City/County Management Association (ICMA)

The International City/County Management Association (ICMA) is a 110-year-old, non-profit professional association of local government administrators and managers, with approximately 13,000 members located in 32 countries.

Since its inception in 1914, ICMA has been dedicated to assisting local governments and their managers in providing services to their citizens in an efficient and effective manner. ICMA advances the knowledge of local government best practices with its website, www.icma.org, publications, research, professional development, and membership.

Center for Public Safety Management

The ICMA Center for Public Safety Management (ICMA/CPSM) was launched by ICMA to provide support to local governments in the areas of law enforcement, fire, Emergency Medical Services (EMS), emergency management, and 911-Communication Centers. CPSM also represents local governments at the federal level and has been involved in numerous projects with the Department of Justice and the Department of Homeland Security. Further, CPSM provides training and research for ICMA members and represents ICMA in its dealings with public safety professional associations such as CALEA, PERF, IACP, IAFC, PSHRA, DOJ, BJA, COPS, and NFPA.

In 2014 as part of a restructuring at ICMA, CPSM spun out of ICMA as a separate company and is now the exclusive provider of public safety technical assistance for ICMA. The *Center for Public Safety Management, LLC,* maintains the same team of individuals performing the same level of service that it had as an ICMA internal program.

As an organization, CPSM has more than 15 years of experience performing fire, EMS, law enforcement, and 911 Communication Center agencies nationwide using our unique methodology of aligning our comprehensive workload and response analysis with industry standards and best practices, and our client's issues and challenges. Our overall experience includes more than 500 such public safety studies in 46 states and provinces and 450+ communities ranging in population size from 269 (Bald Head, NC) to 4.4 million (Maricopa County, AZ).

The CPSM project teams offer years of practitioner, first line supervisory, middle management, and senior leadership experience in the fire, rescue, EMS, emergency management, law enforcement, and 911-Center disciplines; and a record of research, academic, teaching and training. Our team comprises true industry subject matter experts, not research assistants, interns, or generic management consultants.

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SECTION 1. INTRODUCTION

The 2024 *Prince George's County Fire/EMS Department Mobile Integrated Health-Community Paramedicine Program Assessment and Strategic Plan* serves as a strategic planning guide for the refresh and enhancement of the current Mobile Integrated-Community Paramedicine (MIH-CP) program over the near, mid, and longer terms. The *Mobile Integrated Health-Community Paramedicine Program Assessment and Strategic Plan* strives to provide a balanced analysis and approach between current EMS and MIH-CP services, while also considering the demand for service and meeting that demand with essential and adjunct resources through a healthcare system that includes sixty PGFD ambulances, ten PGFD paramedic engines, four in-county hospital systems, twenty-five plus out-of-county hospitals utilized by PGFD ambulances, Prince George's County Public Health Department, Prince George's County Social Services, Prince George's County Family Services, Prince George's County Behavioral Health Services, and private primary care and specialty healthcare providers, clinical services, and community agencies.

The *Mobile Integrated Health-Community Paramedicine Program Assessment and Strategic Plan* is constructed to meet the needs and circumstances of Prince George's County as assessed against the PGFD EMS service delivery system, EMS risk profile, and reported social determinants of health and socio needs profiles.

The *Mobile Integrated Health-Community Paramedicine Program Assessment and Strategic Plan* is county, department, and community in scope, and includes a gap analysis of: EMS workload, response times, transport times, and resiliency; EMS training and education; EMS medical direction, protocols, quality improvement, and digital integration with the healthcare system; EMS and social determinants of health risk profile; and analysis of the current MIH-CP program to include training and education, current client services and navigation to healthcare and social resources, staffing, partnerships with external resources, and overall program functionality. Throughout the gap analysis, the EMS and MIH-CP system operating platform was benchmarked against available national best practices.

The primary objective of the *Mobile Integrated Health-Community Paramedicine Program Assessment and Strategic Plan* is to provide all stakeholders with a document that includes measurable and achievable strategic planning goals and objectives, which are planning initiatives to improve all facets of MIH-CP service deliverables and improve the focus of the MIH-CP program to patient-centered navigation through strategic partnerships with County agencies that has a focus on improving access to healthcare, and offer population specific care through an expansion of medical protocols that are designed to improve quality of life and reduce 911 EMS responses.

The CPSM goal with this report and subsequent planning initiatives, as it is with all our studies, is to provide information to the Fire/EMS Department to make informed decisions on levels of service for the MIH-CP program to include staffing and supportive resources.

Section 6 of the *Mobile Integrated Health-Community Paramedicine Program Assessment and Strategic Plan* includes a summary of the strengths, weaknesses, opportunities, and threats of the current program, program mission, vision, and values, and strategic initiatives designed to refresh and enhance the MIH-CP program so that it may have the impact on healthcare it was designed to provide.

Overall, the *Mobile Integrated Health-Community Paramedicine Program Assessment and Strategic Plan* contains four strategic initiatives and nine goals with corresponding objectives that focus on priority areas of the EMS and MIH-CP system and the County in terms of EMS and MIH-CP service delivery, as outlined in the gap analysis, information received through information CPSM gathered, and internal stakeholder meetings. The four strategic initiatives include:

Strategic Initiative 1: MIH-CP Community Partnerships

Goal 1.1: Continuum and Enhancement of Healthcare and Community Partnerships.

Strategic Initiative 2: MIH-CP Program Resiliency

Goal 2.1: Enhance MIH-CP Staff Training and Education

Goal 2.2: Program Specific MIH-CP Staff Training and Education

Goal 2.3: MIH-CP Program Staffing

Goal 2.4: MIH-CP Analytics

Strategic Initiative 3: MIH-CP Medical Direction, CQI, and Protocols

Goal 3.1: Enhance Collaboration with Medical Direction

Goal 3.2: Enhance MIH-CP Medical Protocols

Goal 3.3: Enhance MIH-CP Continuous Quality Improvement

Strategic Initiative 4: EMS Resiliency and the Connection to MIH-CP

Goal 4.1: Improve EMS Resiliency

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SECTION 2. CPSM METHODOLOGY AND STRATEGIC PLAN CONCEPTS

CPSM Work Plan and Approach to Project

CPSM has developed a universal approach to public safety operational, administrative, and strategic plan analyses and reports. Our project work plan begins with a thorough review of the client's scope of work and is followed up with a project kick off meeting with our client to discuss the purpose of the project, ensure a mutual understanding of the scope of work, and discuss the desired outcomes. Through this dialogue CPSM's and the client's expectations are managed throughout the analysis process. More specifically, for this *Mobile Integrated Health-Community Paramedicine Program Assessment and Strategic Plan* project, CPSM utilized the following analysis methodology:

Data and Information Analysis

The CPSM Team used numerous sources of data and information to support our conclusions, considerations, and strategic initiatives for the *Mobile Integrated Health-Community Paramedicine Program Assessment and Strategic Plan*. Information was obtained from the PGFD along with numerous sources of internal information garnered from a CPSM document/information request. Internal sources included data from the computer-aided dispatch (CAD) system for response time and workload information, the Fire/EMS system's National Incident Reporting System (NFIRS) and electronic patient reporting - records management system for calls for service, the 2022 Prince George's County Community Health Assessment, the 2024 Prince George's County Planning Department Population, Housing, and Economic Survey, the 2022 Demographic Trends and Patterns in Prince George's County report, and the Maryland Department of Health 2021 Primary Care Needs Assessment report.

Stakeholder Interviews

This study relied extensively on interviews and interaction with PGFD staff (command staff, EMS staff, accreditation staff, MIH-CP program staff, and administrative staff) and external stakeholders such as Prince George's County Health and Social Services Departments. On-site and in-person interviews to include virtual meetings were conducted with internal and external stakeholders regarding the administration and operations of the EMS and MIH-CP programs.

Document Review

CPSM EMS Team consultants were furnished with numerous reports and summary documents by the PGFD and external stakeholders. Information on EMS staffing and deployment of resources; mutual aid; policies and procedures; community risk; and distribution of EMS resources was reviewed and analyzed by CPSM project team staff. Follow-up phone calls, emails, and virtual meetings were used to clarify information as needed.

Operational/Administrative Observations

Over the course of the evaluation period, numerous observations were conducted. These included observations of EMS and MIH-CP program operations, training, quality improvement, and medical direction; EMS community risk; social determinants of health; MIH-CP alignment with available community partners; MIH-CP administrative and operational functions and protocols; EMS demand benchmarked against population density, socioeconomic factors, socio needs, and socio determinants of health; and how the population overall correlates to the need

for a MIH-CP program that focuses on patient-centered navigation through strategic partnerships with County agencies that have a focus on improving access to healthcare. The CPSM EMS Team engaged all facets of the MIH-CP program from a ground floor perspective and as well from a management perspective.

Key Concepts of a MIH-CP Program Gap Analysis

Phase 1: Strategic Plan Gap Analysis. The primary concepts of an EMS and MIH-CP operational gap analysis are to review and analyze the drivers and risk associated with a community's EMS demand, and the development of an integrated plan to non-emergent healthcare cases and 911 calls. The overall goal of any community is timely response to the community's EMS needs with the most appropriate resources, which includes the Emergency Communications Center, EMS response units, and a Mobile Integrated Health system that is focused on patient-centered navigation through strategic partnerships with County agencies.

A key component includes a comprehensive review of the community EMS risk to which the EMS system might respond to or as the result of. EMS risk factors have an impact on all fire EMS responses and includes population and population density (the more densification the higher the EMS demand; population demographics; income and poverty levels (those at or below the poverty level tend to have access to healthcare, transportation, and healthcare challenges and issues); extended EMS transport and hospital turnover times, which affect the resiliency of the EMS response system; amplified social determinants of health factors in the community (the conditions in which people are born, grow, live, work, and age, and that ultimately impact their health outcomes); and amplified socio needs in the community (i.e. nutrition assistance, transportation deficiencies, uninsured or underinsured, and income deficiencies).

As a part of the gap analysis, CPSM also conducted a workload, response time, and resiliency analysis of the PGFD EMS system. This analysis examined all ambulance services between January 1, 2021, and December 31, 2023 (three historical analysis), as recorded in the Prince George's County Emergency Communications Center - Computer-Aided Dispatch (CAD) records and Electronic Patient Care Reporting (ePCR) system. In this report, CPSM analyzes calls and runs. A call is an emergency service request or incident. A run is a response or a dispatch of a unit (i.e., a unit responding to a call). Thus, a call may include multiple runs.

The data analysis, which is utilized in this report, focused on call type workload and how units are dispatched; time spent on task and the workload of individual units; response time analysis of responding EMS ground transport units and as clustered in battalions; and a EMS ground transport unit - transport time analysis. Much of the data report and information included in this report focuses on the 2023 calendar year. CPSM also provided analysis of and describes the trend of the ambulance service's response and workload over a three-year period from January 1, 2021, through December 31, 2023.

Phase 2: Developing the MIH-CP Strategic Plan and Plan Outcomes. MIH-CP strategic planning is an important process for Fire & EMS agencies who have implemented or are contemplating implementing this program, as it serves as a clear and concise roadmap for the future. The MIH-CP strategic planning process can be challenging for agencies to undergo as this process requires an honest assessment of the current state of performance, and realistic understanding of ways to improve.

The MIH-CP strategic planning process is crucial for Fire & EMS agencies as it helps them set a clear direction, make informed decisions, and achieve their long-term goals. Here are some key reasons why the MIH-CP strategic planning process is important:

- Goal Alignment: MIH-CP strategic planning ensures that organizational goals and objectives are aligned with the program's, department's, and local government's mission and vision. This alignment helps create a sense of purpose and direction for the entire organization.
- Resource Allocation: MIH-CP strategic planning helps in allocating organizational and operational resources effectively by identifying priorities and identifying gaps in service delivery and organizational support.
- Adaptability: In a rapidly changing emergency services environment, MIH-CP strategic planning allows Fire and EMS organizations to be adaptable and responsive to emergency services trends, technological advancements, and other community, social, and external factors.
- Communication and Collaboration: The MIH-CP strategic planning process involves communication and collaboration among various levels of the organization as well as external agencies who are and will be critical to the program's success. This ensures that all organizational members and external agencies are on the same page regarding program strategic initiatives, fostering a cohesive and collaborative work environment.
- Decision Making: MIH-CP strategic planning better aligns the ability to make informed and timely decisions based on strategic initiative goals and timelines. The strategic plan will provide a roadmap for decision-makers to follow, reducing uncertainty and promoting consistency in decision-making across the organization and with County leadership.
- Long Term Vision: MIH-CP strategic planning encourages organizations to think long-term. It helps in creating a vision for the future and identifying the steps required to realize that vision, fostering sustainability and longevity.
- Employee Engagement: Involving employees in the MIH-CP strategic planning process fosters a sense of ownership and commitment. When employees understand the organization's goals and their role in achieving them, it enhances motivation and engagement.

The overall methodology for the MIH-CP strategic planning includes concepts from the Customer-Centered Strategic Planning (CCSP) process. This planning process places a strong emphasis on understanding and meeting the needs of customers. In the case of a Fire and EMS department, this includes internal system members, external customers, or users of system services. And external agencies who the department and each specific program must collaborate with to successfully achieve goal outcomes. The process is designed to align an organization's strategies and actions with the expectations and preferences of its members and customers.

The key components of the Customer-Centered Strategic Planning process concepts CPSM utilized in our plan development methodology included:

- In-person stakeholder meetings to understand EMS and MIH-CP operations better and to gain input on system strengths, weaknesses, and opportunities, what is working or not working, needs of the program deliverables, current state of the program, and the future. Stakeholder meetings included:
  - Prince George's County Fire/EMS Department EMS and Operations Command Staff.
  - Prince George's County Fire/EMS Department MIH-CP staff.
  - Prince George's County Fire/EMS Department Medical Director.
  - Prince George's County Department of Public Health staff.
  - Prince George's County Department of Social Services staff.

Lastly, CPSM consultants were furnished with numerous reports and summary documents by the Prince George's County Fire/EMS Department and MIH-CP staff, Prince George's County Health Department, Prince George's County Social Services Department, and numerous documents from Prince George's County and State of Maryland websites. Information on MIH-CP, and EMS response strengths, weaknesses, organizational and operational needs, and deployment of resources was reviewed by the CPSM MIH-CP strategic planning team and are utilized throughout this document.

In summary, the MIH-CP strategic planning process is a comprehensive and forward-thinking approach that is designed to guide the MIH-CP program navigate challenges, seize opportunities, and achieve sustained success.

As a Mobile Integrated Health-Community Paramedicine Program, we continually ask……

SECTION 3. EMS SERVICE DELIVERY SYSTEM AND EMS RISK PROFILE

The Community

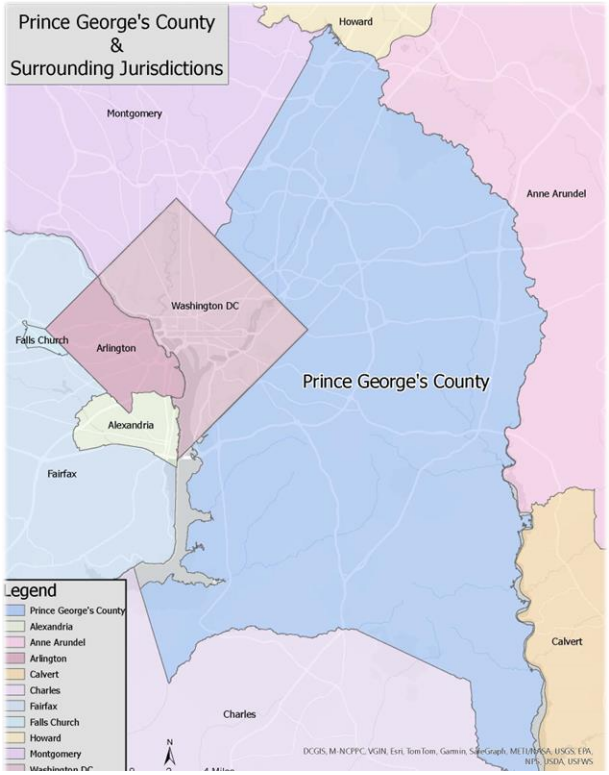
Prince George's County is in central Maryland, borders the eastern area of Washington D.C., is a part of the National Capital Region, and is a member of the Metropolitan Washington Council of Governments. Because of its adjacency to the nation's capital, Prince Georges County is home to several federal government facilities and Joint Base Andrews.

Geographically, the County is contiguous with Washington D.C. to the west, Montgomery County, MD to the northeast, Howard County, MD to the north, Anne Arundel County, MD to the east, Calvert County, MD to the southeast, and Charles County, MD to the south. The City of Alexandria, VA and the counties of Fairfax, VA and Arlington, VA are contiguous by the Potomac River. The Virgina counties are mentioned here as they are a part of the National Capital Region and are members of the Metropolitan Washington Council of Governments.

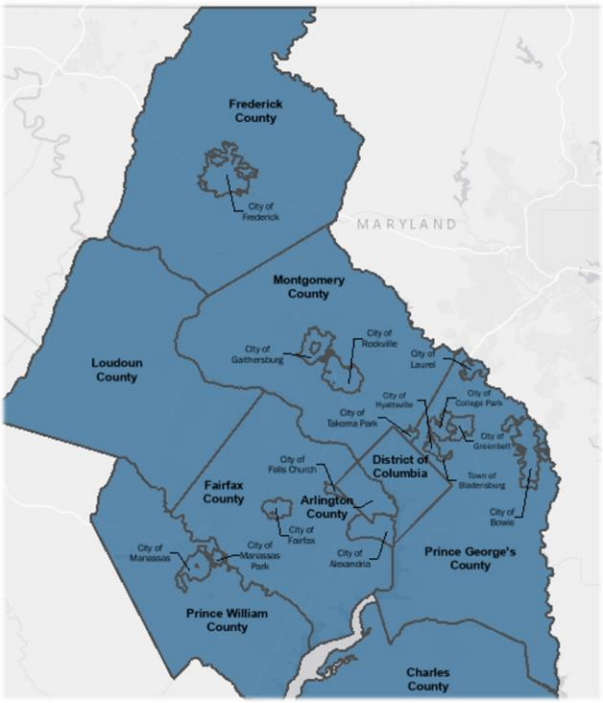
The total area of the county is 499 square miles (land and water). The eastern and southwestern borders of the county are formed by rivers. The east by the Patuxent River and the southwestern by the Potomac River.

Figure 1: Contiguous Jurisdictions and the Metropolitan Washington Council of Governments

Prince George's County & Contiguous Jurisdictions



Metropolitan Washington Council of Governments



Source: Washington Metropolitan Council of Governments

Prince George's County also includes several incorporated cities and towns that include:

Cities

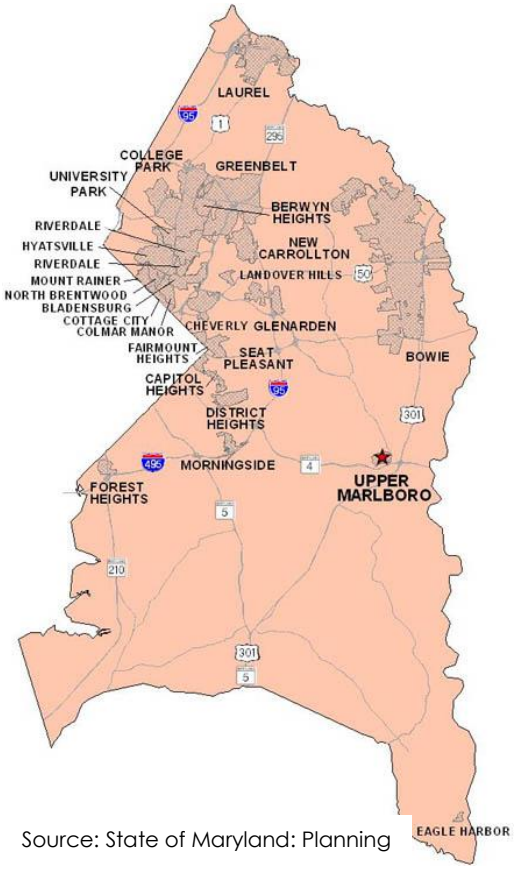
Bowie	Glenarden	Laurel
College Park	Greenbelt	Mount Ranier
District Heights	Hyattsville	New Carrollton
	Seat Pleasant	

Towns

Berwyn Heights	Colmar Manor	Forest Heights	University Park
Bladensburg	Cottage City	Landover Hilles	North Brentwood
Brentwood	Eagle Harbor	Morningside	Riverdale Park
Capital Heights	Edmonston	North Brentwood	University Park
Cheverly	Fairmount Heights	Riverdale Park	Upper Marlboro*

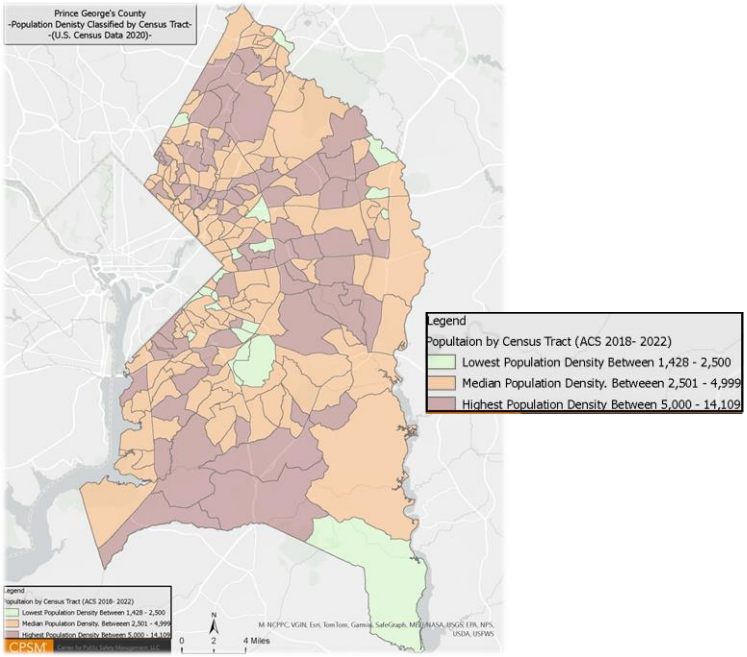
*Upper Marlboro is the County Seat.

Figure 2: Incorporated Cities and Towns and Population Density



Source: State of Maryland: Planning

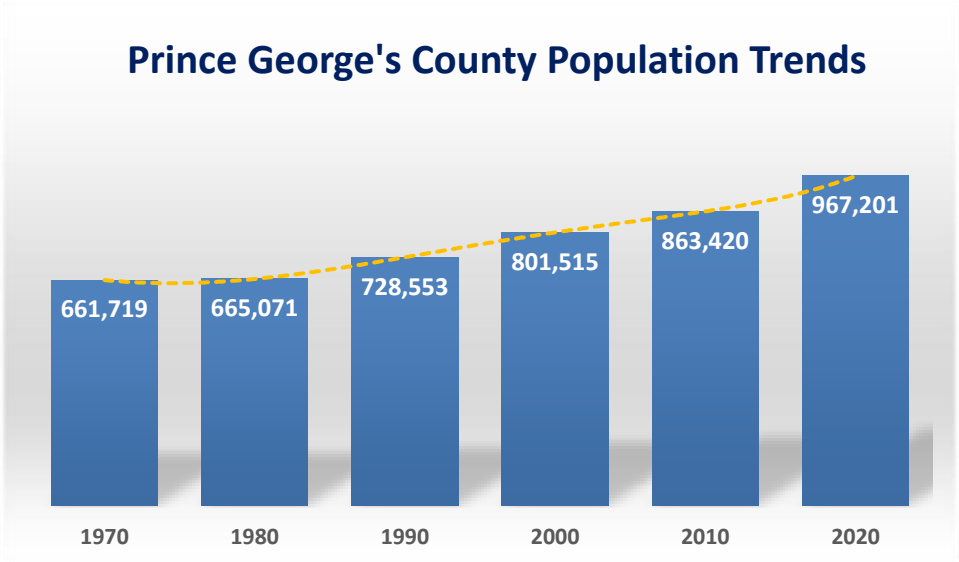
The county has a mix of densified population centers as illustrated in the map below. The dark shading represents the most densified area. The light green shade represents the least densified.



