CENTER FOR PUBLIC SAFETY MANAGEMENT, LLC

EMS SERVICES DELIVERY REPORT

Ulster County, New York

FINAL REPORT

CPSM®

CENTER FOR PUBLIC SAFETY MANAGEMENT, LLC
475 K STREET NW, STE 702 • WASHINGTON, DC 20001
WWW.CPSM.US • 716-969-1360

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Exclusive Provider of Public Safety Technical Services for
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The International City/County Management Association (ICMA) is a 108-year-old, nonprofit professional association of local government administrators and managers, with approximately 9,000 members spanning thirty-two countries.

Since its inception in 1914, ICMA has been dedicated to assisting local governments in providing services to their citizens in an efficient and effective manner. Our work spans all the activities of local government — parks, libraries, recreation, public works, economic development, code enforcement, Brownfields, public safety, etc.

ICMA advances the knowledge of local government best practices across a wide range of platforms including publications, research, training, and technical assistance. Its work includes both domestic and international activities in partnership with local, state, and federal governments as well as private foundations. For example, it is involved in a major library research project funded by the Bill and Melinda Gates Foundation and is providing community policing training