Population and Population Components

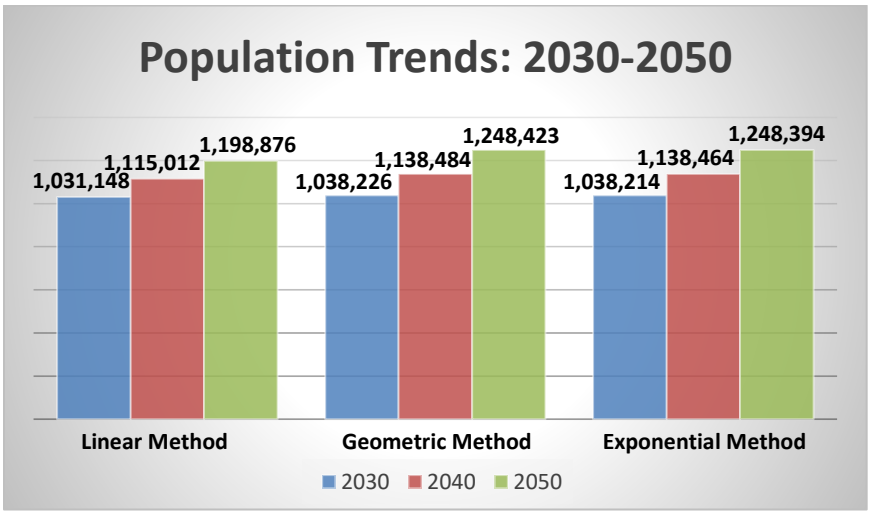
The 2020 U.S. Census for Prince George's County was 967,201. This is a twelve percent increase over the 2010 census population of 863,420.[1] From 1970 to 2020, the County's population has increased by just over forty-six percent.[2]

Figure 3: Population Trends: 1970-2020



According to the *Prince George's County Population, Housing, and Economic Survey, 2023*, the county's population will continue to trend upward, with the population reaching just over one million in 2030 and approaching or just over 1.2 million by 2050. The *Prince George's County Population, Housing, and Economic Survey, 2023* utilized three projection methods to determine the population trends. These included linear, geometric, and exponential methods.

Figure 4: Population Trends: 2020-2050



As the population in Prince George's County is projected to continue to increase, EMS demand and the demand on healthcare services overall will continue to increase as well.

1. U.S. Census Quick Facts: Prince George's County, MD.
2. Prince George's County Population, Housing, and Economic Survey, 2023

Population Components

In Prince George's County, the following population components, as extracted from the U.S. census information, made up the county's population in 2020, unless otherwise indicated:[3]

- Children under the age of five represent 5.9 percent of the population.
- Persons under the age of 18 represent 21.8 percent of the population.
- Persons over the age of 65 represent 15.6 percent of the population.
- Female persons represent 51.6 percent of the population.
- There are 2.75 persons per household in Prince George's County, (2018-2022).
- The median household income was $97,935.
- Per capita income in past 12 months (in 2022 dollars), 2018-2022: $48,833
- People living in poverty make up 10.9 percent of the population.
- Persons without health insurance, under age 65: 10.9%.
- Housing Units: 369,064 (July 1, 2023)
- Owner-occupied housing unit rate, 2018-2022: 62.4%
- Black or African American alone represents 62.9% percent of the population. The remaining percentage of population by race includes White alone (not Hispanic or Latino) at 28.1%, American Indian or Alaska Native alone 1.6%, Asian alone 4.3%, Native Hawaiian and other Pacific Islanders alone 0.2%, two or more races 2.9%, Hispanic or Latino at 22.8%, and White alone, not Hispanic or Latino 11.0%.

Another document CPSM utilized when researching population and population components is the *Demographic Trends and Patterns in Prince Georges County 2010-2020*. This document outlines population component trends as indicated in the next figure.

Figure 5: Population Component Trends: 2010-2010[4]

Data Category	2010	2020	Absolute Change	Percent Change
Total:	863,420	967,201	103,781	12.02%
Hispanic or Latino	128,972	205,463	76,491	59.31%
Not Hispanic or Latino	734,448	761,738	27,290	3.72%
Population of one race	716,760	730,330	13,570	1.89%
White alone	128,853	109,060	(19,763)	-15.36%
Black or African alone	548,439	571,866	23,427	4.27%
American Indian and Alaska Native alone	2,156	1,887	(269)	-12.48%
Asian alone	34,815	41,436	6,621	19.02%
Native Hawaiian and other Pacific Islander alone	330	335	5	1.52%
Some other race alone	2,167	5,746	3,579	165.16%
Two or more races	17,688	31,408	13,720	77.57%
People of color	605,595	652,678	47,083	7.77%
Percent of total population	70.14%	67.48%	45.37%	64.68%

Source: U.S. Census Bureau, 2010 and 2020 PL94-171 data

3. U.S. Census Bureau QuickFacts: Prince Georg's County, MD.
4. Demographic Trends and Patterns in Prince Georges County 2010-2020

In terms of numbers, the figure above tells us that from 2010 to 2020 the largest increases in population component are:

- Hispanic or Latino population increased 59.31%.
- Two or more races increased 77.57%.
- Some other race alone increased 165.16%.

In summary, the overall population in Prince George's County is on a trend to top 1 million when the next decennial population is conducted in 2030. The largest population component is Black or African American who represents 62.9% percent of the population (2020 census). From 2010-2020, the Hispanic or Latino population grew by 59.31%. Of note, people living in poverty make up 10.9 percent of the population which statistically mirrors those under age 65 who do not have health insurance, which is also 10.9%. It is statistically likely these two groups have access to healthcare challenges as well, which directly impacts EMS demand.

Emergency services in Prince George's County other than Fire and EMS that the Fire/EMS department interacts with include:

Prince George's County Police Department serves as the primary law enforcement agency in and for the County. This agency provides the full scope of contemporary law enforcement activities to include patrol, special operations, support services, and several investigation divisions.[5]

Prince George's County Sheriff's Office serves as the primary law enforcement agency of the County courthouses and property as well as serving court-ordered warrants, orders, and other similar official court documents. The Sheriff's Office also provides a limited scope of law enforcement activities in conjunction with the Prince George's County Police Department.[6]

The Maryland-National Capital Park Police provides law enforcement activities and enforcement of park rules and regulations 24 hours a day in County parks as a function of the Maryland-National Capital Park and Planning Commission.[7]

The Maryland Natural Resources Police provide law enforcement activities in state parks and waterways in and around the County.[8]

The Maryland Transportation Authority provides law enforcement activities on designated transportation authority highways. This includes Maryland Route 200 in Prince George's County.[9]

5. Prince George's County.
6. Prince George's County Office of the Sheriff.
7. www.pgparks.com/safety-policy/park-police
8. Maryland.Gov; Department of Natural Resources
9. Maryland Department of Transportation

The Maryland Department of State Police provides the full scope of law enforcement activities and includes an Aviation Command that operates medevac operations throughout the state. Fire/EMS primary interaction with State Police is on state and federal highways and when a medevac is needed.[10]

In addition to the above, there are also twenty-six municipal police departments in the county, the Fire/EMS Department interacts with on incidents and potentially will with the Mobile Integrated Health program.

Fire/EMS Department - EMS System and Service Area Overview

Prince George's County EMS system delivery is provided through the Prince George's County Fire/EMS Department. Prince George's County Fire/EMS Department (PGFD) is a combination Fire-EMS agency that provides services from fifty-four (54) stations through 1000+ volunteer members and 800+ career staff.

Organizationally, the department comes under the direction of the Fire Chief, who is directly supported by administrative and operational command officers. The three major command branches include Emergency Operations, Support Services, and Administrative Services. Each of these branches is headed by a Deputy Fire Chief.

The Emergency Operations Branch is the largest branch in the PGFD. This branch is responsible for all emergency response operations to include fire suppression, EMS, and special operations. Emergency Operations Branch assets are deployed from forty-eight (48) stations that are organized into seven (7) districts or as designated in the PGFD-Battalions. Each battalion is led by a Battalion Chief. Overall, each shift (there are four shifts) is managed by an Assistant Chief.

Volunteer Services is also a direct report branch to the Fire Chief and is led by an Assistant Chief. This branch liaisons and coordinates with all volunteer agencies, the Fire Commission, and the Prince George's County Fire and Rescue Association.

EMS operational and administrative programs are in the Emergency Operations Branch. Operational services to include staff and deployable assets are managed and supervised by each shift Assistant Chief and Battalion Chiefs. At the granular level Company Officers, and EMS staff manage the day-to-day operations and EMS incident response. The Assistant Chief of EMS manages all EMS program functions to include credentialing, medical protocols, liaison with the Medical Director, EMS policy and guidelines, and the Mobile Integrated Health program.

When fully staffed, the PGFD deploys sixty (60) ambulances. This includes thirty-two (32) Basic Life Support (BLS) ambulances, twenty-six (26) Paramedic Ambulances (Advanced Life Support), and two ambulanced that have two ALS staff assigned (MD units). Additionally, the PGFD deploys ten (10) ALS staffed Engines (Paramedic Engines). Two stations, 828 in West Lanham Hills and 837 in Ritchie do not have EMS transports assets. These response districts receive EMS transport from the closest available resources when needed.

The next table outlines EMS resources in the County.

10. Maryland.Gov; Maryland Department of State Police

Table 1: EMS Transport and Paramedic Engine Resources

Unit #	Station Locations	Unit #	Station Locations
A801	Hyattsville	PA829	Silver Hill
PA802	Shady Glen	PA829B	Silver Hill
PA805	Capitol Heights	A829	Silver Hill
PE805	Capitol Heights	PA830	Landover Hills
PA806	Springdale	A830	Landover Hills
A806	Springdale	PE830	Landover Hills
A807	Riverdale	A831	Beltsville
A809	Bladensburg	A834	Chillum-Adelphi
A810	Laurel VFD	A835	Greenbelt
MD810	Laurel VFD	PA835	Greenbelt
A811	Branchville	A836	Baden
A812	College Park	PE836	Baden
A812B	College Park	PA838	Chapel Oaks
MD812	College Park	A838	Chapel Oaks
A813	Riverdale Heights	A839	Bowie- Belair
A814	Berwyn Heights	PA840	Brandywine
PA816	Bowie- Northview	PE840	Brandywine
A817	Boulevard Heights	PA841	Calverton
PA818	Glenndale	PE841	Calverton
A818	Glenndale	PA842	Oxon Hill
A819	Bowie- Old Town	PE842	Oxon Hill
PE 819	Bowie- Old Town	A843	Bowie-Mitchelville
PA820	Upper Marlboro	PA844	Chillum
PA821	Oxon Hill	A844	Chillum
PA823	Forestville	PE844	Chillum
A823	Forestville	PA845	Croom
A824	Accokeek	PA846	Largo
PA825	Clinton	A846	Largo
PA825B	Clinton	PE846	Largo
PA826	District Heights	PA847	Ft Washington
PA826B	District Heights	PA848	West Lanham Hills
A826	District Heights	PE848	West Lanham Hills
A827	Morningside		

Overall, at maximum staffing, the PGFD deploys:

32 - BLS ambulances (A designator)

26 - ALS Ambulances (PA Designator)

2 - ALS Medic Ambulances with two Paramedics assigned. (MD Designator)

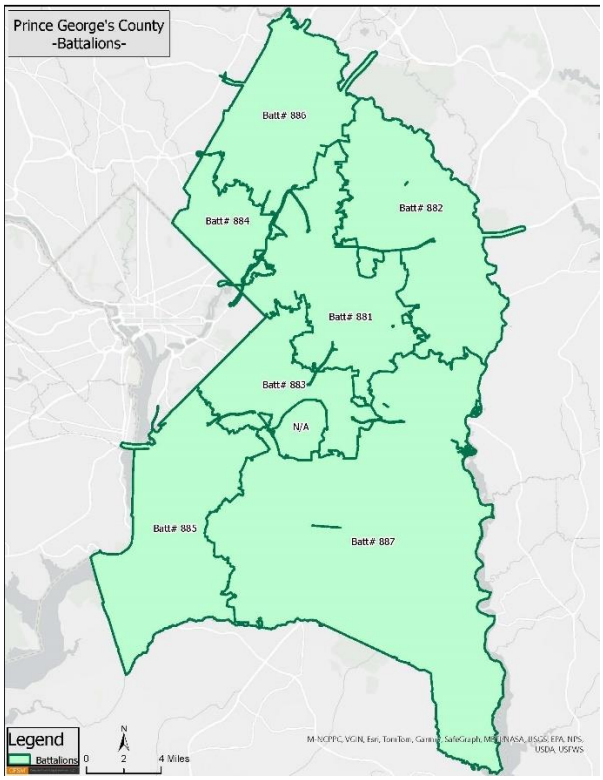
10-Paramedic Engines (PE Designator)

- All ambulances are licensed by the state as an ALS engine.
- Paramedic Engines have a Paramedic assigned and deploy with EMS-ALS equipment.
- All Career Officers are ALS Certified.
- All Firefighters are EMT or Paramedic certified.

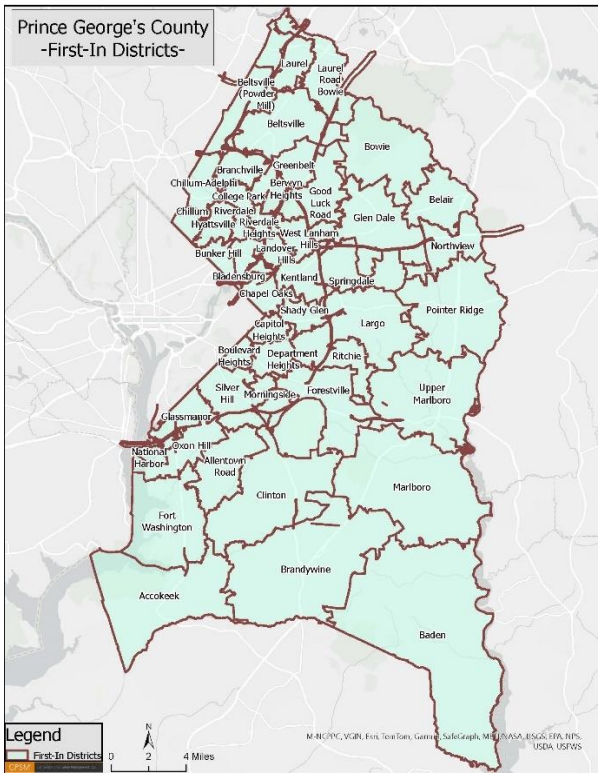
The next figure illustrates Emergency Operations Branch Battalion and Station districts. As discussed above, the PGFD responds from fifty-four (54) stations, which are grouped into seven (7) Battalion districts.

Figure 6: PGFD Battalion Districts and Station Districts

Battalion Districts



Station Districts



In May 2023, the PGFD released a department-wide strategic plan that included agency mission, vision, and values statements. This body of work is outlined next.

Mission Statement

The mission of the Prince George's County Fire/EMS Department is to serve our communities with excellence by providing the highest quality of risk reduction, fire suppression, rescue, emergency medical, and all-hazards response services to enhance the quality of life in Prince George's County.

Vision Statement

The Prince George's County Fire/EMS Department strives to be recognized as a progressive, innovative, and dynamic public safety leader committed to exemplary customer service and excellence in all our services.

Values

The Prince George's County Fire/EMS Department takes extreme PRIDE in our core values and is reflective in our service to our communities through:

Professionalism- We believe in the pursuit of excellence and in providing high-quality professional service with empathy, dignity, and compassion.

Respect- We strive to understand and embrace our differences, value the contributions of all, and treat everyone with courtesy and respect.

Integrity- We uphold the public's trust and hold each other accountable for our actions.

Diversity- We embrace diversity and promote an equitable and inclusive culture that provides opportunities for all.

Ethics- Our actions in our professional and personal lives will reflect the values and ideals of our County and the communities we serve in a manner that maintains integrity, honor, and trustworthiness.

EMS Risk Profile

When analyzing community risk in the context of Emergency Medical Services (EMS) and Mobile Integrated Health, several factors are considered to create a comprehensive picture of risks to public health, EMS, and the impacts on the overall health system. Typical components of an EMS risk assessment include:

- Understanding the age groups in the community and where the age cohorts exist (if possible) will assist in anticipating medical emergencies. Typically, older populations may have more chronic conditions and will need more care, while younger populations may face more trauma-related incidents.
- Lower income, no income, and limited or no healthcare insurance puts these population components at risk to limited access to healthcare, higher rates of chronic illness, and various healthcare risk factors.
- Densely populated areas typically create more frequent EMS calls, and it is a direct community risk to public safety agencies that provide EMS response. Identifying trends in the types of emergencies that occur in the community, should link to service delivery solutions such as BLS vs. ALS ambulances as the greatest percentage of calls may be lower acuity (not needing ALS services), and Mobile Integrated Health programs designed to improve

healthcare navigation and the overall well-being of population-specific clients. Additional factors like education, housing, employment, and environment, which influence overall community health, and the likelihood of EMS situations create various risks and demands on EMS.

- Every community has some level of chronic disease prevalence. Tracking chronic disease in the community can indicate where EMS and preventive health services, such as Mobile Integrated Health may be needed more frequently.
- Monitoring drug overdose patterns and locations is crucial, as these incidents often require immediate EMS response and public health/social services intervention.
- Every community has a level of at-risk population. This includes individuals with disabilities, those without access to transportation, non-English speakers, and those who may have unique challenges when access to healthcare is needed, and during emergencies.
- Locations and capacities of hospitals, clinics, urgent care, and public health centers in relationship to the demand for EMS and healthcare. Areas far from medical facilities (typically more rural areas) may require more resources or various access to health resources to reduce the burden on EMS and healthcare centers.
- Analyzing response times, patient outcomes, and resource resiliency can highlight where improvements are needed, either geographically or in terms of the type of services needed.

When considering these elements, EMS agencies can prioritize resources, improve response strategies, and reduce overall community risk through the implementation of meaningful programs to include those that focus on providing needed assistance and care to patients in the home setting, and navigating patients to the most appropriate healthcare center/agency with a focus on reducing the burden of EMS transport agencies and the hospital emergency department.

PGFD EMS Workload Analysis

An indication of the community's EMS risk is the type and number of EMS related incidents the EMS agency responds to. The entire PGFD service area is subject to these types of calls for service. This includes ALS, BLS, and Medic ambulances, and first-tier EMS response fire suppression apparatus.

Historical CPSM statistics tell us that EMS calls for service typically involve one patient whose symptoms are such that the capabilities of the initial arriving unit(s) can manage the call. Mass casualty incidents may occur in Prince George's County, and the impact on the department may be overwhelming, triggering the need for mutual aid.

The following tables and figures detail the call types and call type totals for the types of EMS-related risks for a three-year period between January 1, 2021, and December 31, 2023.

A more detailed analysis also looks at the most recent one-year period January 1, 20213-December 31, 2023. During this period, the PGFD responded to 132,833 EMS calls averaging 364 calls per day in 2023.

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Table 2: EMS Calls by Type January 1, 2023-December 31, 2023

Call Type	Total Calls	Calls per Day	Pct. Calls
Breathing difficulty	12,048	33.0	9.1
Cardiac and stroke	16,408	45.0	12.4
Fall and injury	21,361	58.5	16.1
Illness and other	46,089	126.3	34.7
Medical alarm	2,009	5.5	1.5
MVA	9,260	25.4	7.0
Overdose and psychiatric	7,525	20.6	5.7
Seizure and unconsciousness	14,300	39.2	10.8
EMS subtotal	**129,000**	**353.4**	**97.1**
Mutual aid	1,758	4.8	1.3
Non-EMS	2,075	5.7	1.6
Total	**132,833**	**363.9**	**100.0**

PGFD EMS Unit Workload

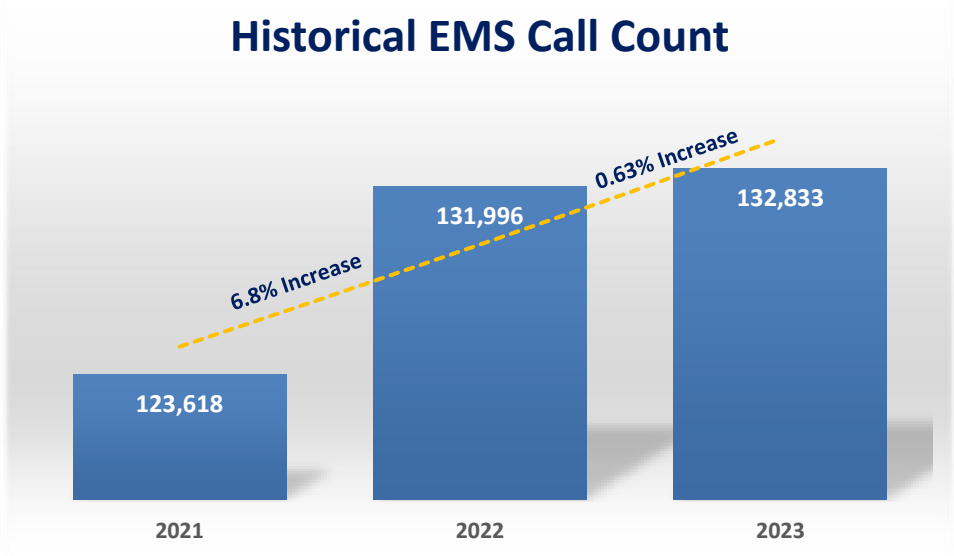
Daily Call Volume: 364 Calls/Day

Calls/Day-In County EMS: 353
Calls/Day Out of County: 5
Calls/Day Non-EMS: 6

(Above workload in averages)

CPSM also looked at the three-year historical EMS call count for the PGFD. This is outlined in the next figure.

Figure 7: Three Year Historical EMS Call Count: 2021, 2022, 2023



Historical EMS ambulance workload increased:

7% from 2021-2022 and 0.63% from 2022-2023.

Overall calls increased 7.45% from 2021-2023.

Over the same period, ambulance on task hours increased 14 percent from 144,313.8 in 2021 to 164,200.6 in 2023.

The next table looks at calls by units in each Battalion (calls in and out of the Battalion district). This table indicates that Battalion 881 and 883 ambulances are the busiest battalions in terms of EMS workload. The least busy Battalion is Battalion 882.

Table 3: EMS Calls by Battalion Area

Battalion Area	Total Calls	Calls per Day	Pct. Calls
881	28,638	78.5	21.6
882	10,344	28.3	7.8
883	27,461	75.2	20.7
884	19,325	52.9	14.5
885	15,709	43.0	11.8
886	16,260	44.5	12.2
887	13,331	36.5	10.0
Battalion subtotal	**131,068**	**359.1**	**98.7**
Joint Base Andrews	7	0.0	0.0
In-County subtotal	**131,075**	**359.1**	**98.7**
Out-of-County	**1,758**	**4.8**	**1.3**
Total	**132,833**	**363.9**	**100.0**

Battalion 881 and 883 managed 42.3% of all EMS ambulance calls in the 2023 analysis year.

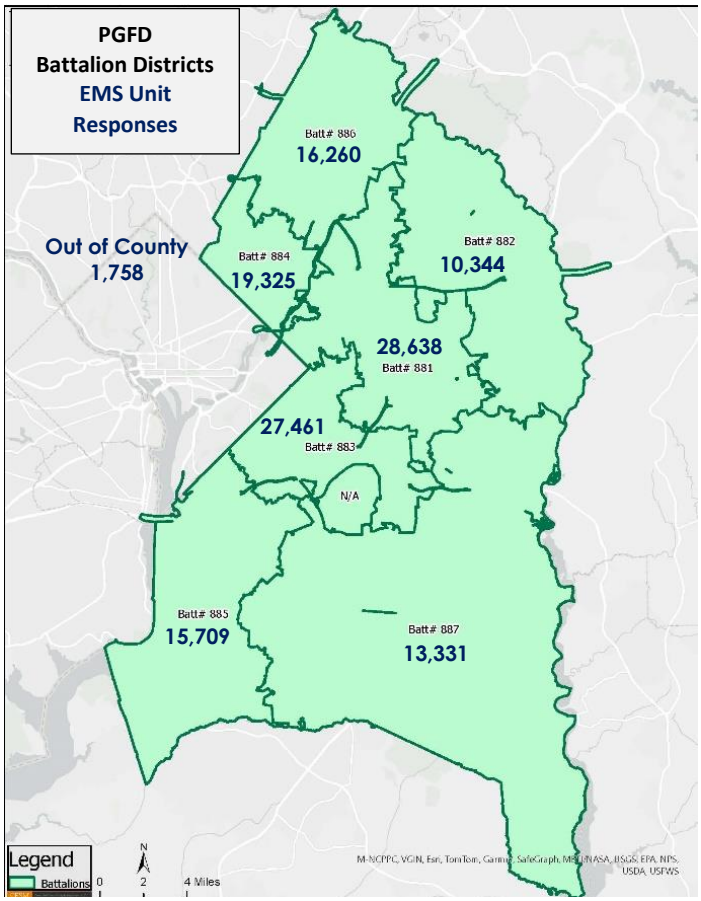


Table 4: 2023 Workload by Station Area

Battalion	Station Area	Calls
881	806	2,243
	828	3,808
	830	2,772
	833	4,173
	837	1,993
	838	2,408
	846	7,118
	848	4,123
	Subtotal	**24,830**
882	816	2,496
	818	2,777
	819	992
	839	2,217
	843	1,862
	Subtotal	**10,344**
883	802	3,163
	805	2,354
	817	2,245
	823	4,325
	826	5,145
	827	2,146
	829	8,083
	Subtotal	**27,461**
884	801	4,231
	807	892
	809	2,459
	812	1,575
	813	1,446
	834	3,941
	844	3,045
	855	1,736
	Subtotal	**19,325**
885	821	3,934
	824	1,036
	832	2,622
	842	3,560
	847	3,419
	858	1,138
	Subtotal	**15,709**
886	810	2,255
	811	1,663
	814	1,870
	831	1,911
	835	1,687
	841	2,139
	849	4,735
	Subtotal	**16,260**
887	820	2,313
	825	6,822
	836	500
	840	1,951
	845	1,745
	Subtotal	**13,331**

EMS units from Stations 829 and 846 were the busiest in the County for the 2023 analysis year.

EMS units from stations 801, 823, 826, 833, and 849 were the busiest when analyzing the next tier of workload.

Stations 807, 819, and 836 were the least busy for the 2023 analysis period.

The next table analyzes out-of-county workload. The highest recipient of mutual aid is Montgomery County followed by Charles County.

Table 5: Aid Given Workload by Jurisdiction: 2023

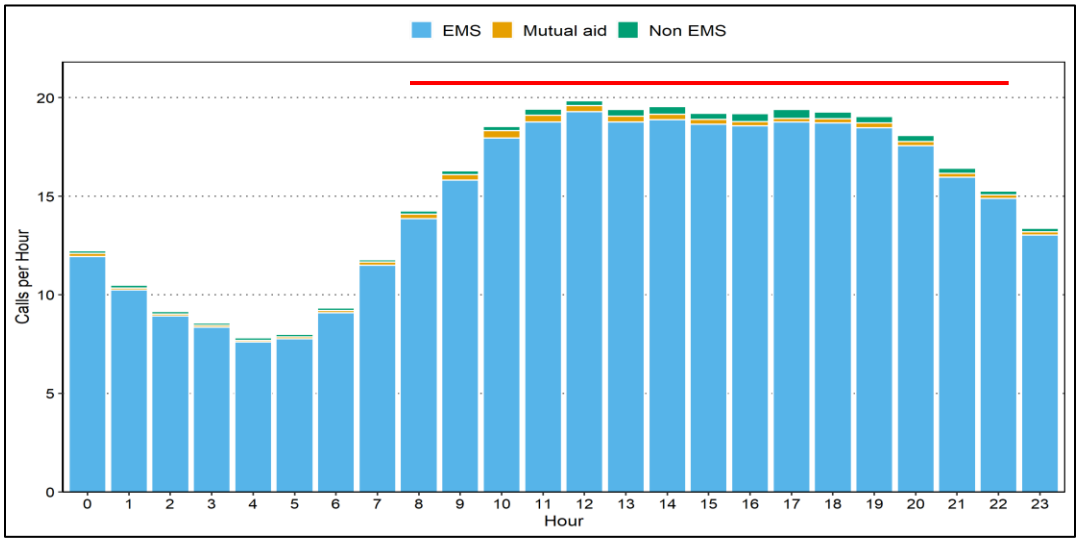
Jurisdiction	Calls
Alexandria	45
Anne Arundel	149
Charles	357
DC	15
Fairfax	17
Howard	22
Montgomery	1,146
St. Mary's	7

Total out of County EMS unit responses: 1,758.

It is important as well to look at ***EMS response activity*** over time, such as calls by month, calls by hour of the day, and calls by day of the week (Temporal Variation).

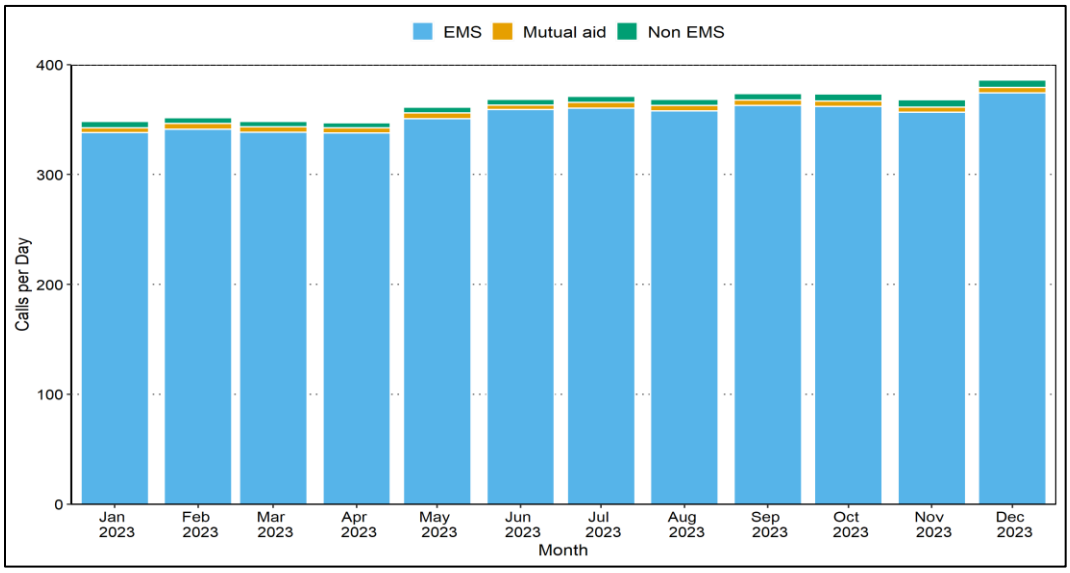
The next figures illustrate this for the 2023 analysis year. First, we look at PGFD responses by time of day (calls per hour). As the analysis shows, the PGFD has a higher demand for services between the hours of 10:00 am and 10:00 pm with the peak call trend beginning at 8:00 am and falling off at 11:00 pm.

Figure 8: Calls by Hour of Day



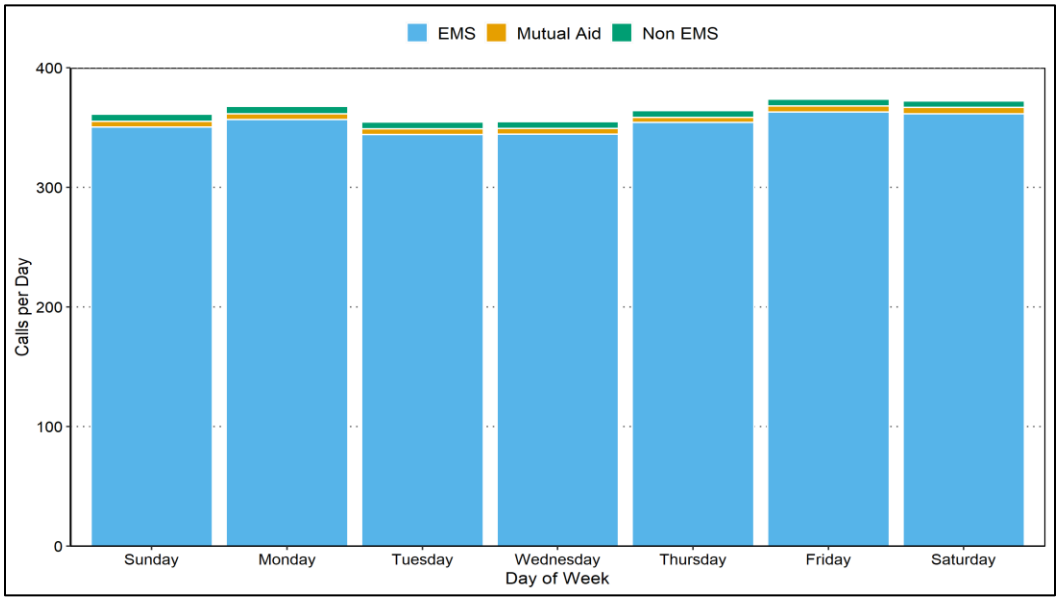
Next, we analyzed the fire and EMS demand by month of the year (calls per day). Demand is consistent during the months of January through April, with slight increases from May through November. The busiest month is December.

Figure 9: Calls by Month



Additionally, CPSM looks at responses by day of the week. Generally, demand is consistent on Sunday, Tuesday, Wednesday, and Thursday. The busier days of the week are Friday, Saturday, and Monday.

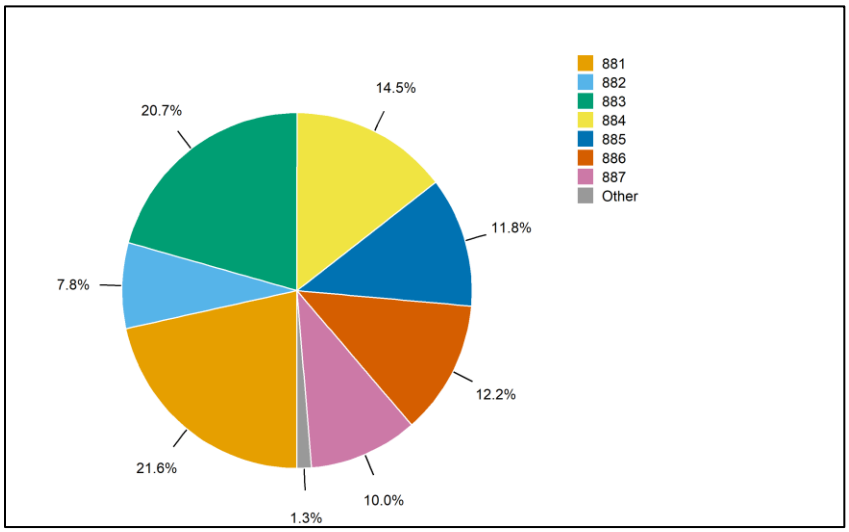
Figure 10: Calls by Day of the Week



PGFD EMS Demand Analysis

It is useful to look at geographic demand in addition to temporal and station response variations. Additionally, understanding population density and its relationship to demand is important, particularly when considering how to close response gaps in higher demand areas and in the planning of new EMS resources. Higher population centers will typically have increased demand and will require increased fire and EMS resources.

Figure 11: Percent of Calls by Battalion District



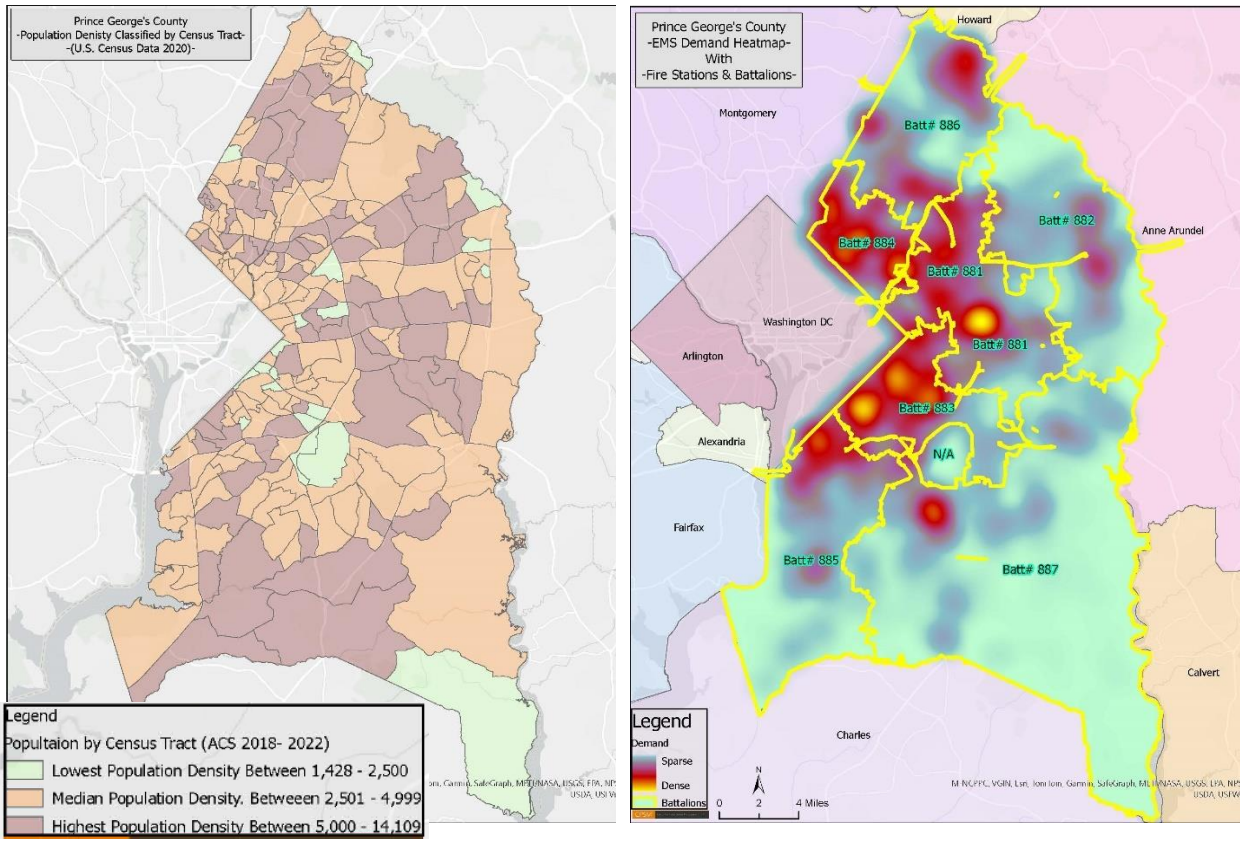
As reviewed above, Battalion districts 881 and 883 are the busiest in terms of EMS workload.

These response districts are followed by Battalions 884, 885, and 886. These districts are in the highest population centers in the county, which aligns with the high demand for EMS service.

The next maps show population density and EMS demand. ***Density corresponds with demand.***

Figure 12: EMS Demand and Population Density

Population Density **Demand Overlay: Battalion Districts**



The heaviest concentration of contiguous high demand areas follows the densely populated western side of the county that borders Washington D.C. (Battalions 881, 883, 884, and 885). Demand is also higher in the north area of the county that borders Montgomery and Howard Counties (Battalion 886). Additional pockets of high demand include the central-eastern area of Battalion 882 that borders Anne Arundel County, central Battalion 881 district, and the northwest area of the Battalion 887 district.

PGFD EMS Transport Analysis and Hospital System

Understanding EMS transport times, or time on task is critically important, particularly in busy-high demand EMS systems such as Prince Georges's County. Understanding bottlenecks in the transport continuum (on-scene times -transport times – hospital transfer times) will align decision-makers with solutions in overall system efficiencies. As an example, if hospital transfer times are extended at primary hospitals, this creates an opportunity for EMS leadership to discuss timely ambulance to hospital transfer issues and challenges with hospital management, and response impacts that extended delays create on the entire pre-hospital system and community when ambulances are delayed in the clearing process.

EMS transport times should be closely monitored as a performance assessment in the overall EMS quality control system. If transport times consistently exceed benchmarks, adjustments may be needed in staffing, training, or infrastructure. Overall, understanding EMS ground transport times

is essential to improve patient care, optimize EMS operations, and enhance the overall emergency response system.

The next set of tables reviews PGFD EMS transport data for the 2023 analysis year. The first table looks at ambulance transport conversion rate (rate of calls that resulted in a transport).

Table 6: EMS Call to Transport Conversion Rate

Call Type	Number of Calls			Conversion Rate
	Non-Transport	Transport	Total	
Breathing difficulty	4,764	7,284	12,048	60.5
Cardiac and stroke	6,622	9,786	16,408	59.6
Fall and injury	10,847	10,514	21,361	49.2
Illness and other	24,682	21,407	46,089	46.4
Medical alarm	1,996	13	2,009	0.6
MVA	8,963	297	9,260	3.2
Overdose and psychiatric	3,627	3,898	7,525	51.8
Seizure and unconsciousness	5,688	8,612	14,300	60.2
EMS Subtotal	**67,189**	**61,811**	**129,000**	**47.9**
Non-EMS & Mutual Aid*	**2,965**	**868**	**3,833**	**22.6**
Total	**70,154**	**62,679**	**132,833**	**47.2**

*Non-EMS responses are when a PGFD ambulance responds to a non-EMS call (i.e., fire call) and a transport occurs.

Overall, the EMS call to transport ratio is 47.2 percent (172 transports/day). Medical Alarms represent the lowest transport rate at <1 percent of this call type. The higher transports rates are Breathing Difficulty, Cardiac and Stroke, and Seizure and Unconscious calls. ***The almost 50 percent transport conversion rate resulting in 172 transports/day does influence EMS unit resiliency.***

EMS Transport by Battalion Units

EMS transport by Battalion ambulances is consistent across all Battalions as outlined below (2023 analysis year).

Battalion Area	Number of Calls			Conversion Rate
	Non-Transport	Transport	Total	
881	15,116	13,522	28,638	47.2
882	5,268	5,076	10,344	49.1
883	14,927	12,534	27,461	45.6
884	10,090	9,235	19,325	47.8
885	8,764	6,945	15,709	44.2
886	8,195	8,065	16,260	49.6
887	6,827	6,504	13,331	48.8

The next two tables analyze the duration of EMS transport calls.

Table 7: Transport Call Duration by Call Type

Call Type	Non-transport		Transport	
	Duration (minutes)	Number of Calls	Duration (minutes)	Number of Calls
Breathing difficulty	41.7	4,764	115.0	7,284
Cardiac and stroke	48.5	6,622	120.0	9,786
Fall and injury	32.7	10,847	115.6	10,514
Illness and other	32.1	24,682	114.9	21,407
Medical alarm	19.5	1,996	108.2	13
MVA	14.3	8,963	114.7	297
Overdose and psychiatric	32.0	3,627	115.7	3,898
Seizure and unconsciousness	42.0	5,688	120.5	8,612
EMS Subtotal	**32.6**	**67,189**	**116.7**	**61,811**
Non-EMS & Mutual Aid	**27.9**	**2,965**	**109.6**	**868**
Total	**32.4**	**70,154**	**116.6**	**62,679**

Overall, the above table tells us that:

- The average non-transport call is 32.4 minutes.
- The average transport call time is 116.6 minutes or almost two (2) hours per call. ***This has a significant impact on EMS transport unit resiliency.***

The next table analyzes the transport time components that lead to each transport's time on task.

Table 8: Time Component Analysis for Transport Runs by Run Type (Minutes)

Run Type	Average Time Spent per Run				Number of Runs
	On Scene	Traveling to Hospital	At Hospital	Deployed	
Breathing difficulty	18.0	15.2	73.7	115.0	6,623
Cardiac and stroke	19.2	15.1	76.9	119.5	8,998
Fall and injury	18.4	16.5	69.7	114.3	9,774
Illness and other	17.6	16.2	70.6	114.6	19,318
Medical alarm	19.3	11.6	65.2	104.9	12
MVA	18.8	16.0	71.6	114.9	291
Overdose and psychiatric	16.0	16.1	71.9	115.7	3,522
Seizure and unconsciousness	19.7	15.6	76.2	120.0	7,906
EMS Subtotal	**18.2**	**15.9**	**72.7**	**116.2**	**56,444**
Non-EMS & Mutual Aid	**18.4**	**14.0**	**67.9**	**109.7**	**681**
Total	**18.2**	**15.8**	**72.6**	**116.2**	**57,125**

The table above tells us that:

- Transport unit on-scene time is on average 18.2 minutes ***(efficient).***
- Travel time to hospital is on average 15.8 minutes ***(efficient)***.
- Hospital turnover time is on average 72.6 minutes ***(inefficient).***

The extended time turning over a patient at the hospital is inefficient and has a significant impact on overall EMS transport unit resiliency.

The next table analyzes hospital destinations for PGFD EMS units for the 2023 analysis year. Included in the count are transports that had complete time stamps (57,125). Hospitals that have extended turnover times are highlighted.

Table 9: Time Component Analysis for Transport Runs by Destination (Minutes)

Transport Destination	Average Time Spent per Run				Runs
	On Scene	Traveling to Hospital	At Hospital	Deployed	
Anne Arundel Med Ctr	20.1	22.9	82.5	135.5	2,193
Baltimore Washington Med Ctr	19.7	30.9	111.5	173.8	17
Bowie Health Ctr	17.0	16.1	62.1	106.0	1,554
BSTC	24.3	27.5	63.9	126.8	31
Calvert Health Med Ctr	20.3	33.2	74.0	139.8	254
Charles Regional Med Ctr	19.8	28.7	76.2	136.6	552
Children's at United Med Ctr	14.6	14.1	53.3	91.0	563
Children's National Med Ctr	16.5	22.3	65.2	112.8	1,683
Doctor's Community Hospital	18.2	13.8	72.7	114.1	9,724
Fort Washington Hospital	17.2	14.8	75.5	117.9	4,036
George Washington Univ Hospital	21.0	28.3	87.2	146.3	80
Georgetown Univ Hospital	21.9	36.9	71.2	138.3	33
Holy Cross Hospital	18.8	18.8	61.6	108.0	2,960
Howard County General Hospital	19.5	21.4	66.8	116.5	517
Howard Univ Hospital	17.8	22.6	69.0	119.2	112
Inova Fairfax	21.2	21.3	69.3	121.4	1,216
Inova Mount Vernon	21.2	23.6	67.0	121.5	582
Johns Hopkins Med Ctr	19.8	43.4	96.4	168.4	15
Laurel Regional Hospital	16.2	15.6	63.6	105.3	2,811
MedStar Montgomery Med Ctr	21.2	25.3	60.2	115.8	40
MedStar Southern Maryland Hospital	18.3	14.6	78.1	120.6	9,956
MedStar Trauma Center	19.5	19.4	55.7	103.3	595
Shady Grove Hospital	53.8	34.1	55.4	150.9	3
Sibley Memorial Hospital	18.5	43.8	62.7	134.6	6
St Mary's Hospital	11.3	77.3	39.1	143.1	3
Suburban Hospital	21.9	23.3	67.0	121.3	194
United Med Ctr	14.6	11.9	62.9	99.4	1,440
Univ Maryland Capital Reg Med Ctr	18.5	12.4	81.6	121.7	8,098
VA Maryland Health Care	19.4	22.2	79.1	128.2	26
Veterans Administration Washington	19.7	26.0	76.2	131.2	235
Washington Hospital Ctr	18.7	17.4	67.7	112.4	2,141
White Oak Med Ctr	18.8	15.1	68.6	111.0	5,092
Other	18.2	17.3	71.4	141.8	343

Blue Highlight indicates hospitals in Prince George's County.

CPSM also looked at the three-year historical number of [illegible] EMS unit transport conversion rate as illustrated next.

Figure 13: Three Year Historical Transports: 2021, 2022, 2023

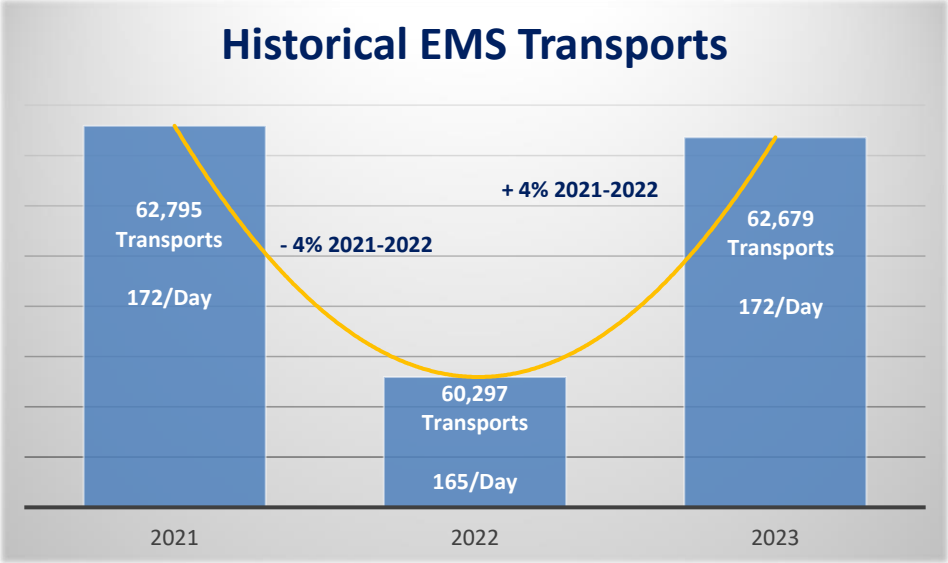
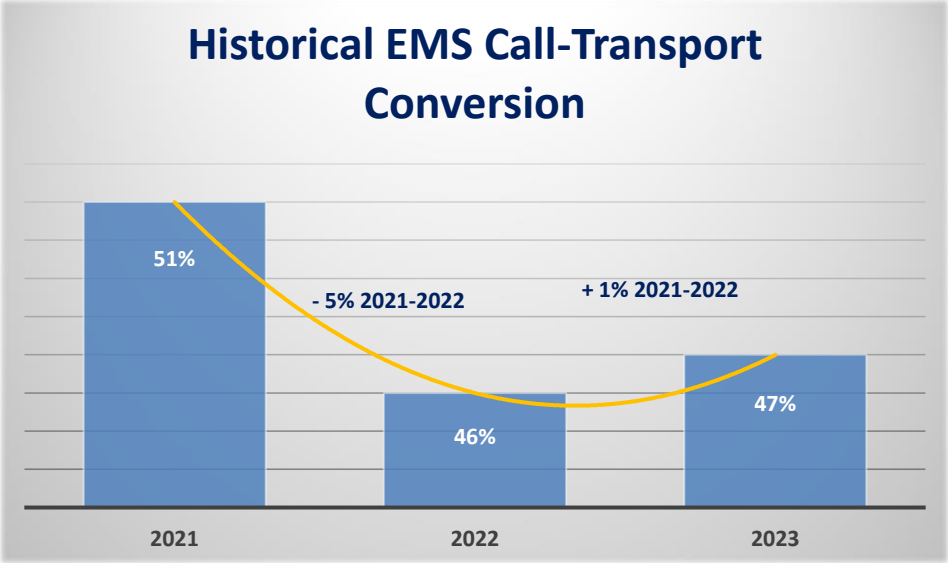


Figure 14: Three Year Historical Transport Conversion Rate



As indicated in the above figures between 2021 and 2022, EMS transports were slightly down as was the transport conversion ratio. Both increased slightly to near 2021 numbers in 2023.

As discussed throughout this section, the number of transports per day, and time spent on calls, specifically the time it takes to transfer the patient to the hospital staff so the unit can clear (hospital off-load time) has a significant impact on overall EMS transport unit resiliency, which ultimately affects EMS response times and overall system efficiencies.

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EMS Resiliency

Resiliency is an organization's ability to quickly recover from an incident or event, or to adjust easily to changing needs or requirements. Greater resiliency can be achieved by constant review and analysis of the response system and focuses on three key components:

- Resistance: The ability to deploy only resources necessary to control an incident and bring it to termination safely and effectively.
- Absorption: The ability of the agency to quickly add or duplicate resources necessary to maintain service levels during heavy call volume or incidents of high resource demand.
- Restoration: The agency's ability to quickly return to a state of normalcy.

For the most recent CPSM data analysis study period, January 1, 2023, through December 31, 2023, PGFD EMS units responded to 132,833 calls for service. The following tables analyze PGFD resiliency and response times. In this analysis, ***CPSM included all calls that occurred inside and outside Prince George's County (to include cancelled calls). We did this because responses outside of the city and canceled calls impact on the resilience of the department to respond to calls.***

The first table examines the workload in terms of runs for each district. Station 1 and 4 districts have the highest workload.

Table 10: Workload by Battalion District

Battalion Area	Calls	Percent Calls	Runs	Runs Per Day
881	24,830	18.7	27,086	74.2
882	10,344	7.8	11,236	30.8
883	27,461	20.7	29,825	81.7
884	19,325	14.5	21,139	57.9
885	15,709	11.8	16,763	45.9
886	16,260	12.2	18,222	49.9
887	13,331	10.0	14,162	38.8
Battalion Areas Subtotal	**131,068**	**98.7**	**142,758**	**391.1**
JBA	7	0.0	7	0.0
Mutual Aid	1,758	1.3	1,781	4.9
Total	**132,833**	**100.0**	**144,546**	**396.0**

The Battalion 881, 883, and 884 are the busiest EMS units in the County.

The busiest EMS units by stion include:

Station 829 (Battalion 883): 8,083 Calls

Station 846 (Battalion 881): 7,118 Calls

Station 825 (Battalion 887): 6,882 Calls

Station 826 (Battalion 5,145): 5.145 Calls

Each EMS unit's ability to respond to calls in their first due area by Battalion is examined in the next table. The lower the percentage responded in the first due area the less resilient the entire district is. Another factor is the percentage responded to in the first due area (the percentage of calls toned out in a district and that district's resources availability to respond). ***Battalion's 881 and 887 have the least resiliency. Battalion 886 is the most resilient. Overall, there are absorption and resistance resiliency challenges in these stations and Battalions 88 and 887 with moderate challenges in the Battalion 882 district.***

Table 11: Availability to Respond to Calls in First Due Area by Battalion

Battalion Area	Calls in Area*	First Due Responded	Percent Responded	First Due Arrived	Percent Arrived	First Due First	Percent First
881	24,381	17,820	73.1	17,667	72.5	17,535	71.9
882	9,074	7,263	80.0	7,228	79.7	7,198	79.3
883	23,680	20,117	85.0	20,058	84.7	20,004	84.5
884	16,617	14,594	87.8	14,542	87.5	14,486	87.2
885	13,237	11,502	86.9	11,466	86.6	11,441	86.4
886	14,130	12,499	88.5	12,452	88.1	12,409	87.8
887	11,505	8,614	74.9	8,562	74.4	8,520	74.1
Total	**112,624**	**92,409**	**82.1**	**91,975**	**81.7**	**91,593**	**81.3**

The next table looks at frequency of overlapping calls in each fire management zone. District 1 has the lowest percentage of no overlapped calls, meaning they have a higher frequency of concurrent calls. District 2 has a higher percentage of no overlapping calls meaning they have concurrent calls less frequently.

Table 12: Frequency of Overlapping Calls by Fire District

Battalion	Scenario	Number of Calls	Percent of All Calls	Total Hours
881	No overlapped call	905	3.2	969.874
	Overlapped with one call	2,348	8.2	1,336.857
	Overlapped with two calls	3,731	13.0	1,463.414
	Overlapped with three calls	4,486	15.7	1,324.351
	Overlapped with four calls	4,417	15.4	1,065.207
	Overlapped with five calls	3,901	13.6	821.148
	Overlapped with six calls	3,176	11.1	567.410
	Overlapped with seven calls	2,268	7.9	355.609
	Overlapped with eight calls	1,493	5.2	225.359
	Overlapped with nine calls	941	3.3	121.392
	Overlapped with ten or more calls	972	3.5	116.2
882	No overlapped call	2,086	20.2	2,584.806
	Overlapped with one call	2,862	27.7	1,902.849
	Overlapped with two calls	2,564	24.8	1,131.219
	Overlapped with three calls	1,557	15.1	521.999
	Overlapped with four calls	783	7.6	210.704
	Overlapped with five calls	323	3.1	81.445
	Overlapped with six or more calls	169	1.7	31.3

88.6% of all calls are overlapped by two or more calls.

52.1% of all calls are overlapped by two or more calls.

Battalion	Scenario	Number of Calls	Percent of All Calls	Total Hours
883	No overlapped call	922	3.4	983.559
	Overlapped with one call	2,462	9.0	1,440.990
	Overlapped with two calls	4,005	14.6	1,531.681
	Overlapped with three calls	4,596	16.7	1,374.743
	Overlapped with four calls	4,464	16.3	1,112.936
	Overlapped with five calls	3,904	14.2	804.651
	Overlapped with six calls	2,924	10.6	512.949
	Overlapped with seven calls	1,924	7.0	301.269
	Overlapped with eight calls	1,157	4.2	159.195
	Overlapped with nine or more calls	1,103	4.1	134.5
884	No overlapped call	1,837	9.5	1,875.587
	Overlapped with one call	3,656	18.9	1,984.501
	Overlapped with two calls	4,371	22.6	1,625.564
	Overlapped with three calls	3,902	20.2	1,081.572
	Overlapped with four calls	2,762	14.3	623.021
	Overlapped with five calls	1,574	8.1	297.127
	Overlapped with six calls	751	3.9	125.492
	Overlapped with seven calls	292	1.5	42.199
	Overlapped with eight or more calls	180	0.9	25.1
885	No overlapped call	2,104	13.4	2,258.217
	Overlapped with one call	3,767	24.0	2,077.663
	Overlapped with two calls	3,851	24.5	1,464.410
	Overlapped with three calls	2,853	18.2	855.758
	Overlapped with four calls	1,774	11.3	427.528
	Overlapped with five calls	847	5.4	186.691
	Overlapped with six calls	351	2.2	58.124
	Overlapped with seven or more calls	162	1.1	25.1
886	No overlapped call	2,065	12.7	2,206.879
	Overlapped with one call	3,694	22.7	2,051.857
	Overlapped with two calls	3,963	24.4	1,511.201
	Overlapped with three calls	3,184	19.6	932.026
	Overlapped with four calls	1,886	11.6	439.852
	Overlapped with five calls	931	5.7	185.198
	Overlapped with six calls	353	2.2	61.604
	Overlapped with seven or more calls	184	1.1	26.1
887	No overlapped call	1,890	14.2	2,188.842
	Overlapped with one call	2,911	21.8	1,863.059
	Overlapped with two calls	2,946	22.1	1,351.516
	Overlapped with three calls	2,486	18.6	866.782
	Overlapped with four calls	1,643	12.3	463.923
	Overlapped with five calls	844	6.3	198.624
	Overlapped with six calls	385	2.9	82.019
	Overlapped with seven calls	158	1.2	29.378
	Overlapped with eight or more calls	68	0.5	9.0

87.6% of all calls are overlapped by two or more calls.

71.6% of all calls are overlapped by two or more calls.

62.6% of all calls are overlapped by two or more calls.

64.6% of all calls are overlapped by two or more calls.

64% of all calls are overlapped by two or more calls.

Battalion	Scenario	Number of Calls	Percent of All Calls	Total Hours
JBA*	No overlapped call	7	100.0	5.786
Mutual Aid Area	No overlapped call	1,337	76.1	1,440.929
	Overlapped with one call	364	20.7	192.701
	Overlapped with two calls	51	2.9	19.763
	Overlapped with three calls	6	0.3	0.986

23.9% of Mutual Aid Calls are Overlapped with one or more calls.

Table 13: Frequency Distribution of the Number of Calls

Calls in an Hour	Frequency	Percentage
1	6	0.0
2	30	0.3
3	64	0.7
4	127	1.4
5	179	2.0
6	257	2.9
7	335	3.8
8	335	3.8
9	415	4.7
10	414	4.7
11	437	5.0
12	459	5.2
13	494	5.6
14	475	5.4
15	552	6.3
16	497	5.7
17	534	6.1
18	503	5.7
19	486	5.5
20	428	4.9
21	365	4.2
22	330	3.8
23	259	3.0
24	213	2.4
25	189	2.2
26	124	1.4
27	92	1.1
28	67	0.8
29	33	0.4
30	24	0.3
31	14	0.2
32+	23	0.3
Total	**8,760**	**100.0**

This resiliency measure is the frequency distribution of calls, or how many calls are occurring in an hour.

The table to the left tells us that countywide, during 88% of the hours in a one-year period (2023) there were 9 or more calls in an hour.

50.5% of the 88% of 9 or more calls in an hour, there were between 11 and 19 calls in an hour.

25% of the 88% of 9 or more calls in an hour, there were between 20 and 32 calls in an hour.

Coupled with the average transport time per EMS unit of 116 minutes (2-hours), there are absorption and restoration resiliency challenges in PGFD EMS deployment system.

The next table looks at the duration of calls, a measure that contributes to overlapping calls in a fire management zone, particularly those that last one or more hours.

In Prince George's County:

- 30 percent of all calls were managed in 30 minutes or less.
- 19 percent of all calls were managed in 30 minutes to one hour.
- 32 percent of all calls were managed in one to two hours.
- 19 percent of all calls were managed in two or more hours.

51% of all calls are managed in 1-2 or 2 or more hours, affecting overall restoration resiliency.

Table 14: Calls by Type and Duration

Call Type	Less than 30 Minutes	30 Minutes to One Hour	One to Two Hours	Two or More Hours	Total
Breathing difficulty	1,899	2,355	4,902	2,892	12,048
Cardiac and stroke	1,934	3,325	6,706	4,443	16,408
Fall and injury	5,944	4,301	6,923	4,193	21,361
Illness and other	13,530	10,011	14,345	8,203	46,089
Medical alarm	1,666	298	41	4	2,009
MVA	8,374	457	267	162	9,260
Overdose and psychiatric	2,055	1,425	2,531	1,514	7,525
Seizure and unconsciousness	2,150	2,763	5,484	3,903	14,300
EMS subtotal	**37,552**	**24,935**	**41,199**	**25,314**	**129,000**
Mutual aid	638	265	579	276	1,758
Non-EMS	1,440	409	150	76	2,075
Total	**39,630**	**25,609**	**41,928**	**25,666**	**132,833**

Effect on Response Times

EMS systems that experience heavy demand and long transport times often have increased response times as units are often out of position and typically crisscrossing their first due and contiguous response districts. These factors impact PGFD response times as outlined in the next tables.

CPSM analyzed PGFD response times. Our analysis included only emergency calls and only calls with complete time stamps.

Overall, in 2023:

The average total response time was 10.1 minutes (call processing to arrival on scene).

The 90th percentile response time was 16.0 minutes (call processing to arrival on scene).

The next table reviews response times by call type.

Table 15: Average and 90th Percentile Response Times by Call Type (Minutes)

Call Type	Average Response Time				90th Percentile Response Time				Call Count
	Dispatch	Turnout	Travel	Total	Dispatch	Turnout	Travel	Total	
Breathing difficulty	0.6	1.2	7.0	8.8	0.9	2.0	11.0	13.0	11,203
Cardiac and stroke	0.7	1.2	7.1	8.9	1.0	1.9	11.3	13.4	15,245
Fall and injury	0.9	1.2	8.5	10.5	1.2	1.9	14.3	16.7	15,581
Illness and other	0.8	1.2	9.2	11.2	1.1	2.0	15.7	17.9	36,835
MVA	0.8	1.1	5.8	7.7	1.4	1.9	9.4	11.7	5,055
OD	0.8	1.2	9.8	11.9	1.2	2.1	17.7	20.3	4,441
Seizure and UNC	0.7	1.1	7.4	9.2	1.0	1.9	12.0	14.0	13,206
EMS subtotal	**0.8**	**1.2**	**8.2**	**10.1**	**1.1**	**2.0**	**13.8**	**16.0**	**101,566**
Non-EMS	1.5	1.0	5.5	8.0	2.4	1.8	9.2	13.2	922
Total	**0.8**	**1.2**	**8.2**	**10.1**	**1.1**	**2.0**	**13.8**	**16.0**	**102,488**

Note: OD=Overdose and psychiatric; UNC= Unconsciousness.

Higher acuity calls are typically managed with red lights and sirens. These responses are notable in the above table and include: breathing difficulty, cardiac and stroke, motor vehicle accidents, and seizure & unconscious calls that collectively have response times on average of 8.65 minutes and 13.03 minutes at the 90th percentile.

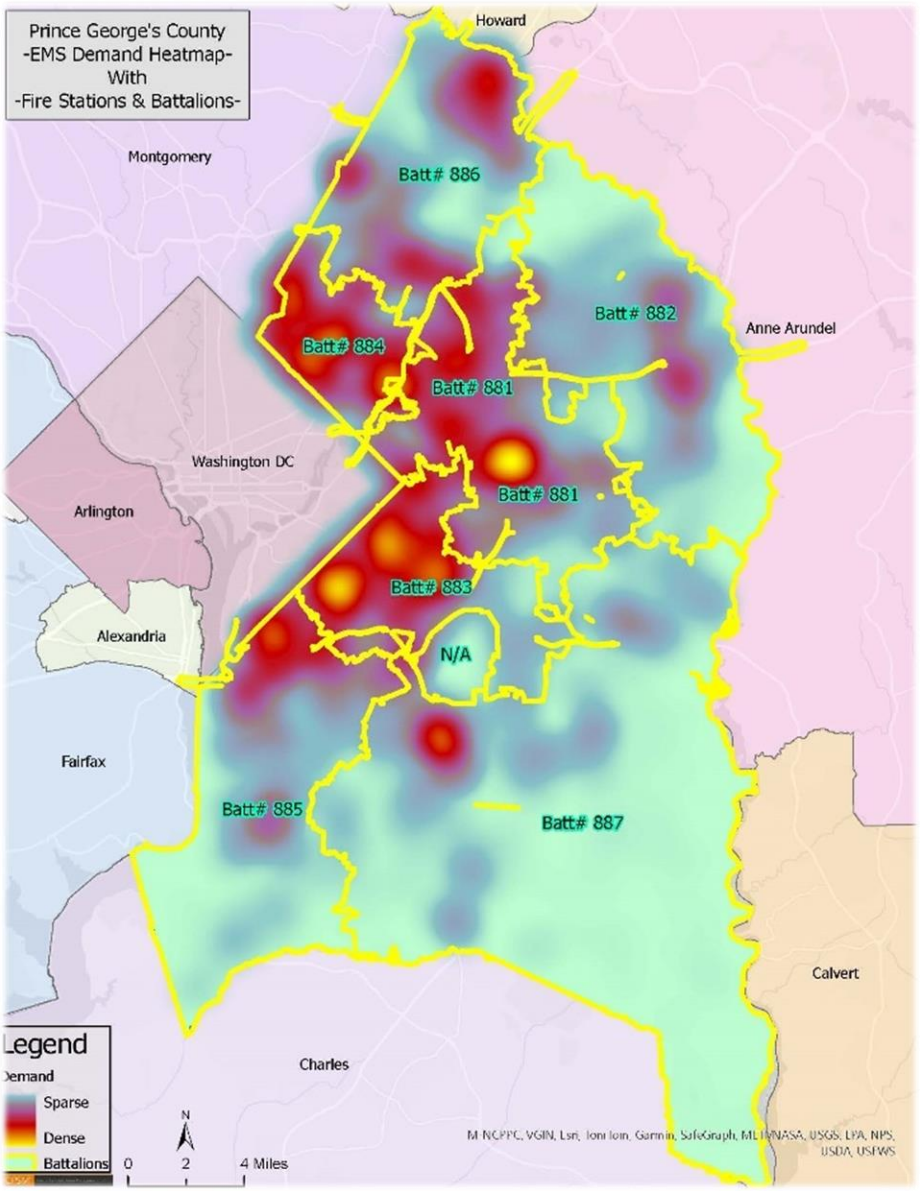
The next table looks at EMS unit response times by battalion.

Table 16: Average and 90th Percentile Response Times (Minutes) by Battalion Area

Battalion Area	Average Response Time				90th Percentile Response Time				Call Count
	Dispatch	Turnout	Travel	Total	Dispatch	Turnout	Travel	Total	
881	0.7	1.1	8.2	10.1	1.1	1.9	13.3	15.5	22,088
882	0.8	1.2	9.1	11.1	1.2	2.0	14.8	17.2	8,413
883	0.7	1.1	7.7	9.5	1.1	1.9	13.3	15.4	21,346
884	0.7	1.2	7.0	8.9	1.0	2.0	11.6	13.7	15,144
885	0.8	1.2	9.0	11.1	1.1	2.0	15.0	17.3	11,937
886	0.8	1.2	7.7	9.7	1.2	2.0	12.6	15.0	13,009
887	0.8	1.2	9.5	11.5	1.1	2.0	16.0	18.2	10,551
Total	**0.8**	**1.2**	**8.2**	**10.1**	**1.1**	**2.0**	**13.8**	**16.0**	**102,488**

Battalion's 882 and 887 have the lowest workload overall and longest response times. Affecting these response times are larger and more rural station districts within the battalion district. To some degree Battalion 885 has larger station districts, however, in the northern portion of this battalion, there are heavier demand areas. However, these units, like other system units, also have long overall total call times when transport is involved. This said, Battalions 881, 883, 884, and 886 response times are affected by both workload and long overall total call times when a transport is involved.

Figure 15: PGFD Battalion Districts: Aggregate Response Times



Battalion Area	Average Response Time				90th Percentile Response Time			
	Dispatch	Turnout	Travel	Total	Dispatch	Turnout	Travel	Total
881	0.7	1.1	8.2	10.1	1.1	1.9	13.3	15.5
882	0.8	1.2	9.1	11.1	1.2	2.0	14.8	17.2
883	0.7	1.1	7.7	9.5	1.1	1.9	13.3	15.4
884	0.7	1.2	7.0	8.9	1.0	2.0	11.6	13.7
885	0.8	1.2	9.0	11.1	1.1	2.0	15.0	17.3
886	0.8	1.2	7.7	9.7	1.2	2.0	12.6	15.0
887	0.8	1.2	9.5	11.5	1.1	2.0	16.0	18.2
Total	**0.8**	**1.2**	**8.2**	**10.1**	**1.1**	**2.0**	**13.8**	**16.0**

Historical, average and 90th percentile response times have only increased slightly over the three-year analysis period as outlined next.

Table 17: Historical Average and 90 Percentile PGFD Response Times (Minutes), by Battalion Area and Year

Year	Battalion Area	Average Response Time				90th Percentile Response Time				Calls
		Dispatch	Turnout	Travel	Total	Dispatch	Turnout	Travel	Total	
2021	881	0.8	1.3	7.7	9.8	1.1	2.1	12.6	14.9	22,346
	882	0.9	1.3	8.3	10.5	1.2	2.1	13.5	15.9	7,822
	883	0.8	1.3	7.2	9.3	1.1	2.0	12.3	14.7	20,823
	884	0.8	1.3	5.9	8.0	1.0	2.1	9.8	12.2	14,742
	885	0.9	1.4	8.4	10.7	1.3	2.2	14.2	16.7	11,684
	886	0.9	1.2	6.8	8.9	1.3	2.0	11.2	13.7	12,375
	887	0.9	1.4	9.0	11.2	1.1	2.2	15.0	17.4	9,696
	Total	**0.8**	**1.3**	**7.5**	**9.6**	**1.1**	**2.1**	**12.7**	**15.2**	**99,488**
2022	881	0.7	1.2	8.0	10.0	1.1	2.0	13.0	15.3	22,224
	882	0.8	1.2	8.8	10.8	1.2	2.0	14.3	16.8	8,012
	883	0.8	1.2	7.4	9.3	1.1	2.0	12.8	15.0	21,083
	884	0.7	1.2	6.5	8.5	1.0	2.0	10.8	12.9	15,248
	885	0.8	1.3	8.7	10.8	1.2	2.1	14.6	16.9	12,076
	886	0.8	1.2	7.3	9.3	1.2	2.0	11.9	14.3	12,966
	887	0.8	1.3	9.2	11.3	1.1	2.1	15.8	18.2	10,172
	Total	**0.8**	**1.2**	**7.8**	**9.8**	**1.1**	**2.0**	**13.3**	**15.6**	**101,781**
2023	881	0.7	1.1	8.2	10.1	1.1	1.9	13.3	15.5	22,088
	882	0.8	1.2	9.1	11.1	1.2	2.0	14.8	17.2	8,413
	883	0.7	1.1	7.7	9.5	1.1	1.9	13.3	15.4	21,346
	884	0.7	1.2	7.0	8.9	1.0	2.0	11.6	13.7	15,144
	885	0.8	1.2	9.0	11.1	1.1	2.0	15.0	17.3	11,937
	886	0.8	1.2	7.7	9.7	1.2	2.0	12.6	15.0	13,009
	887	0.8	1.2	9.5	11.5	1.1	2.0	16.0	18.2	10,551
	Total	**0.8**	**1.2**	**8.2**	**10.1**	**1.1**	**2.0**	**13.8**	**16.0**	**102,488**

Emergency Medical Dispatch

Prince George's County Public Safety Communications receives incoming 911 (emergency) and non-emergency calls and dispatches the appropriate emergency services resources as outlined in protocols and guidelines specific to each emergency services discipline. This includes PGFD Fire and EMS incidents. Overall, the Public Safety Communications Center processed 1,400,000 incidents in 2023.[11]

For EMS incoming calls and dispatch of resources, the Public Safety Communications Center utilizes Medical Priority Medical Dispatch® (MPDS). Public Safety Communications Center call-

11. Prince George's County MD, Public Safety Communications Center, Dispatch Processes.

takers and telecommunicators are trained and certified in the use of this system through the International Academies of Emergency Dispatch. ***This is a best practice.***

The MPDS system is an evidence-based system that uses clinical protocols and call taking processes to assign a response determinant to the EMS request. These response determinants are alpha-numeric codes that are used in EMS systems to determine the priority of a response, and the appropriate level of care necessary to meet the patient's clinical needs. The response determinants also aid in informing the responding units specifically what type of medical call to which they are responding. If approved by local protocol, the MPDS system can also be used to assign *response priorities* and *modes of response*, as well as make determinations regarding the response configuration for the EMS response.

The key features of MPDS include:

- Medical Director oversight.
- Structured Protocols: MPDS provides dispatchers with a structured set of questions and instructions, enabling them to gather critical information quickly and accurately.
- Consistency: The use of standardized protocols ensures that all calls are assessed and prioritized consistently, regardless of the dispatcher managing the call.
- Prioritization: MPDS helps in determining the urgency of each call, allowing dispatchers to prioritize responses based on the severity of the situation.
- Pre-Arrival Instructions: The system includes pre-arrival instructions, which dispatchers can provide to callers, offering potentially life-saving guidance before EMS units arrive on the scene.
- Quality Improvement: MPDS includes a quality improvement component, allowing for continuous evaluation and refinement of dispatch practices to ensure the highest standards of service.

Also, the MPDS system enables the use of an evidence-based process for dispatchers to provide pre-arrival medical instructions during the time EMS units are responding to the call.

Appropriate use of the MPDS system typically includes the active engagement of a physician Medical Director, and a robust quality assurance (QA) process, which helps ensure that EMD call taking, EMD determinant assignments, and pre-arrival instructions are being conducted appropriately and reliably. This occurs in Prince George's County.

Additionally, the implementation of MPDS has been shown to improve response resiliency of EMS ground transport units to higher acuity calls, enhance the accuracy of call assessments, and ultimately, improve patient outcomes. Its structured approach to emergency medical dispatching ensures that the right resources are deployed to the right incidents at the right time.

An example of a response matrix based on MPDS EMD response determinants is outlined in the next figure.

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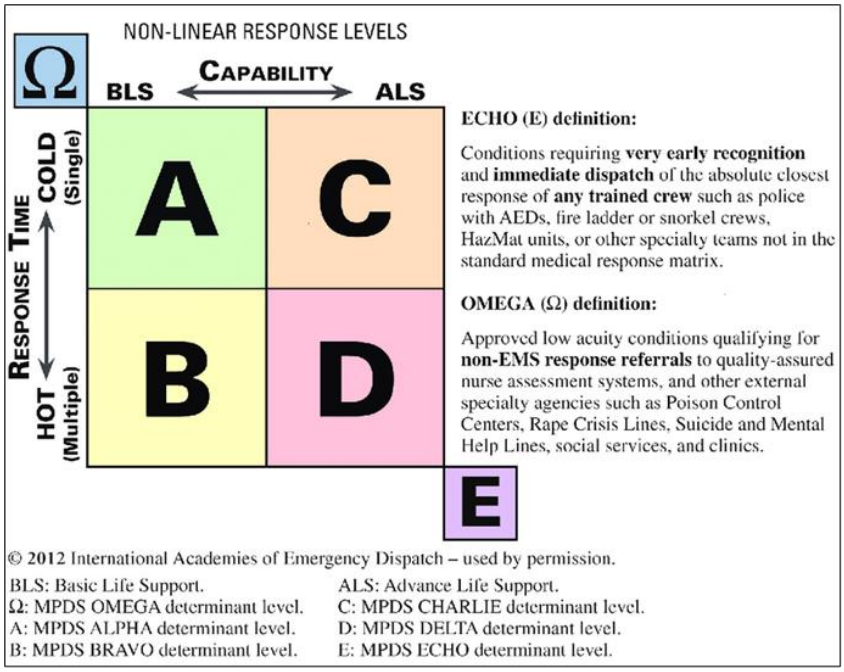
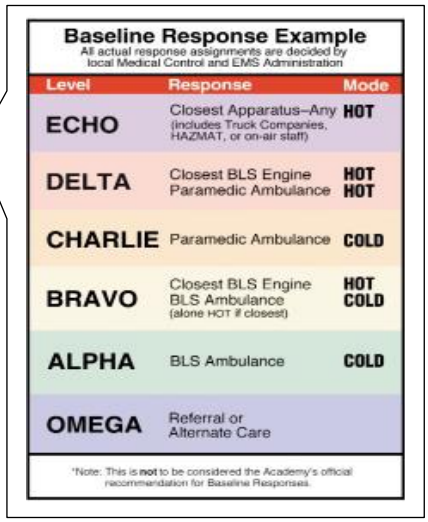
Figure 16: Priority Solutions® Medical Priority Dispatch System® Response Matrix





CPSM analyzed call determinants made in the County's 911 Center as outlined in the next table.

Table 18: Historical MPDS Call Determinants: 2021, 2022, 2023

Determinant Code	Calls		
	2021	2022	2023
Alpha	22,043	22,703	22,738
Bravo	7,031	7,798	8,192
Charlie	22,553	24,028	23,775
Delta	30,956	32,407	35,480
Echo	2,533	2,674	2,529
Omega	889	995	1,043
Other*	37,613	41,391	39,076
Total	**123,618**	**131,996**	**132,833**

Percent of Determinant Code by Year			
Determinant Code	2021	2022	2023
Alpha, Bravo, Omega:	24%	24%	24%
Charlie & Delta:	43%	43%	45%
Echo:	2%	2%	2%
No Call Determinant:	30%	31%	29%

Note: *Other = no determinant code was assigned.

The above table tells us that consistently:

- ***Charlie and Delta*** call determinants represent the greatest percentage of all call determinants each year.
- ***No call*** determinant assigned represents the second greatest percentage of all call determinants each year.

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Conclusion

Overall, the PGFD has increased resiliency issues and challenges across the county in terms of workload and long overall call times when transport is involved. Battalion districts have varying workload in terms of runs and calls with Battalions 881, 883, and 884 having the highest workload (545 of off call workload). Battalion 881, 882, and 887 units have the highest resiliency issues when analyzing these station's ability to respond and arrive first in their fire districts. The rurality of Battalions 882 and 887 coupled with long transport times affect this resiliency component. Stations 829 (8,083), 881 (7,118), 825 (6,882), and 826 (5,145) have the highest workload of all stations, which has impacts on resiliency in these individual station districts.

The overall frequency of concurrent calls is moderate to increasingly high through the County and each Battalion district. Each Battalion has concurrent calls. The highest concurrent call Battalion districts, when analyzing two (2) or more concurrent calls include Battalion 881 (88.6% of all calls are overlapped by two or more calls) and Battalion 883 (87.6% of all calls are overlapped by two or more calls). Battalion 882 has the least number of overlapping calls, but still, 52.1% of all calls are overlapped by two or more calls. Because Battalion and station units have high demand, and that there are extended transport times, coupled together this creates increased absorption issues regarding unit availability to respond to calls in station and Battalion districts, and across all districts.

The PGFD has some resistance issues for EMS calls based on the call determinants processed in the County's 911 Center. Historically, Omega, Alpha, and Bravo call determinants make up the third greatest percentage of all calls, while Charlie and Delta calls make up the greatest percentage of all call determinants. No call determinant makes up the second greatest percentage of call determinants. The PGFD should continue to work with the County 911 Center to ensure the most appropriate call determinant is assigned to the call. Additionally, the PGFD should consider having the County 911 Center notify the MIH/CP team each time an Omega call determinant is assigned to an EMS unit for the purpose of follow-up to determine potential MIH/CP program assistance or navigation.

Overall, PGFD EMS transport time affects overall resiliency and absorption. Total transport times (116.6 minutes on average for each transport) are affected the most by at-hospital or hospital turnover time, which is on average 72.6 minutes (62% of the total transport time).

The PGFD's ability to absorb multiple calls and restore response capabilities to a state of normalcy is challenging. PGFD units are available to respond to calls occurring in their primary Battalion districts on average 81% of the time, with three Battalion Districts increasingly challenged (Battalions 881, 882, and 887).

CPSM assesses the PGFD EMS system has resiliency challenges that include resistance (call determinants), as well as absorption and restoration challenges (overall call demand and increased transport times compounded by increased at-hospital turnover time). Further, resiliency affects overall response times for EMS units, which overall are 10.1 minutes on average and 16.0 minutes at the 90th percentile.

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Social Determinants of Health

Social determinants of health refer to the non-medical conditions in which people are born, grow, live, work, and age and that ultimately impact their health outcomes. Social determinants of health conditions and factors extend beyond the individual and medical care and include a wide range of societal and environmental influences. Most social determinants of health assessments and analyses include the following:

- Economic Stability: Factors such as income, employment, and financial security.
- Education: Access to quality education and literacy.
- Social and Community Context: Social integration, support systems, and community engagement.
- Health Care Access and Quality: Availability of and access to health services and the quality of health care.
- Neighborhood and Built Environment: Housing quality, access to healthy food (nutrition), transportation, and environmental conditions such as the physical conditions in which an individual lives.

Social determinants of health have impacts when assessing the overall medical care and outcomes in a community as well as on EMS in terms of call demand and the ability to meet the demand. When assessing impacts on healthcare, social determinants of health potentially can affect a community's medical care such as:

- Communities with lower socioeconomic status may have limited access to healthcare facilities and services. This can result in delayed care, fewer preventive services, and higher rates of untreated conditions. ***These factors will typically drive-up EMS demand.***
- Education levels can influence health literacy, which affects individuals' ability to understand health information and make informed decisions about their care. Lower health literacy can lead to less effective management of chronic conditions and poor health outcomes. Additionally, the population affected by this factor typically have challenges navigating through public health systems and a community's social services programs. ***These factors will typically drive-up EMS demand.***
- Financial insecurity can impact individuals' ability to afford healthcare, medications, and healthy food. This may lead to unmet medical needs, higher rates of emergency care, and overall poorer health outcomes. ***These factors will typically drive-up EMS demand.***
- The physical environment, including housing quality and neighborhood safety, can influence health. Poor living conditions and environmental hazards can contribute to chronic health problems and limit opportunities for physical activity. ***These factors will typically drive-up EMS demand.***
- Cultural beliefs and community norms can affect health behaviors and attitudes towards medical care. In some cases, cultural barriers might hinder individuals from seeking necessary medical attention or adhering to treatment plans.

Social determinants of health have impacts on EMS agencies as well and include:

- Population living in underserved areas may face challenges such as fewer available private and public healthcare resources, fewer EMS resources (due to rurality and high demand in the more urban and suburban areas), longer EMS response times (again, due to rurality and high demand in the more urban and suburban areas), or difficulty accessing transportation to get

to medical facilities, which typically drives up the need for utilizing EMS resources. ***This factor is prime for Mobile Integrated Health/Community Paramedicine programs.***

- Socioeconomic factors like poverty and low education levels can lead to higher rates of chronic conditions or preventable emergencies can increase the demand for EMS services and complicate emergency care due to the prevalence of complex health issues. ***This factor is prime for Mobile Integrated Health/Community Paramedicine programs.***
- Population in the lower socioeconomic backgrounds may have less access to preventative care, health education, and navigation to public health care. This typically leads to higher rates of EMS responses that could have been avoided with earlier intervention, education, and navigation to healthcare. ***This factor is prime for Mobile Integrated Health/Community Paramedicine programs.***
- Challenges that include language barriers, lack of social support, and difficulties in understanding or managing medical instructions create barriers for EMS responders.
- Areas with higher social and economic disadvantages may require more intensive and frequent EMS interventions. Understanding the community's social determinants of health can help EMS agencies allocate resources more effectively and address underlying issues that contribute to frequent emergency calls. ***This factor is prime for Mobile Integrated Health/Community Paramedicine programs.***

In conclusion, addressing social determinants of health is crucial for improving overall health and reducing the burden on emergency services. EMS systems can play a role by recognizing these determinants and collaborating with community resources to help mitigate their impact.

Prince George's County Population Needs and Community Health Assessment

In 2022, the Prince George's County Health Department conducted a Community Health Assessment. Key findings that directly or indirectly impact EMS include:[12]

- Social determinants of health drive many County health disparities and were exacerbated further during the pandemic (these include the social determinants of health as discussed previously). ***Aggregately, these factors typically drive up EMS demand and are prime for Mobile Integrated Health/Community Paramedicine programs.***
- Access to healthcare is still a leading issue in the County. ***This factor is prime for Mobile Integrated Health/Community Paramedicine programs.***
- Many residents lack health insurance (this disproportionately affects Hispanic residents—as a note, and as discussed previously, the Hispanic population has increased 59.31% between 2010 and 2020). ***This factor is prime for Mobile Integrated Health/Community Paramedicine programs.***
- Those with health insurance struggle to afford healthcare co-pays, premiums, deductibles, and prescriptions. This population also has difficulty accessing healthcare due to transportation challenges. ***This factor is prime for Mobile Integrated Health/Community Paramedicine programs.***
- More resources such as the County Health Assures program (provides healthcare for those without sufficient resources). ***This factor is prime for Mobile Integrated Health/Community Paramedicine programs.***

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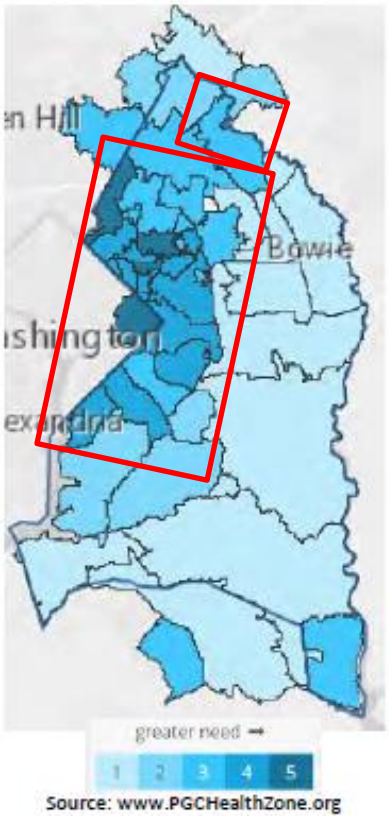
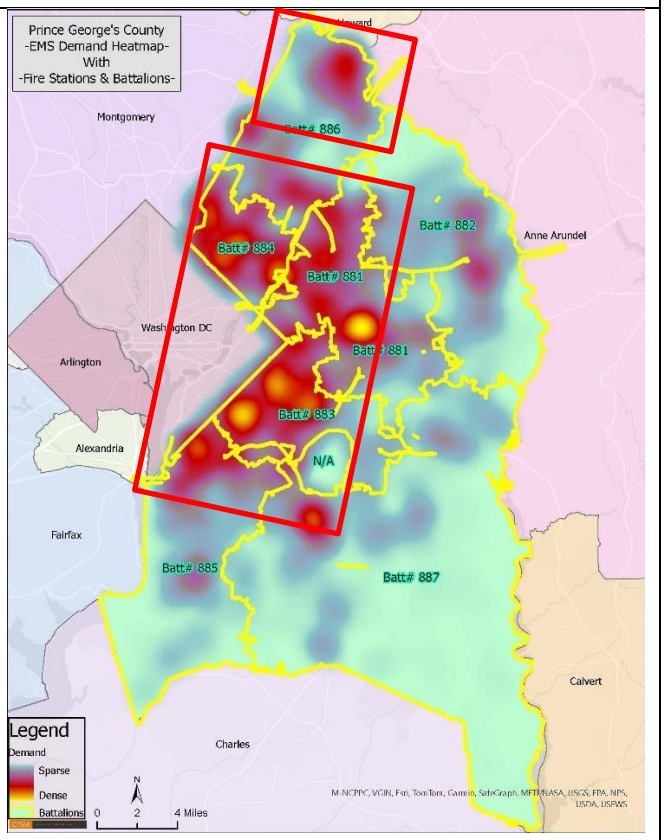
- Residents desire more permanent solutions and not temporary resources. ***This factor is prime for Mobile Integrated Health/Community Paramedicine programs.***
- There is a perception that the County lacks quality healthcare providers; there is a great need for culturally competent and bilingual healthcare providers.
- Lack of ability to access healthcare providers.
  - There are limited transportation options available, and the supply does not meet the need. ***This factor will typically drive-up EMS demand.***
  - The distribution of providers is uneven in the County. ***This factor will typically drive-up EMS demand.***

CPSM examined geographic data provided in the 2022 Community Health Assessment and compared this data to PGFD demand data. Socioeconomic factors are compared to PGFD EMS demand in the next set of maps.

Figure 17: Socioeconomic Factors and PGFD EMS Demand

2022 Socio Needs Index	2023 PGFD EMS Demand
	

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Comparison of the two maps show the heavier demand for EMS (western Prince George's County, which is contiguous with Washington D.C.) follows the greater demand for social needs in the same areas of the county. The increased EMS demand in the northeast area of the county also mirrors an elevated social needs index. The southeastern area of the county has an elevated social needs index due to its rurality (according to a Public Health official CPSM met with) but does not have increased EMS demand.

Socioeconomic indicators in Prince George's County for the map above includes:[13]

- 12.6% of children are estimated to live in poverty in the County (similar to state indicators).
- One-third of Hispanic, female head of household families live in poverty.
- Unemployment declined in the County (5.5%, 2019) but remains higher for Black residents (6.5%); for residents with a disability the unemployment rate is 12.0%.
- Median household income for the County was estimated as $86,290 in 2019, a 12% increase over five years.
- An estimated 9.2% of County households do not have a vehicle.

Other socioeconomic factor indicators that feed into the socio needs index include:[14]

- Approximately 90% of residents have health insurance, with most covered through employer-based coverage.
- Approximately 90,000 residents are estimated to lack insurance as of 2020 and nearly one in five residents ages 26-34 years were estimated to be uninsured.
- By race and ethnicity, Hispanic residents are more likely to be uninsured (29%).
- Provider to Resident Ratios: 1 PCP to 1,890 residents, 1 dentist for every 1,570 residents, 1 mental health provider for every 550 residents.
- Nearly half of Hispanic residents have less than a high school education.
- Nearly one in five housing units in the County were estimated to have a severe housing problem (overcrowding, high housing cost, lack of kitchen or plumbing facilities).
- Estimated that 14.5% of County children are food insecure (2019); however, the County has one of the best food environment indexes in the State at 9.1 (10 is best).
- Both the County and the State have seen increases in the unintentional injury mortality rate; in the County unintentional injuries are one of the leading causes of death.

Social determinants of health clinical factors include:[15]

- White, Non-Hispanic (NH) residents have a suicide mortality rate of 16.0 per 100,000 residents, approximately 3 times higher than Black NH residents (5.5, 2018-2020).
- White, NH residents have a drug-related mortality rate of 36.0 per 100,000 residents, approximately twice as high as the County at 18.7 (2018-2020).
- Nearly four out of five residents ages 45-64 identified as overweight or obese (78.6%).
- Heart disease is the number one leading cause of death in the county.

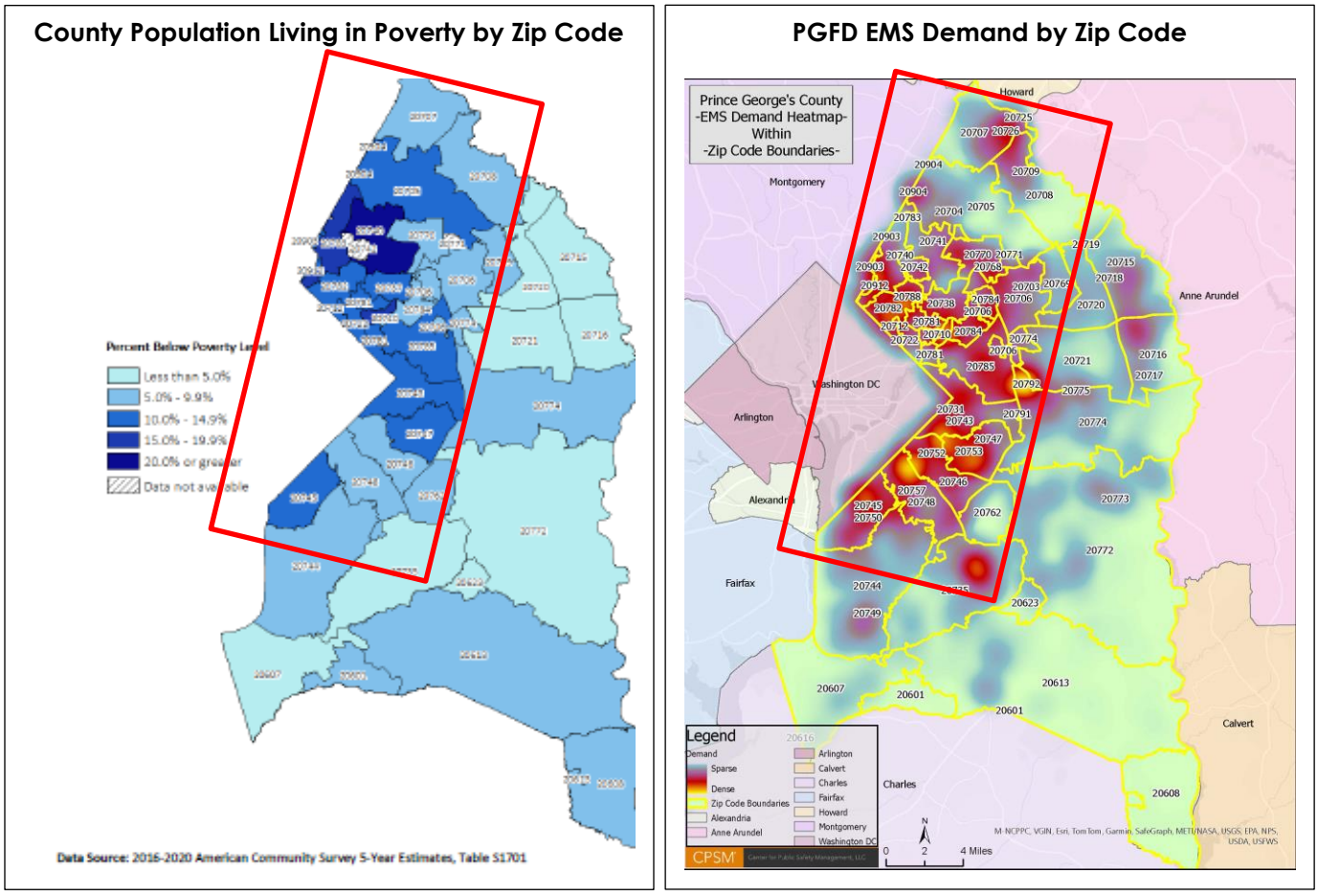
13. Prince George's County, MD Community Health Assessment
14. ibid
15. ibid

- One in five residents aged 45-64 have diabetes. Nearly 14% of residents reported ever being diagnosed with diabetes. Diabetes is the number six leading cause of death in the County.
- Over one-third of residents reported a hypertension diagnosis (34.7%).
- Number two leading cause of death in the county is cancer.
- Prince George's has the second highest HIV incidence rate in the state (29.0 per 100,000 population).

The population living in poverty typically aligns with access to healthcare challenges, transportation challenges, health issues and challenges, and nutritional challenges. These disparities often lead to an increase in public services to include EMS services. The 2020 census reported that people living in poverty make up 10.9 percent of the county population.

The next figure examines the correlation of residents living in poverty (2016-2020 data) to 2023 EMS demand. Like the social needs index comparison, the two maps show the heavier demand for EMS (western Prince George's County that is contiguous with Washington D.C.) follows the percentage of poverty in the same zip codes of the county.

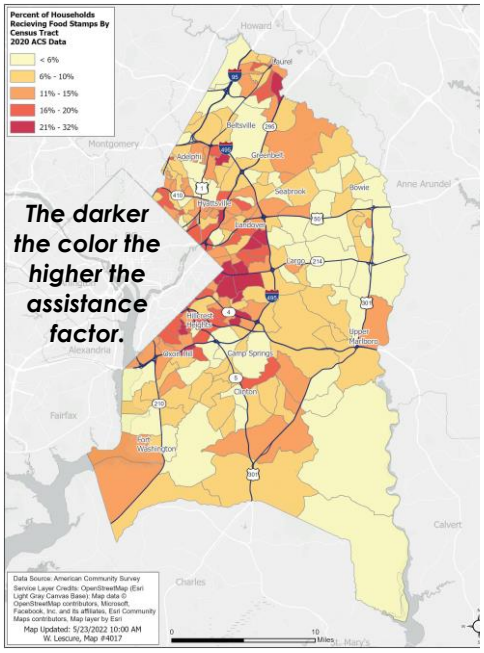
Figure 18: Population Living in Poverty and PGFD EMS Demand



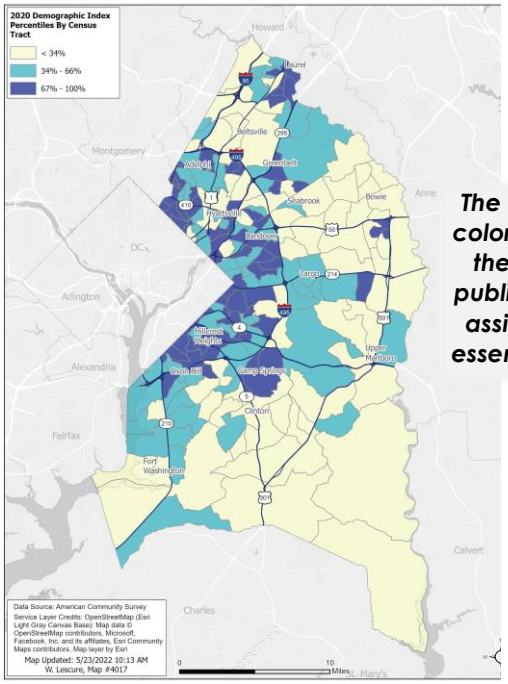
The next set of maps illustrates certain demographic data that links to social determinants of health and socio needs and their correlation to PGFD EMS demand.

Figure 19: Social Determinants of Health - Socio Needs and Correlation to PGFD EMS Demand[16]

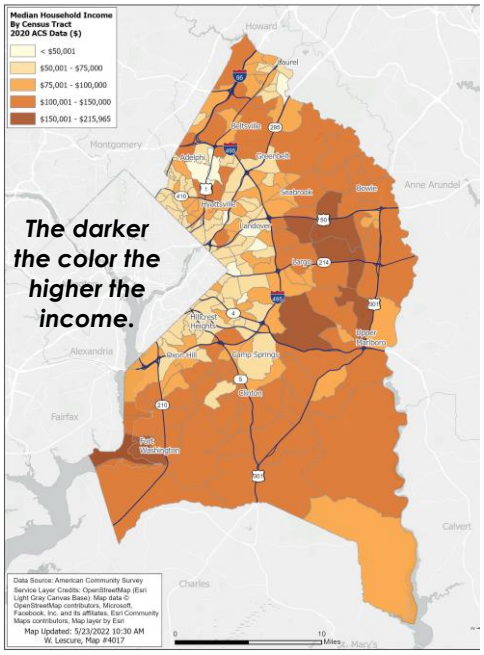
Household and Families Receiving Nutrition Assistance



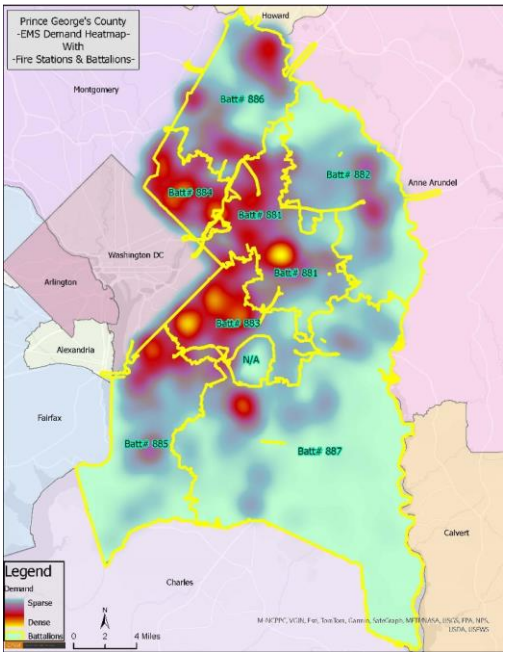
Demographic Index Percentiles



Median Household Incomes



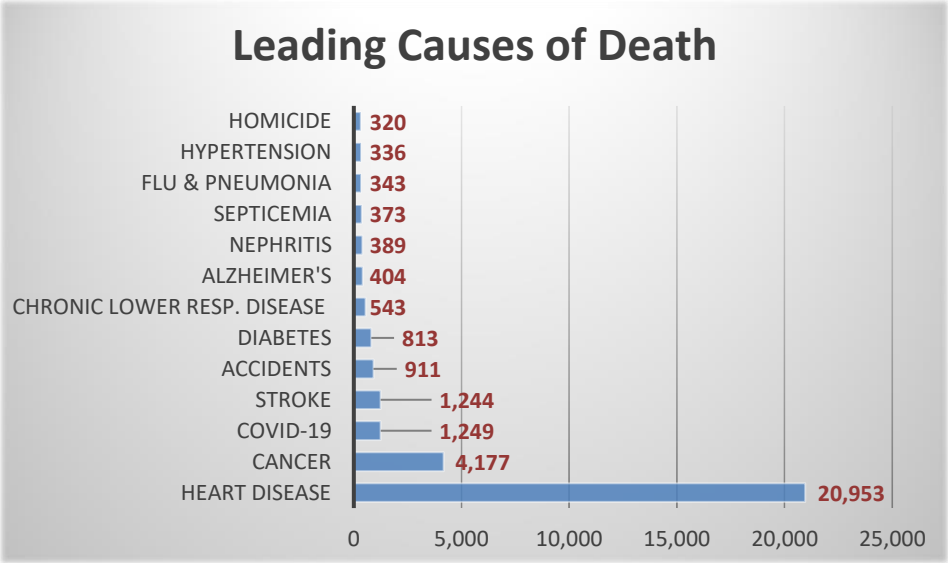
PGFD EMS Demand



16. *Demographic Trends and Patterns in Prince George's County*, Prince George's County Planning Dept., 2022

The next figure illustrates the leading causes of death in Prince George's County (2018-2020). Hypertension, septicemia, nephritis, Alzheimer's, chronic lower respiratory disease (COPD, asthma, emphysema, and chronic bronchitis), diabetes, stroke, cancer, and heart disease are common diseases or medical conditions that impact EMS demand and are prime for interaction with a Mobile Integrated HealthCommunity Paramedicine program.

Table 19: Leading Causes of Death 2018-2020[17]



To conclude, Prince George's County has several factors that impact EMS demand and that are indicators for a coordinated Mobile Integrated Health/Community Paramedicine program. As indicated herein, these include:

- High EMS demand that is concentrated where the greatest percent of the population is at or below the poverty level, has a lower median household income, requires increased public assistance for essential needs, has the highest incidence for nutrition assistance, and that has access to healthcare issues and transportation challenges.
- There is a prevalence of chronic medical and mental health conditions in the county.
- There is a prevalence of homelessness or unstable housing situations, which can affect the health of these individuals.
- There are varying levels of health literacy in the county leading to a decreased level of understanding about health conditions, treatment options, and navigation of the healthcare system.

CPSM further concludes that based on the high EMS demand and social determinants of health specific to Prince George's County as outlined above, a Mobile Integrated Health/Community Paramedicine program should focus on patient-centered navigation through strategic partnerships with County agencies that has a focus on improving access to healthcare, and offer population specific care through an expansion of medical protocols that are designed to improve quality of life and reduce 911 EMS responses.

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SECTION 5. PRINCE GEORGE'S COUNTY EMS PROGRAM

Medical Direction

Prince George's County EMS operates under the clinical oversight of Dr. Goltz, the Medical Director, who plays a critical role in guiding the clinical practice and response strategies of the system. The Medical Director is responsible for setting clinical protocols, overseeing patient care, and ensuring that EMS providers deliver the highest quality of care aligned with the latest evidence-based practices. This oversight extends across all EMS operations, including emergency response, Mobile Integrated Health-Community Paramedicine (MIH-CP), and specialized programs, forming the backbone of clinical governance for the department.

The Medical Director's role is integral to maintaining clinical performance standards, managing the education and continual training of EMS providers, and integrating patient care protocols with the broader health system. This involves direct collaboration with clinical staff, ongoing quality improvement initiatives, and adapting protocols in response to emerging healthcare needs and community challenges.

The Medical Director's involvement is critical in refining response protocols to address both immediate operational challenges and long-term systemic factors driving EMS demand, particularly concerning ALS resources. Dr. Goltz, along with the Assistant Medical Director, should prioritize developing refined response strategies that optimize ALS deployment by aligning call processing with MPDS determinations. This approach will ensure that ALS units are dispatched efficiently based on the specific nature of each call, reducing over-response, and reserving advanced care capabilities for high-acuity incidents.

Percent of Determinant Code by Year			
Determinant Code	2021	2022	2023
Alpha, Bravo, Omega:	24%	24%	24%
Charlie & Delta:	43%	43%	45%
Echo:	2%	2%	2%
No Call Determinant:	30%	31%	29%

One of the critical issues noted by CPSM is the potential over-response to incidents. *The CPSM data analysis indicates that a substantial proportion of calls involve higher-acuity situations (Charlie and Delta levels), justifying ALS response but potentially signaling inefficiencies in unit dispatch protocols.* It is essential to further analyze whether the over-response is related to operational protocols, dispatcher decision-making, or a systemic need to ensure unit availability in high-density call periods.

That said, the data suggests that dispatch protocols should be evaluated and adjusted where feasible to avoid unnecessary pressure on ALS resources. It is crucial to determine if over-response results from ALS units being cleared quickly and immediately reassigned, or if there is a pattern of dispatches involving ALS resources that can be managed better with revised protocols and BLS units. Addressing these factors will help ensure that ALS units are reserved for high-acuity cases where their advanced capabilities are most needed, thereby optimizing overall system efficiency.

In collaboration with dispatch centers, the Medical Director can guide protocol adjustments, including the strategic use of non-transport units or telehealth consults for lower-acuity cases. This

ongoing alignment of resource allocation practices with clinical guidelines will enhance the overall efficiency of Prince George's County EMS.

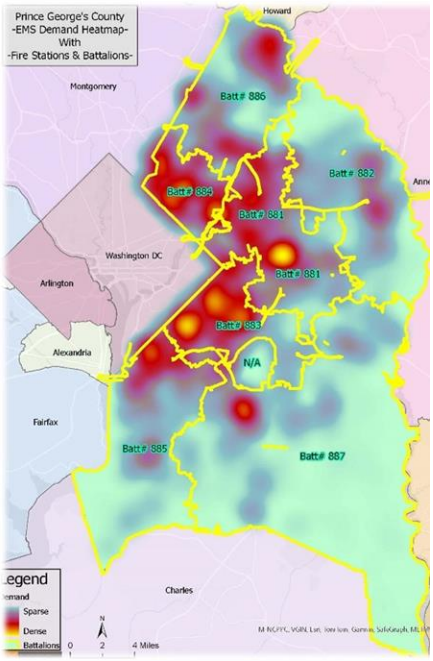
Moreover, the Medical Director plays a pivotal role in integrating the MIH-CP program into the broader EMS framework. By aligning clinical oversight with preventive health initiatives, the Medical Director can address health issues upstream, reduce non-emergent 911 use, and connect patients to appropriate care pathways, including public health and social services. This integrated approach alleviates system pressure by focusing on patient-centered navigation and directing clients to the most suitable care providers, ultimately reducing EMS call volumes.

By focusing on refined clinical protocols, data-driven decision-making, and strategic integration with broader healthcare services, the Medical Director ensures that Prince George's County EMS remains adaptable, resource-efficient, and responsive to the evolving needs of the community.

Patient Care Protocols

Patient care protocols are the backbone of emergency medical services, providing structured guidelines for pre-hospital care that EMS providers follow when responding to medical emergencies. These protocols are developed based on evidence-based practices, clinical research, and the specific needs of the community. In Prince George's County, EMS protocols are crafted through a collaborative process involving the Medical Director, EMS leadership, field providers, and input from hospital partners and stakeholders. The protocols are regularly reviewed and updated to align with the latest medical standards and address emerging health challenges.

Prince George's County EMS currently operates under protocols that guide clinical care across various scenarios, including trauma, cardiac emergencies, respiratory distress, and pediatric care. *However, data from the county indicates a high prevalence of chronic medical and mental health conditions, particularly in areas with significant socio-economic challenges. The medical protocols need to be adapted to better address these prevalent health issues, including targeted approaches to managing chronic conditions and mental health crises.*



For example, data from CPSM's *Data Analysis* shows concentrated demand in specific areas of the County as indicated here. These high-demand areas are likely to have a prevalence of unmanaged chronic and mental health conditions, which are likely to contribute to a higher demand for EMS responses.

It is logical to assume that the access to healthcare and social determinants of health challenges faced in these regions correlate with higher EMS utilization. *This underscores the need for enhanced care strategies that better integrate social determinants of health and direct referrals to community resources, aimed at addressing the underlying factors driving emergency service use.*

One critical area for protocol enhancement is the management of psychiatric and behavioral health emergencies. Current protocols need to expand beyond basic emergency response to include de-escalation techniques, crisis intervention strategies, and direct coordination with Prince George's County

behavioral/mental health resources, such as the County's Behavioral Health system within the Department of Health and Social Services. By collaborating closely with these agencies, EMS can ensure that patients are connected to appropriate ongoing care, reducing repeated reliance on emergency services.

An example of protocol enhancement may include incorporating protocols that enable paramedics to connect patients with on-call mental health professionals via telehealth during the incident can improve patient outcomes and reduce unnecessary transport to emergency departments. *Establishing formal partnerships with local mental health services to provide follow-up care or crisis intervention teams can potentially alleviate the burden on EMS resources.*

Using data-driven insights, EMS protocols can be refined to better serve high-frequency EMS users who often rely on emergency services due to unmanaged chronic conditions, transportation issues, and gaps in primary care access. While the data from the CPSM analysis provides an overview of call types over a three-year period, it does not specifically identify conditions such as diabetes management, heart failure exacerbations, and chronic lower respiratory disease. However, it is reasonable to infer that these chronic conditions are prevalent among high utilizers where limited access to preventive care and social support often drives repeated emergency service use. *Addressing these patterns through targeted protocol enhancements and partnerships with community health resources will be essential in reducing EMS calls and improving overall EMS system efficiency.*

Implementing targeted protocols, such as scheduled follow-up visits or referrals to community health programs, can significantly reduce the need for repeated emergency interventions. This approach is particularly well-suited for MIH-CP client intervention, where the program's proactive, in-home care model can directly address the needs of high-risk patients. PGFD can leverage its data analytics to identify patterns of frequent EMS use, enabling the MIH-CP program to engage with these patients early and connect them to appropriate resources, such as primary care, social services, or telemedicine consults. By integrating MIH-CP interventions into the broader EMS response strategy, the PGFD can more effectively reduce emergency service dependency and improve patient outcomes.

Addressing Hospital Transfer Time

A significant operational challenge impacting Prince George's County EMS is prolonged hospital transfer times, averaging 72.6 minutes as discussed in the CPSM data analysis. Extended ambulance to hospital transfer durations restricts EMS unit availability, leading to delays in responding to new emergencies. To address this, current protocols should be reviewed and revised to streamline the handoff process, enhance coordination with hospital staff, and reduce off-load times.

Strategies to Reduce Off-Load Times Include:

- Standardized Communication Protocols: Implement standardized communication practices between EMS providers and hospital staff to expedite the transfer process. For example, adopting SBAR (Situation, Background, Assessment, Recommendation) communication techniques can help streamline patient transfers and reduce misunderstandings during handoffs.
- Leveraging Technology: Use technology solutions such as digital patient handoff platforms that allow EMS to input and share patient information with hospitals before arrival. This proactive approach can facilitate quicker assessments and transfers, enabling hospital staff to prepare in advance.

- Dedicated EMS Holding Areas: Establish designated EMS holding areas within hospitals where patients can receive initial assessments by hospital staff while awaiting bed assignments, thereby freeing EMS units more quickly.

Patient care protocols in Prince George's County EMS must continuously evolve to meet the growing and changing needs of the community. By enhancing mental health response strategies, refining protocols for high-frequency users and high-frequency call determinants through data-driven insights, and addressing operational inefficiencies like prolonged hospital transfer times, the EMS system can improve patient outcomes, optimize resource use, and better serve the community's health needs. These targeted protocol improvements will help ensure that EMS remains responsive, effective, and aligned with the latest standards of pre-hospital care.

Continuous Quality Improvement

Continuous Quality Improvement (CQI) is a critical component of Prince George's County EMS, aimed at ensuring that all patient care is consistent with current clinical standards and best practices. Currently, the CQI program involves routine case reviews, protocol adherence checks, and performance evaluations across various EMS operations. However, given the county's specific challenges, including high call volumes and prevalent social determinants of health, *there is a pressing need to expand CQI activities to give increased attention to mental health emergencies, chronic illness management, and the appropriate integration of the Mobile Integrated Health-Community Paramedicine (MIH-CP) program into the day-to-day activities of the overall PGFD EMS program.*

The existing CQI framework in Prince George's County EMS primarily focuses on compliance checks, routine performance reviews, and feedback on clinical practices. However, as the system manages approximately 132,000 calls annually, *there is a growing need to enhance CQI efforts to include more proactive reviews, detailed case audits, and targeted evaluations that specifically address the evolving demands of the community, particularly in managing high utilizers and patients with complex health needs who may access to healthcare challenges and social determinants of health that do not favor healthy outcomes.*

Expanding CQI to Include MIH-CP and High Utilizers

High utilizers—patients who frequently call EMS—are a significant focus area given their impact on the overall EMS system. Many of these patients have chronic medical conditions, unmanaged mental health issues, or face barriers to accessing primary care. Therefore, the MIH-CP program's role should shift toward patient-centered navigation through strategic partnerships with appropriate County agencies, focusing on improving access to healthcare and reducing reliance on emergency responses.

The expanded CQI process should incorporate regular audits of MIH-CP program outcomes, including reviewing referrals from EMS crews, assessing the effectiveness of patient navigation efforts, and monitoring the overall impact on EMS call volumes. By integrating MIH-CP performance into the CQI framework, Prince George's County EMS can evaluate how well the program addresses the needs of high utilizers and whether it effectively connects patients to appropriate care pathways, such as public health services, social services, or other community resources.

Targeted CQI Activities for Key Areas:

- Mental Health Emergencies: With the prevalence of mental and behavioral health conditions in the County as documented in the Community Health Assessment, CQI should include detailed case reviews of these incidents to assess the appropriateness of response protocols, the effectiveness of de-escalation techniques, and the integration of County mental health resources during and after the incident. The County Behavioral Health Services agency, a current partner of the MIH-CP program, plays a crucial role in navigating patients to appropriate mental health services. This approach will help identify potential MIH-CP clients and refine EMS protocols to improve patient outcomes and reduce the frequency of repeat calls.
- Chronic Illness Management: For patients with chronic medical conditions, CQI activities should focus on reviewing how effectively EMS protocols manage these conditions in pre-hospital settings. This includes analyzing data on frequent calls related to chronic diseases such as diabetes, heart failure, and chronic lower respiratory diseases, and determining whether current care practices align with best practices or require enhancements. Identifying high-frequency users who could benefit from MIH-CP interventions is critical, as targeted follow-ups and community-based support can significantly reduce emergency response frequency and improve long-term patient management.
- MIH-CP Program Review: CQI should systematically review MIH-CP provider performance, including patient care quality, the effectiveness of referrals, and the overall impact of MIH-CP on high utilizers and those with chronic health conditions. This review process can help fine-tune the program, ensuring that it remains aligned with the broader goals of patient-centered navigation and reducing EMS reliance.

Aligning CQI with Strategic Outcomes

To align with the strategic principles outlined by CPSM, the CQI process should focus on enhancing the quality of MIH-CP care by evaluating enhanced medical protocols, provider interventions, and the overall effectiveness of healthcare navigation. This includes assessing how MIH-CP integrates with other county agencies, such as public health and social services, to deliver targeted, population-specific care that improves quality of life and reduces the need for emergency responses.

Proposed Enhancements to CQI:

- Structured Feedback from Hospitals and Partners: Develop feedback loops with hospitals, community health organizations, and social service partners to gain insights into patient outcomes and refine MIH-CP care pathways.
- Data-Driven Adjustments: Utilize data analytics such as CRISP (Chesapeake Regional Information Exchange for our Patients) to track patient outcomes, monitor program performance, and make informed adjustments to protocols based on real-world results, ensuring that MIH-CP and EMS operations are continuously improved.
- Client Referral Audits: Regularly audit referrals made by EMS crews to MIH-CP to ensure that patients are being directed to the most appropriate resources and that follow-up care is adequately managed.

By expanding its CQI activities, Prince George's County EMS can better manage the complexities of high utilizers, enhance patient care protocols, and support the strategic integration of the MIH-CP program into the overall PGFD EMS system. This approach will ensure that EMS not only meets immediate response needs but also addresses the underlying health

and social factors driving frequent emergency use, ultimately improving the quality of care and efficiency of the EMS system.

EMS Training and Continuing Education

Prince George's County EMS currently provides a comprehensive training and continuing education program designed to ensure that EMS personnel are well-prepared to deliver high-quality pre-hospital care. EMS providers, including EMTs, Cardiac Rescue Technicians (CRTs), and Paramedics, undergo initial certification and ongoing education in accordance with national and state standards. Although the County is only recertifying existing CRTs, their training remains integral to the system. The existing training curriculum covers essential areas such as basic and advanced life support, trauma care, cardiac and respiratory emergencies, pediatric and geriatric care, and standardized protocols for medical emergencies.

Continuing education for EMS personnel is delivered through classroom instruction, online learning, skills labs, and scenario-based training exercises. These programs maintain clinical proficiency, update providers on new protocols and treatments, and address shared challenges in the field. *However, while these foundational skills are vital, the increasing complexity of patient care requires a more targeted approach, particularly in managing cases influenced by social determinants of health.*

The recent CPSM gap analysis and feedback have identified critical areas where Prince George's County EMS needs to expand its training efforts. While current programs cover a broad spectrum of clinical knowledge, there is a growing need for specialized education that addresses the intersection of healthcare, mental health, chronic disease management, and social determinants such as poverty, housing instability, and limited access to healthcare. This intersection significantly affects how EMS providers deliver care and respond to the evolving needs of the community.

The Intersection of Healthcare and Social Determinants

The intersection of healthcare and social determinants refers to how social factors like poverty, lack of access to healthcare, and housing instability directly impact health outcomes. In simple terms, they are non-medical factors that influence health outcomes. For EMS providers, understanding these intersections is crucial because they often encounter patients whose medical emergencies are exacerbated by these non-medical factors. For example, patients with chronic conditions such as diabetes or Chronic Obstructive Pulmonary Disease (COPD) may experience frequent EMS interactions due to inadequate primary care access, food insecurity, or unstable housing conditions, and deficiency of prescribed medications (due to funds or due to access to healthcare) all of which can worsen their health status and increase reliance on emergency services

To enhance the EMS training and continuing education programs, Prince George's County EMS must incorporate specialized modules focused on mental health and chronic disease management that are prevalent in the community. These additions should go beyond standard Paramedic training, providing in-depth education on the identification, assessment, and treatment of common mental health crises such as anxiety, depression, substance abuse, and psychosis. This training must also cover how social determinants impact these conditions, equipping providers with the knowledge to recognize and address these complex patient scenarios.

Additionally, EMS personnel need advanced training in managing chronic conditions like diabetes, hypertension, COPD, and heart disease. These conditions frequently interact with

social factors, contributing to higher EMS call volumes. Training should emphasize early recognition of disease exacerbation, management of comorbidities, and the application of preventive care strategies that can stabilize patients in the community setting, reducing emergency department visits and hospital readmissions.

Given the rising number of mental health-related emergencies, EMS training should include comprehensive instruction on crisis intervention techniques, de-escalation strategies, and collaboration with community mental health resources. Providers should be trained to safely manage psychiatric emergencies in the field, including knowing when to engage with specialized crisis response teams or refer patients to community-based mental health services.

This additional training is essential in reducing the immediate reliance on emergency departments and connecting patients with appropriate long-term support through the PGFD MIH-CP program.

Incorporating Social Determinants into EMS Training

Training must also address how social determinants of health influence EMS care. Providers should learn to recognize how factors like poverty, food insecurity, housing, and lack of transportation and access to healthcare can exacerbate medical conditions and drive repeated EMS utilization. By gaining insights into these underlying issues, EMS personnel can better tailor their care approaches, make informed decisions on-scene, and connect patients with the most appropriate resources, such as social services or community health programs.

To keep EMS personnel up to date with evolving best practices, continuous professional development should be prioritized. This includes regular refreshers on treatment protocols, updates on new medications, and scenario-based simulations to help reinforce skills and prepare providers for high-pressure situations. Integrating peer reviews, case studies, and hands-on training opportunities can further enhance decision-making and clinical judgment in complex cases. Additionally, specialized training on chronic illnesses and mental health must be embedded into continuing education to maintain an elevated level of competency across all providers.

By prioritizing more advanced and continuous training in mental health, chronic disease management, and the impact of social determinants of health, Prince George's County EMS can ensure that its providers are not only armed with enhanced knowledge and technically skilled, but also attuned to the broader social and economic factors affecting patient care. This comprehensive approach to training will lead to better patient outcomes, more efficient use of resources, and a more compassionate EMS response to the community's evolving healthcare needs.

Aligning with EMS Agenda 2025

EMS 2050 AGENDA
Envision the Future

The EMS Agenda 2050 is a strategic framework developed to guide the future of emergency medical services across the United States. It envisions a people-centered, adaptable, and integrated EMS system that collaborates seamlessly with healthcare and community partners to provide continuous, high-quality care from the field to the hospital and beyond. The EMS Agenda 2050 emphasizes a proactive approach, utilizing evidence-based practices and advanced data systems to improve patient outcomes and system efficiency.

Prince George's County EMS is a vital component of the county's emergency response system, providing pre-hospital care through a network of highly trained EMTs, paramedics, and specialized support staff. The agency's staffing levels are structured to meet current demands, with personnel stationed across multiple units to respond to a wide variety of medical emergencies. In addition to standard emergency care, Prince George's County EMS engages in data-driven decision-making, collaborates with local hospitals to improve patient care transitions, and has implemented a Mobile Integrated Health program.

However, the system currently operates within a predominantly reactive model, responding primarily to emergency calls received through the 911 system. While there is some level of data sharing with hospitals via electronic Patient Care Records (ePCR) and the CRISP system, deeper integration with primary care, mental health services, and social support networks remains limited. The identification of high utilizers—individuals frequently using EMS services—is primarily reactive, based on emergency call data rather than proactive engagement or broader healthcare integration.

Contrary to the best practices outlined in EMS Agenda 2050, Prince George's County EMS does not have a fully developed process for proactively identifying high utilizers and other vulnerable populations before emergencies occur. The current system largely focuses on flagging high utilizers through call data analysis and reviewing these cases through Continuous Quality Improvement (CQI) processes. However, this approach is reactive and does not leverage the potential of predictive analytics or coordinated care strategies with healthcare partners.

These limitations highlight the need for a more integrated, data-driven approach to identifying and managing high utilizers. Prince George's County EMS needs to strengthen its ability to coordinate care for these patients by developing partnerships that extend beyond the emergency response framework and into primary care, mental health, and social services.

Building Integrated Health Systems

To align with the EMS Agenda 2050, Prince George's County EMS must shift from a reactive model to one that emphasizes proactive, integrated care. This means enhancing current efforts by building stronger linkages between EMS, primary care providers, hospitals, public health agencies, mental health services, and social support networks. By integrating care across these sectors, EMS can function not only as a responder to emergencies but as an initiative-taking partner in the broader healthcare delivery system, helping to manage patient care holistically.

Proposed Strategies for Enhanced Integration:

- Fostering Data Sharing Across Healthcare Sectors: Prince George's County EMS should continue to utilize Chesapeake Regional Information System for our Patients (CRISP) and work towards implementing systems that allow for real-time data sharing with healthcare partners. This includes exploring the use of shared electronic health records (EHRs) and leveraging technologies that facilitate seamless data exchange between EMS, hospitals, and community health services. There are current records management systems available that are interoperable with hospitals that allow real time data transfer, which is HIPPA and NEMSIS (National EMS Information System) compliant. Enhanced data sharing can improve patient care transitions, streamline communication, and support more comprehensive care planning.
- Developing Proactive Identification and Engagement Protocols: To better manage high utilizers, EMS should implement a proactive identification strategy that goes beyond emergency call data. By collaborating with hospitals, primary care providers, and social services, EMS can identify at-risk individuals earlier and coordinate comprehensive care plans that address their underlying health and social needs. This approach aligns with the EMS

Agenda 2050's focus on patient-centered navigation and can help reduce the frequency of emergency calls.

- Leveraging Mobile Integrated Health and Community Paramedicine Programs: Prince George's County EMS can expand its role by implementing community paramedicine programs that allow EMS providers to conduct home visits, provide advanced follow-up care, and connect patients with appropriate health and community resources. These programs can address chronic conditions, mental health conditions, and social needs in a non-emergency setting, reducing the pressure on EMS resources and improving patient outcomes.
- Adopting Predictive Analytics for Resource Management: Integrating predictive analytics into EMS operations can help anticipate spikes in demand based on local health trends, enabling more adaptive resource management, and improving response times. Predictive tools such as system status management software are designed to deploy response assets (based on historical demand) more efficiently for reduced response times. Other response and planning software such as *FirstWatch* (currently in use by PGFD) will also support the identification of emerging high utilizers, those with chronic and mental health illnesses, and any other incident or clinical trigger the organization desires to monitor, allowing for earlier intervention and coordinated care planning.

  The Prince George's County EMS program currently uses *FirstWatch*, a data analytics and monitoring platform, to trigger alerts for the Mobile Integrated Healthcare (MIH) team when high utilizers are identified based on predefined variables. However, the full potential of FirstWatch, particularly its ability to support predictive analytics and more advanced care coordination strategies, has not yet been fully realized. As of now, the system is primarily used for basic alerting functions, such as monitoring response metrics (e.g., drop times, missing ePCRs) and generating high-utilizer reports. There is growing interest within the department in exploring and leveraging the full capabilities of *FirstWatch*, but further efforts will be needed to fully integrate its advanced functionalities into the MIH-CP program.

By fully embracing the EMS Agenda 2050's vision of integrated health systems and fostering cross-sector collaboration, Prince George's County EMS can build a more resilient, adaptable system capable of meeting the evolving needs of the community. This shift will not only improve patient care but also ensure that EMS remains a critical, initiative-taking component of the healthcare landscape, effectively managing demands and maintaining high standards of care even under pressure.

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SECTION 6. MOBILE INTEGRATED HEALTH-COMMUNITY PARAMEDICINE

PGFD Mobile Integrated Health-Community Paramedicine

The Mobile Integrated Healthcare-Community Paramedicine (MIH-CP) program for Prince George's County EMS aims to address specific patient demographics and social determinants of health that lead to high utilization of emergency services. Prince George's County faces complex challenges, including limited access to primary care, high rates of chronic illnesses like diabetes, hypertension, cardiovascular disease, and the prevalence of mental health illnesses. These issues are compounded by socio-economic factors such as poverty, housing instability, food insecurity, and lack of transportation, which collectively create barriers to timely and appropriate healthcare.

The MIH-CP program represents a strategic opportunity to shift from reactive emergency response to initiative-taking and patient-centered healthcare with a strategic goal of reducing the overall dependency on emergency services. By delivering tailored in-home services, MIH-CP aims to bridge the gap between emergency response and ongoing healthcare, ensuring that patients with chronic conditions receive comprehensive management and support in their homes rather than frequently visiting emergency departments.

For instance, the MIH-CP program targets frequent EMS users who struggle with managing chronic diseases, providing them with medication management, health education, and routine check-ups. MIH-CP paramedics, through agency medical protocols, work closely with primary care providers and specialists to maintain continuity of care and intervening early to prevent disease exacerbations that could lead to emergency situations. Evidence suggests that both patients and providers experience higher satisfaction with ambulatory in-home services, highlighting the relative advantage of MIH-CP over traditional emergency department visits.[18]

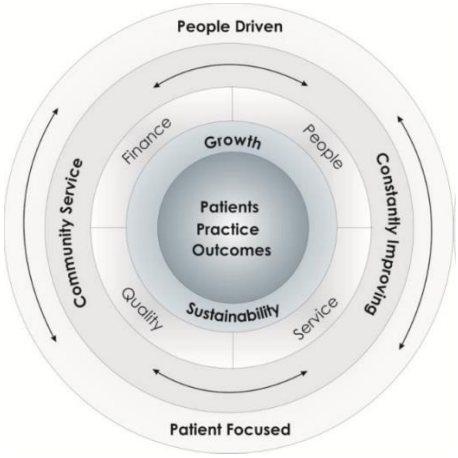
Mental health is a prevalent factor driving EMS utilization in Prince George's County. The MIH-CP program addresses this by integrating behavioral health services with their clients. Community paramedics trained in mental health care, crisis intervention, and de-escalation techniques can provide more consistent and appropriate care for individuals experiencing mental health crises. This approach reduces EMS calls and enhances long-term mental health support for these patients.

To maximize the impact of the MIH-CP program, it must address social determinants of health that drive EMS demand. Establishing partnerships with community organizations, public health agencies, and social services is essential to extend support beyond traditional medical care. For example, paramedics could collaborate with housing services to tackle homelessness, work with food assistance programs to reduce food insecurity, or coordinate with transportation services to help patients access healthcare appointments.

Data-driven decision-making is crucial in identifying current and potential high-frequency EMS users and tailoring interventions effectively. By leveraging data from EMS records, healthcare providers, and social services, the MIH-CP program can create comprehensive patient profiles that account for both medical needs and social factors. This data supports the development of

18. O'Connor, L., Behar, S., Refuerzo, J., Mele, X., Sundling, E., Johnson, S.A., Mattocks, K.M., Factors Affecting the Implementation of Mobile Integrated Health Programs for Acute Care of Older Adults, 2024.

customized care plans, ongoing progress monitoring, and adaptive interventions to optimize patient outcomes.



Source: *Medical Center Navicent Health EMS Strategic Plan, n.d. (2018). Unpublished internal document.*

Any MIH-CP program should consider the unique needs of populations impacted by social and economic barriers to care.

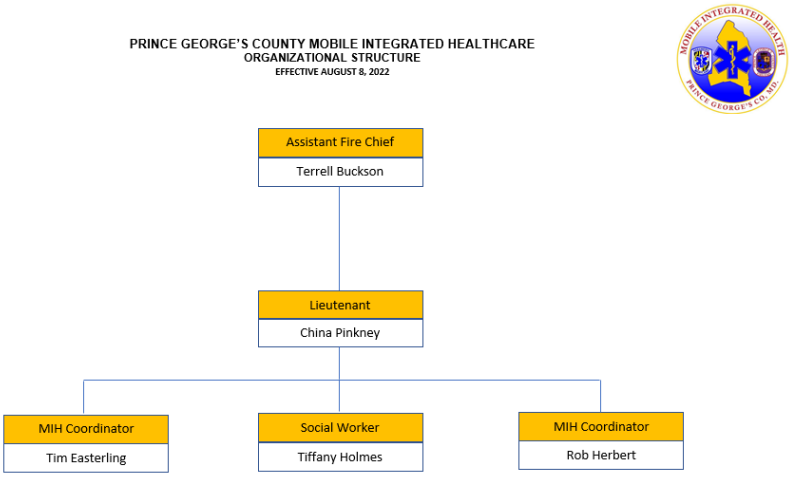
By focusing on preventive and in-home services, chronic disease management, mental health support, and community partnerships, an MIH-CP program can significantly reduce emergency service demand and improve overall patient care.

Through a combination of personalized, data-driven strategies, the MIH-CP program has the potential to transform healthcare delivery for the county's most vulnerable residents.

Staffing, Recruitment, and Retention

Currently, the PGFD MIH-CP program is staffed with a Lieutenant who serves as the program coordinator, two PGFD Paramedics, and one social worker. An Assistant Chief oversees the program in addition to other EMS duties and responsibilities.

Figure 20: PGFD MIH-CP Organizational Chart



A primary challenge for the MIH-CP program is the shortage of specialized staff trained in community paramedicine and integrated care models. Unlike traditional EMS roles, MIH-CP staff require advanced skills in chronic disease management, mental health care, and social services coordination, all of which extend beyond the scope of emergency response. This skill gap limits the program's capacity to deliver initiative-taking, consistent care to current and potential program clients across the healthcare system.

To address these staffing challenges, recruitment should focus on paramedics who are committed to expanding their knowledge, skills, and abilities (KSAs) in community health, chronic disease management, and mental health care. Marketing the MIH-CP program as a unique opportunity for career growth, community impact, and professional development will be key to attracting qualified candidates.

Although salary incentives, signing bonuses, and tuition reimbursements may already exist, the emphasis should be on positioning the MIH-CP role as a pathway to advanced clinical practice and community service. Enhancing training programs as detailed in this report, and professional development opportunities within the MIH-CP framework can foster a sense of purpose and fulfillment among paramedics, reducing turnover and increasing job satisfaction.

Mobile Integrated Health Medical Direction

Effective medical direction is a cornerstone of the MIH-CP program, ensuring that patient care is consistently aligned with best practices and clinical standards. While Dr. Goltz currently oversees medical direction, there is a recognized need for broader community paramedicine client care. Expanding medical oversight and protocols for the MIH-CP program will strengthen clinical decision-making and ensure that the MIH-CP program remains responsive to emerging healthcare trends and evidence-based practices.

Enhancing Medical Oversight and Collaboration

Expanding MIH-CP medical protocols provides an opportunity to broaden the role of community paramedics to include in-home care, chronic disease management, palliative care, and other advanced interventions. Such expansions can reduce hospital readmissions, decrease EMS transport, and improve overall patient outcomes by managing conditions proactively within the home environment. For example, implementing in-home management protocols for patients with chronic heart failure (CHF) or chronic obstructive pulmonary disease (COPD) could reduce exacerbations and avoid the need for emergency care transport.

Key Elements of Enhanced Medical Direction:

- Regular Medical Director Meetings: Establish routine meetings between the MIH-CP team and medical directors to review protocols, discuss clinical outcomes, and share insights on complex cases. These meetings provide a platform for collaborative decision-making and ensure that protocols are regularly updated based on the latest clinical guidelines and community needs.
- Standardization of Protocols: Collaborative oversight from PGFD medical directors will help standardize protocols across the MIH-CP program, ensuring that all paramedics operate under unified clinical guidelines. This approach promotes consistency in care delivery and reduces variability in patient outcomes, particularly in managing high utilizers of EMS who often have complex medical and social needs.
- Active Involvement in Protocol Development: Medical Directors should be directly involved in developing and revising MIH-CP protocols, bringing their expertise to ensure that guidelines are evidence-based, clinically sound, and tailored to the unique needs of Prince George's County. Their input is critical in adapting protocols to address specific issues such as mental health crises, chronic disease management, substance abuse, and in-home care interventions that prevent unnecessary hospitalizations.
- The American College of Emergency Physicians (ACEP) emphasizes the role of medical directors in provider education and CQI activities within MIH-CP programs. Active involvement

from medical directors in these areas is essential to maintaining high standards of care and ensuring that paramedics are equipped with the knowledge and skills needed to deliver effective in-home healthcare.

- Provider Education and Training: PGFD Medical Directors should play a key role in educating MIH-CP staff, offering insights into the latest clinical practices, emerging healthcare challenges, and advanced care techniques. Training programs should be designed collaboratively to cover areas such as mental health interventions, chronic disease management, palliative care, and community paramedicine best practices.
- CQI Activities: Medical Directors should be actively involved in CQI activities, including case reviews, performance evaluations, and protocol audits. Their participation ensures that clinical outcomes are continuously monitored and that areas for improvement are identified and addressed promptly. Regular feedback from medical directors can guide protocol adjustments and enhance overall program performance.

Integration with Broader Healthcare and Human Services Systems

For the MIH-CP program to thrive, medical direction must extend beyond the EMS environment and integrate with broader healthcare and human services systems. Collaborative relationships with hospitals, primary care providers, behavioral health agencies, and human services organizations are essential for creating a cohesive care continuum that supports high utilizers of EMS services and patient-centered navigation and care.

- Cross-Disciplinary Collaboration: Medical Directors should work closely with healthcare providers, human services, and behavioral health agencies to align MIH-CP protocols with broader clinical guidelines and care standards. For example, coordinating with a local behavioral health crisis response team can provide real-time support to MIH-CP paramedics managing psychiatric emergencies in the field. Similarly, working with social services to create referral pathways for housing assistance can address underlying social determinants that contribute to frequent EMS use.
- Data Sharing and Analysis: Regular communication between medical directors and healthcare partners should include data sharing and joint analysis of patient outcomes. For instance, data sharing agreements with local hospitals can allow for real-time access to patient discharge information, enabling MIH-CP providers to conduct timely follow-up care and prevent readmissions. Additionally, collaborating with human services agencies to analyze data on food insecurity or transportation barriers can help target interventions more effectively, addressing the root causes of repeated EMS calls.

In Prince George's County, leveraging partnerships with County Health and Human Services to create care plans for patients with complex medical and social needs can provide an integrated approach. For example, integrating EMS data with social and public health services databases could help identify patients eligible for in-home palliative care services, further reducing EMS calls and hospital admissions. Collaborative protocols could also be established with local food banks and nutrition programs to support patients with chronic conditions that require dietary management.

Expanding medical direction within the MIH-CP program is crucial for maintaining clinical excellence, ensuring protocol consistency, and enhancing collaboration with healthcare, human services, and behavioral health providers, and creating a system of patient-centered navigation. By actively engaging multiple Medical Directors in protocol development, provider education, and CQI activities, the MIH-CP program can continue to evolve in line with best practices and effectively meet its clinical objectives. A strong, collaborative medical direction

structure will ultimately enhance patient outcomes and strengthen the MIH-CP program's impact on community health.

MIH-CP Protocols and Guidelines

To ensure the effectiveness and sustainability of the Prince George's County MIH-CP program, it is critical to develop comprehensive, evidence-based protocols that address patient-centered navigation and incorporate continuous improvement systems. The evolving healthcare landscape—shaped by chronic diseases, mental health crises, substance abuse, and access to care challenges—demands that the MIH-CP program establish robust guidelines that are adaptable based on real-time data and community feedback.

Note: *While some MIH protocols in other regions may include nurse practitioners as part of the care team, the current MIH-CP program in Prince George's County does not have a nurse practitioner integrated into its operations. This may be a potential area for future development as the program expands, allowing for more comprehensive in-home care and chronic disease management.*

Developing Evidence-Based Protocols

The foundation of the MIH-CP program must be built on protocols that are evidence-based and tailored to the specific needs of Prince George's County population. These protocols should integrate best practices from leading MIH-CP programs nationwide while addressing local challenges such as mental health management, chronic disease care, and substance use disorder treatment.

Protocols should be developed with a thorough understanding of the local health environment, including socio-economic factors that drive EMS utilization, such as poverty, housing instability, and lack of access to primary care. Incorporating feedback from community health assessments, patient interviews, and local healthcare providers will ensure that protocols are relevant and responsive to the community's needs.

Patient Care Coordination

Importantly, the integration of technology platforms like CRISP (Chesapeake Regional Information System for our Patients), a regional health information exchange (HIE), offers significant potential for improving patient care coordination. CRISP allows EMS providers to access real-time patient data, such as medical history, prior hospitalizations, and medications, which are critical during emergency responses. This system enables EMS personnel to deliver more informed, patient-centered care in the field, ultimately improving the quality and coordination of care during and after emergencies.

Prince George's County EMS has been participating in CRISP since 2021, with initial testing beginning in 2017. With continued participation reported at the time of CPSM's evaluation. By leveraging CRISP's capabilities, EMS providers can not only reduce unnecessary hospital transport but also identify high-utilizer patients and proactively manage chronic conditions, mental health crises, and substance use disorders. Full utilization of CRISP will enable the MIH-CP program to better identify at-risk patients, track patient outcomes, and ensure continuity of care across healthcare settings.

Continuous Improvement Through Data-Driven Updates

To keep pace with the dynamic nature of community health, the MIH-CP program must implement a structured approach to continuous protocol improvement. This involves regular

reviews of program data, feedback from paramedics and healthcare partners, and adjusting protocols to address identified gaps or emerging health challenges.

Regular protocol audits and revisions should be a routine process where protocols are reviewed and revised based on performance data and trending community healthcare and social needs. This process should include comparing the initial Medical Priority Dispatch System (MPDS) call determinant with the actual outcome to ensure that call categorizations are accurate and appropriate. For instance, analyzing the outcomes of EMS calls, assessing the effectiveness of patient referrals, and measuring the success rates of in-home interventions should be part of this audit. Suggested protocols to audit could include mental health crisis management, chronic disease home interventions, and substance use disorder response. Adjustments based on these audits can improve the quality and consistency of care and help ensure that EMS resources are being dispatched correctly based on the call determinants.

Implementing outcome measurement systems to track the impact of the MIH-CP program should be considered. While reductions in EMS call volume among high utilizers are one goal, increased client navigation to appropriate services such as mental health resources, primary care, or social services is a more realistic and immediate outcome. The data integration capabilities provided by CRISP for example will play a crucial role in monitoring these outcomes. Key performance indicators (KPIs) should also include improvements in patient health outcomes, better management of chronic conditions, and enhanced patient satisfaction with in-home care services.

Lastly the development of robust feedback loops involving frontline paramedics, healthcare partners, and patients to gather insights into what is working well and where improvements are needed is a valuable input tool for continuous improvement. CRISP's data-sharing capabilities will allow EMS providers, MIH-CP program staff, and healthcare partners to review patient outcomes post-discharge, enabling more accurate adjustments to care protocols. This feedback ensures that protocols evolve based on real-world experiences and adapt to meet patient needs more effectively.

MIH-CP Team Training and Education

Comprehensive team training and education are critical to the success of the PGFD MIH-CP program. A structured and robust training approach is essential to equip paramedics with the skills necessary for effective in-home care, chronic disease management, mental health intervention, and the use of advanced technologies like telemedicine. Currently, the program faces a significant gap in formalized training, as outlined in the MIH manual, which details the specific needs for training related to home visits, risk stratification, and patient management.

To address these gaps, the MIH-CP program should consider implementing a robust training framework that includes both initial education and ongoing professional development. Training should be multifaceted, covering critical areas such as chronic disease management, mental health crisis intervention, community engagement, and the application of telemedicine in home care settings.

Key components of the MIH-CP training framework include:

Development of structured training programs for new MIH-CP staff that cover core competencies, including patient assessment, home visit protocols, risk stratification, and evidence-based management of chronic diseases and mental health conditions.

Continuous professional development opportunities should be developed internally, regionally with other MIH-CP programs, and externally through formal coursework and conferences that focus on areas such as advancements in clinical treatment guidelines for chronic diseases, new treatment technologies, and advanced client-visit care techniques. For example, EMS providers can participate in courses offered by organizations like the National Association of Emergency Medical Technicians (NAEMT) or attend workshops through the Maryland Institute for Emergency Medical Services Systems (MIEMSS). Ongoing education helps maintain high competency levels among MIH-CP providers and ensures they are equipped to manage evolving community health challenges.

Given the high prevalence of mental health crises and chronic conditions among high utilizers, specialized training modules should be developed in collaboration with mental health professionals and chronic disease experts. Training can include partnerships with local behavioral health agencies, such as Maryland Behavioral Health Administration (BHA), to cover advanced de-escalation techniques, therapeutic communication, and chronic disease self-management education that paramedics can pass on to patients. Access to mental health first aid certifications and chronic disease management courses through professional health organizations will further strengthen paramedic capabilities.

Incorporating Simulation Exercises and Case Reviews

To ensure paramedics are prepared for the diverse challenges encountered in the field, the MIH-CP program should integrate regular simulation exercises and case reviews into its training regimen. These activities help bridge the gap between theoretical knowledge and practical application, allowing paramedics to refine their skills in controlled environments.

Regular simulation exercises should replicate common scenarios encountered by MIH-CP teams, such as managing a diabetic patient in crisis or responding to a mental health emergency. Simulation centers, such as the UMBC Simulation Training Center, can provide state-of-the-art facilities for hands-on practice. These simulations enhance clinical skills, decision-making, and patient communication, increasing readiness for actual patient encounters.

Case reviews are invaluable as well for continuous learning, offering paramedics the opportunity to analyze past encounters, identify areas for improvement, and share best practices with peers. Structured case reviews should be conducted regularly and include feedback from Medical Directors and other healthcare professionals to provide a well-rounded perspective on patient care. Collaborative sessions with local hospital partners, County social and public health services, and behavioral health experts can deepen the learning experience.

Emphasizing the Use of Telemedicine and Technology

The integration of telemedicine is a critical component of modern MIH-CP programs, providing paramedics with access to remote consultations and specialist support during patient encounters. Training should emphasize the use of telemedicine as a tool for enhancing patient care, particularly in managing complex cases that require input from a broader healthcare team.

MIH-CP staff should receive specific training on the use of telemedicine platforms, including how to conduct virtual consultations, troubleshoot technical issues, and incorporate remote advice into their care plans. Training sessions could be conducted in partnership with local health systems that already employ telemedicine, such as MedStar Health, offering real-world applications and insights.

Creating a Culture of Continuous Learning

To maintain an elevated level of competency, the MIH-CP program must foster a culture of continuous learning among its staff. This includes encouraging paramedics to seek out new educational opportunities, participate in professional conferences, and engage with ongoing research in community paramedicine and mobile integrated healthcare. This includes access to professional development resources that provide access to professional development resources such as online courses, webinars, and industry publications. For example, MIH-CP staff can access webinars through the International Roundtable on Community Paramedicine (IRCP) or explore courses offered by the American College of Emergency Physicians (ACEP). These resources keep MIH-CP staff updated on the latest trends and innovations in MIH-CP care.

Structured and ongoing training is foundational to the success of the PGFD MIH-CP program. By developing a comprehensive training framework that includes initial education, ongoing professional development, simulation exercises, and technology integration, the MIH-CP program can ensure that its team remains competent, confident, and prepared for the complex challenges of community healthcare. Investing in education and training will not only enhance the skills of paramedics but also improve patient outcomes, making the MIH-CP program a leading model in innovative healthcare delivery.

The MIH-CP program must also prioritize enhanced training and skills development to meet the complex healthcare needs of the community effectively. This includes specialized training in several key areas:

- Enhanced Patient Assessments: MIH-CP staff should receive advanced training in comprehensive patient assessments that go beyond the typical emergency response. This includes understanding social determinants of health, conducting detailed home safety assessments, and identifying risk factors that may contribute to the client's health condition.
- Chronic Disease Recognition and Ongoing Care: Training should focus on recognizing and managing chronic diseases commonly seen among high utilizers, such as congestive heart failure (CHF), Chronic Lower Respiratory Disease(CLRD), diabetes, and hypertension. Providers should be skilled in ongoing care techniques, such as medication management, patient education, and early treatment intervention that prevent exacerbations and reduce the need for emergency care.
- Mental Health Crisis Intervention: As outlined previously, mental health cases are prevalent in the County. Training should include de-escalation techniques, crisis intervention strategies, and the ability to coordinate care with mental health professionals. Enhanced skills in mental health assessments will enable MIH-CP providers to manage behavioral health emergencies more effectively, reducing the burden on EMS ground transport and improving patient outcomes.
- Enhanced In-Home Treatments: The MIH-CP program should expand its scope of in-home treatments for specific clinical groups, including those with Congestive Heart Failure, Chronic Lower Respiratory Diseases, Diabetes, and other chronic conditions. Training paramedics to deliver treatments such as nebulizer therapy, wound care, and basic intravenous medications at home can help stabilize patients and prevent unnecessary hospital visits and EMS ground transport.

Credentialing and Certification Programs

Advanced certification programs focusing on community paramedicine, mental health intervention, and chronic disease management are critical for professional development. One viable solution is the Community Paramedicine Series offered by the National Association of

Emergency Medical Technicians (NAEMT). Prince George's County EMS should consider sending key MIH-CP staff to obtain instructor certification in this series, allowing the program to be implemented locally and tailored to the specific needs of the County. While options within Prince George's County or the region may be limited, partnerships with institutions like the University of Maryland or specialized paramedicine certification centers such as the International Board of Specialty Certifications can further expand educational and credentialing opportunities.

Source: www.anemt.org

Source: www.ibscertifications.org

Formalizing Partnerships with Healthcare and Social Services

One of the most pressing needs for refreshing the MIH-CP program is the formalization of partnerships with additional healthcare and community-based organizations. Currently, the lack of structured collaboration between EMS, hospitals, primary care providers, public health services, and social services undermines the program's ability to provide a coordinated continuum of care.

Key Partnerships to Formalize:

- County Public Health: Partnering with the County Public Health department can facilitate coordinated care for patients with chronic conditions and complex social needs. These partnerships can help connect high utilizers with healthcare and preventive services, health education, and community health initiatives.
- County Social and Human Services: Collaborating with social and human services will enable the MIH-CP program to address non-medical needs such as housing instability, food insecurity, transportation issues, and mental health challenges. Establishing clear referral pathways to these services can help reduce the frequency of emergency calls by addressing underlying social factors.
- Food Assistance Programs: Working with local food pantries and nutritional assistance programs can support patients with dietary needs related to chronic illnesses, such as diabetes and heart disease. Providing patients with resources to access healthy food can improve disease management and reduce emergency incidents.

- County Transportation Services: Establishing connections with county transportation services can help patients who face barriers in accessing medical appointments, thus reducing the need for EMS as a default transportation option.
- County Behavioral Health Services: This agency covers many clinical issues and challenges to include suicide and mental health, alcohol and drug prevention and outreach, and tobacco use and prevention programs. Additionally, this agency has a mobile response program (suicide and crisis lifeline) and an overdose response program that includes Naloxone training and Naloxone kit distribution.

These partnerships should be formalized through Memoranda of Understanding (MOUs) that outline shared responsibilities, communication protocols, the integration of client data, and collaborative care strategies. By working closely with healthcare and community organizations, the MIH-CP program can create a more integrated system of care for high utilizers.

Formalized partnerships with local hospitals, behavioral health services, and community organizations are pivotal to the success of the MIH-CP program. These collaborations enable a more seamless care continuum, extending the reach of paramedics beyond immediate emergency response to long-term patient support.

Conclusion

Refreshing the MIH-CP program requires addressing both internal and external barriers. Internally, enhanced recruitment, retention, and training efforts are essential to expanding program capacity and improving care delivery. Externally, formalized partnerships with healthcare providers, social services, and community organizations will bridge gaps in patient care and ensure that high utilizers receive appropriate interventions in the right settings.

Source: *Swensen, Kira, et al. "Community Paramedicine: A New Approach to Health in Rural Communities." (2021.*

The continuous development and refinement of MIH-CP protocols are essential to meeting the evolving healthcare needs of Prince George's County. By integrating evidence-based practices, fostering community partnerships, and investing in ongoing training and data-driven improvements, the MIH-CP program can provide responsive, effective care that reduces emergency service reliance and enhances patient outcomes. A commitment to protocol excellence and adaptation will position the MIH-CP program as a leading model in community healthcare innovation.

Integrating advanced surveillance tools will empower the MIH-CP program to make data-driven decisions, streamline care delivery, and better serve high-frequency EMS users. By combining these strategies, the MIH-CP program will be better positioned to address the social determinants of health that drive high EMS utilization and improve overall health outcomes for Prince George's County residents.

SECTION 7. OUTCOMES AND STRATEGIC PLANNING INITIATIVES

PGFD MIH-CP Strengths, Weaknesses, Opportunities, and Threats

In-person stakeholder meetings were conducted with operational and EMS command staff and MIH-CP staff and system stakeholders to understand better EMS and MIH-CP operations and to gain input on system strengths, weaknesses, and opportunities, what is working or not working, needs of the MIH-CP program, current state of the MIH-CP program, and the future. Stakeholder meetings included:

- PGFD Operational and EMS Command Staff.
- MIH-CP program leadership and staff.
- Prince George's County Health Department.
- Prince George's County Social Services Department.

Based on the feedback from various stakeholders, strengths, weaknesses, opportunities, and threats present to CPSM as:

Strengths of the PGFD MIH-CP Program

- There is a current program in place with a dedicated staff from which to draw data and experience from.
- Medical Priority Dispatch System in place in the Public Safety Communications Center.
- Dedicated MIH-CP staff that includes a Social Worker.
- Strong Community Health Assessment (Department of Public Health document).
- Established partner agencies include Departments of Public Health and Social Services, Prince George's County Behavioral Health Division, Luminus Health.

Weaknesses of the PGFD MIH-CP Program

- Current MIH-CP staff numbers are insufficient to implement necessary programs to impact the magnitude of the issues and challenges of the community.
- MIH-CP program not utilizing the full breadth and depth of current and potential community healthcare and social needs partners.
- Lack of permanent care facilities in the County, as described in the Community Health Assessment.
- MIH-CP Medical Director interaction and planning.
- Deficient mental health crisis beds in the County which impact 911 EMS calls for service and transport.
- Deficient MIH-CP program analytics that are interoperable with PGFD EMS analytics.
- Deficient alternative treatment and patient navigation destinations for MIH-CP program.

Opportunities for the PGFD MIH-CP Program

- Opportunity to partner with more County, community, and healthcare agencies with a goal of increasing client navigation opportunities.
- Enhanced MIH-CP protocols that focus on enhanced in-home care for MIH-CP program clients.
- More focused Medical Priority Dispatch System call taker questioning that further defines EMS call acuity levels (further separation between higher (ALS) and lower (BLS) call determinants).
- Increased MIH-CP referrals and increased patient/client-centered navigation to the most appropriate resource(s).
- Decrease in hospital readmissions and EMS transport.
- Addition of a Nurse Practitioner into the MIH-CP program.
- Point-in-time client information sharing between partners.

Threats the PGFD MIH-CP Program are Facing

- MIH staff re-directed to EMS field operations.
- Expanding population that has or develops social determinants of health and socio needs issues and challenges.
- Increased MIH-CP client needs.
- Maintaining status-quo staffing allotment to MIH-CP program--MIH-CP program staff burnout.
- MIH-CP program funding.

Mission, Vision, and Values

The MIH-CP staff were asked for thoughts regarding their vision, mission, and values for the MIH-CP program. Crafted through collaborative efforts and informed by the voices of stakeholders, the vision, mission, and values of the MIH-CP program embodies a collective commitment of caring and commitment. Rooted in a shared vision for the future, the feedback gathered from the MIH-CP staff highlights a unified aspiration to lead the way in modern MIH-CP practices and redefine industry standards.

Mission Statement

The Prince George's County Mobile Integrated Health-Community Paramedicine program mission is to enhance the quality of life for individuals in Prince George's County by addressing ongoing healthcare concerns through integrated, multi-agency collaboration. We are dedicated to promoting individual empowerment and increasing access to treatment and services for those living with various ailments. By securing vital resources and focusing on social determinants of health, we aim to mitigate negative risk factors and improve healthcare outcomes for our community. Together, we strive to create a healthier, more equitable future for all residents.

Vision Statement

It is the Vision of the Prince George's County Mobile Integrated Health-Community Paramedicine program to commit to being an integrated healthcare partner in the continuum of care, addressing the diverse needs of the public to achieve positive outcomes through quality and equitable services. Our vision is to improve the lives of individuals living with medical and mental health challenges while promoting emotional wellness. We strive to deliver essential services that support and enhance the quality of life for all residents of Prince George's County. By ensuring coordinated access to a healthcare system tailored to personal needs, we aim to elevate individual health outcomes and foster a healthier community for everyone.

Values

Organizational value words or statements indicate how an organization goes about accomplishing its mission and champions the guiding principles for the organization and its members. During stakeholder meetings with members of the MIH-CP program, the following values overwhelmingly were espoused by these program members.

Strategic Initiative 1 – MIH-CP Community Partnerships	
Initiative Manager(s): PGFD MIH-CP Leadership	
Goal 1.1: Continuum and Enhancement of Healthcare and Community Partnerships.	
Objectives	***Term (Near/Mid/Long)***
1. Maintain current and establish new partnerships with County and community agencies that directly link to patient/client - centered navigation opportunities to include, but not limited to: County Public Health Department County Social Services Department County Family Services Department County Housing Authority County Behavioral Health Division Prince George's County Food Equity Council Prince George's County Supplemental Nutrition Assistance Program Luminus Health Doctors Community Hospital Adventist HealthCare Fort Washington MedStar Southern Maryland Hospital Center UM Capital Region Health	Near Term
2. Establish memorandums of understanding with community/socio needs and healthcare partners that outline shared responsibilities, communication protocols, the integration of client data, and collaborative care strategies.	Near Term
3. Establish regular meeting times and dates with community/socio needs and healthcare partners that have a focus on MIH-CP current and potential clients, navigation successes and challenges, and enhanced collaboration efforts to enable a more seamless care continuum of MIH-CP paramedics and social worker staff.	Near, Mid, Long Terms

Strategic Initiative 2 – MIH-CP Program Resiliency	
Initiative Manager(s): PGFD Command Staff and MIH-CP Leadership	
Goal 2.1: Enhance MIH-CP Staff Training and Education	
Objectives	***Term (Near/Mid/Long)***
1. Establish a robust training framework that includes both initial education and ongoing professional development. Training should be multifaceted, covering critical areas such as chronic disease management, mental health crisis intervention patient/client centered navigation to the most appropriate resource, and the application of telemedicine in home care settings as a tool for enhancing patient care, particularly in managing complex cases that require input from a broader healthcare team. Specific training on the use of telemedicine platforms, including how to conduct virtual consultations, troubleshoot technical issues, and incorporating remote advice into their care plans should be conducted in partnership with local health systems that already employ telemedicine, offering real-world applications and insights.	Near Term
2. Support key MIH-CP staff to obtain NAEMT MIH Instructor certification and develop/implement an in-house MIH-CP certification program that is tailored to the specific needs of the County's social determinants of health and socio needs issues and challenges, and prevalent chronic health and mental health conditions.	Near-Mid Term
3. Support MIH-CP program staff in professional development opportunities internally, regionally, with other MIH-CP programs, and externally through formal coursework and conferences that have a focus on advancements in clinical treatment guidelines for chronic diseases, new treatment technologies, and advanced client-visit care techniques.	Near, Mid, Long Terms
4. Encourage and support qualified MIH-CP program paramedics to participate in the International Board of Specialty Certifications – Community Paramedicine credential as an avenue to further expand educational and credentialing opportunities.	Near, Mid, Long Terms
5. Develop and implement simulation exercises and case reviews into the training regimen. Design these training activities as a medium to bridge the gap between theoretical knowledge and practical application to allow MIH-CP program staff an opportunity to refine their skills in controlled environments.	Near, Mid, Long Terms

Strategic Initiative 2 – MIH-CP Program Resiliency	
Initiative Manager(s): PGFD Command Staff and MIH-CP Leadership	
Goal 2.2: Program Specific MIH-CP Staff Training and Education	
Objectives	***Term (Near/Mid/Long)***
1. Develop and implement advanced training for MIH-CP staff in comprehensive patient assessments that go beyond the typical emergency response. This should include understanding social determinants of health, socio needs, conducting detailed home safety assessments, and identifying risk factors that may contribute to the client's health condition. Training should emphasize early recognition of disease exacerbation, management of comorbidities, and the application of preventive care strategies that can stabilize patients in the community setting, reducing emergency department visits and hospital readmissions.	Near, Mid, Long Terms
2. Develop and implement advanced training for MIH-CP staff in recognizing and managing chronic diseases commonly seen among high utilizers, such as congestive heart failure (CHF), Chronic Lower Respiratory Disease(CLRD), diabetes, and hypertension. Staff should be skilled in ongoing care techniques, such as medication management, patient education, and early treatment intervention that prevent exacerbations and reduce the need for emergency care.	Near, Mid, Long Terms
3. Develop and implement advanced training for MIH-CP staff in mental health crisis and cases that include de-escalation techniques, crisis intervention strategies, and the skill to coordinate and navigate care with mental health professionals. Training should include in-depth education on the identification, assessment, and treatment of common mental health conditions such as anxiety, depression, substance abuse, and psychosis. Enhanced skills in mental health assessments will enable MIH-CP providers to manage behavioral health emergencies more effectively, reducing the burden on EMS ground transport and improving patient outcomes.	Near, Mid, Long Terms
4. Develop and implement advanced training and medical protocols for MIH-CP staff focused on expanding community paramedic scope to include in-home treatments for specific clinical groups, including those with congestive heart failure, chronic lower respiratory diseases, diabetes, and other chronic conditions as approved by the Medical Director with a goal of preventing unnecessary hospital visits and EMS ground transport.	Near, Mid, Long Terms

Strategic Initiative 2 – MIH-CP Program Resiliency	
Initiative Manager(s): PGFD Command Staff and MIH-CP Leadership	
Goal 2.3: MIH-CP Program Staffing	
Objectives	***Term (Near/Mid/Long)***
1. Develop recruitment and retention planning that focuses on paramedics who are committed to expanding their knowledge, skills, and abilities (KSAs) in community health, chronic disease management, and mental health care.	Near, Mid, Long Terms
2. Develop an MIH-CP recruitment marketing plan that outlines the MIH-CP program as a unique opportunity for career growth, community impact, and professional development that goes beyond 911 street paramedicine. The emphasis of the recruitment marketing plan should be on positioning the MIH-CP role as a pathway to advanced clinical practice and community service that embodies a sense of purpose and fulfillment among MIH-CP staff.	Near, Mid, Long Terms
3. Based on the high PGFD workload and expanding population that has or develops increased social determinants of health and socio needs issues and challenges, expand the paramedic staffing by two; develop two teams of two paramedics; expand the MIH-CP hours to sixteen hours/day Monday-Friday.	Near - Mid Terms
4. Based on the high PGFD workload and expanding population that has or develops increased social determinants of health and socio needs issues and challenges, expand the paramedic staffing to a level that supports two paramedics on duty seven days/week - sixteen hours/day.	Long Term
5. Based on the high PGFD workload and expanding population that has or develops increased social determinants of health and socio needs issues and challenges, expand the MIH-CP staffing to include a Nurse Practitioner on duty 8 hours/day Monday-Friday.	Mid-term

Strategic Initiative 2 – MIH-CP Program Resiliency	
Initiative Manager(s): MIH-CP Leadership	
Goal 2.4: MIH-CP Analytics	
Objectives	***Term (Near/Mid/Long)***
1. Develop and maintain outcome measurement analytics that incorporate regular audits of MIH-CP program outcomes, including reviewing referrals from EMS crews, assessing the effectiveness of patient navigation efforts, and monitoring the overall impact the MIH-CP program has on EMS call volumes.	Near, Mid, Long Terms
1a. Develop and maintain a proactive high user or potential MIH-CP client identification strategy that goes beyond emergency call data. By collaborating with hospitals, primary care providers, and social services, MIH-CP can identify at-risk individuals earlier and coordinate care plans that address their underlying health and social needs.	Near, Mid, Long Terms
2. Develop and maintain key performance indicators (KPIs) that include improvements in patient health outcomes, better management of chronic conditions, and enhanced patient satisfaction with in-home care services, preventive services, chronic disease management, mental health support, and community agency navigation. The data integration capabilities provided by CRISP should be integrated into these analytics.	Near, Mid, Long Terms
3. Continue to utilize CRISP and develop analytics that allow for real-time data sharing with healthcare and social services partners. This will include the use of shared electronic health records (EHRs) and leveraging technologies that facilitate seamless data exchange between EMS, MIH-CP, hospitals, and community health services. The overall goal is enhanced data sharing that improves patient care transitions, streamlines communication, and supports more comprehensive care planning.	Near, Mid, Long Terms
4. Integrate predictive analytics into EMS and MIH-CP planning and operations that will anticipate spikes in demand based on local health trends, which will enable more adaptive resource management, and improve response times and MIH-CP interaction. Predictive tools such as system status management software are designed to deploy response assets (based on historical demand) more efficiently for reduced response times. Other response and planning software such as *FirstWatch* (currently in use by PGFD) will also support the identification of emerging high utilizers, those with chronic and mental health illnesses, and any other incident or clinical trigger the organization desires to monitor, allowing for earlier intervention and coordinated care planning.	Near, Mid, Long Terms
5. Integrate MIH-CP client data with healthcare, social services, County, and community partners with a focus on timely follow-up care after hospital discharge to reduce readmissions and implementing interventions more efficiently and effectively, addressing the root causes of repeated EMS calls.	Near, Mid, Long Terms

Strategic Initiative 3 – MIH-CP Medical Direction, CQI, and Protocols	
Initiative Manager(s): MIH-CP Leadership	
Goal 3.1: Enhance Collaboration with Medical Direction	
Objectives	***Term (Near/Mid/Long)***
1. Implement monthly meetings with the PGFD Medical Director and Assistant Medical Director(s) for the purpose of discussing program successes, issues, challenges, training and education, client portfolio, patient/client navigation and navigation partners, protocols, and care provision.	Near, Mid, Long Terms
2. Implement bi-monthly training sessions led by the Medical Director and/or Assistant Medical Director(s) designed to offer insights into the latest clinical practices, emerging healthcare challenges, and advanced care techniques. Training programs should be designed collaboratively between MIH-CP leadership and the Medical Director to cover areas such as mental health interventions, chronic disease management, palliative care, and community paramedicine best practices.	Near, Mid, Long Terms
3. Implement quarterly meetings with the Medical Director and Assistant Medical Director(s) to review and discuss MIH-CP protocols and protocol adjustments tailored to the unique needs of Prince George's County such as mental health crises, chronic disease management, substance abuse, and in-home care interventions that prevent unnecessary hospitalizations.	Near, Mid, Long Terms
4. Implement quarterly meetings with the Medical Director and Assistant Medical Director(s) for Continuous Quality Improvement (CQI) case reviews, performance evaluations, and protocol audits. This collaboration ensures that MIH-CP clinical and socio-needs outcomes are continuously monitored and that areas for improvement are identified and addressed promptly.	Near, Mid, Long Terms

Strategic Initiative 3 – MIH-CP Medical Direction, CQI, and Protocols	
Initiative Manager(s): MIH-CP Leadership	
Goal 3.2: Enhance MIH-CP Medical Protocols	
Objectives	***Term (Near/Mid/Long)***
1. Development and redevelopment of MIH-CP protocols should be developed with a thorough understanding of the local health environment, including socio-economic factors that drive EMS utilization, such as poverty, housing instability, and lack of access to primary care.	Near, Mid, Long Terms
2. Develop and incorporate feedback from community health assessments, patient/client interviews, and local healthcare providers to ensure protocols are relevant and responsive to the community's needs.	Near, Mid, Long Terms
3. Conduct regular protocol audits and revisions as a routine so that protocols are reviewed and revised based on performance data and trending community healthcare and social needs. This process should include comparing the initial Medical Priority Dispatch System (MPDS) call determinant with the actual outcome to ensure that call categorizations are accurate and appropriate.	Near, Mid, Long Terms
4. Connect the Medical Director and Assistant Medical Director(s) with healthcare providers, human services, and behavioral health agencies to align MIH-CP protocols with broader clinical guidelines and care standards. For example, coordinating with a local behavioral health crisis response team can provide real-time support to MIH-CP paramedics managing psychiatric emergencies in the field. Similarly, working with social services to create referral pathways for housing assistance can address underlying social determinants that contribute to frequent EMS use.	Near, Mid, Long Terms

Strategic Initiative 3 – MIH-CP Medical Direction, CQI, and Protocols	
Initiative Manager(s): MIH-CP Leadership	
Goal 3.3: Enhance MIH-CP Continuous Quality Improvement	
Objectives	***Term (Near/Mid/Long)***
1. Ensure the CQI process focuses on enhancing the quality of MIH-CP care by evaluating enhanced medical protocols, provider interventions, and the overall effectiveness of healthcare navigation. This should include assessing how MIH-CP integrates with other county agencies, such as public health and social services, to deliver targeted, population-specific care that improves quality of life and reduces the need for emergency responses.	Near, Mid, Long Terms
2. Develop structured feedback from hospitals and community partners that include feedback loops with hospitals, community health organizations, and social service partners to gain insights into patient outcomes and refine MIH-CP care pathways.	Near, Mid, Long Terms
3. Utilize data analytics such as CRISP (Chesapeake Regional Information Exchange for our Patients) to track patient outcomes, monitor program performance, and make informed adjustments to protocols based on real-world results, ensuring that MIH-CP and EMS operations are continuously improved.	Near, Mid, Long Terms
4. Regularly audit referrals made by EMS crews to MIH-CP to ensure that patients are directed to the most appropriate resources and that follow-up care is adequately managed.	Near, Mid, Long Terms

Strategic Initiative 4 – EMS Resiliency and the Connection to MIH-CP	
Initiative Manager(s): PGFD Command Staff and MIH-CP Leadership	
Goal 4.1: Improve EMS Resiliency	
Objectives	***Term (Near/Mid/Long)***
1. Continual review of PGFD EMS system resiliency challenges that include resistance (MPDS call determinants), as well as absorption and restoration challenges (overall call demand and increased transport times compounded by increased at-hospital turnover time). It is assessed that resiliency affects overall response times for EMS units, which are 10.1 minutes on average and 16.0 minutes at the 90th percentile.	Near, Mid, Long Terms
2. Continually identify trends in the types of responses that occur in the community and link trends to service delivery solutions such as a greater number of BLS vs. ALS ambulances as the greatest percentage of calls may be lower acuity (not needing ALS services), and an MIH-CP program that is designed to improve healthcare navigation and the overall well-being of population-specific clients identified in response trends.	Near, Mid, Long Terms
3. Continually monitor EMS transport times as a performance assessment in the overall EMS quality control system. The data suggests EMS unit to hospital transfer time is excessive (72.6 minutes on average) and impacts EMS unit resiliency.	Near Term
3a. Develop Strategies to reduce EMS unit to hospital transfer times.	Near Term
4. Continually work with the County Emergency Communications Center to ensure the most appropriate call determinant is assigned to the call. The CPSM data analysis indicates that a substantial proportion of calls involve higher-acuity situations (Charlie and Delta levels), justifying ALS response, but potentially signaling inefficiencies in unit dispatch protocols.	Near, Mid, Long Terms
4a. Consider having the County Emergency Communications Center notify the MIH-CP team each time an Omega call determinant is assigned to an EMS unit for the purpose of follow-up to determine potential MIH-CP program assistance or navigation.	Near Term
5. Link EMS resiliency issues and challenges with MIH-CP program mission, goals, and objectives as a means to improve the overall healthcare of the community.	Near Term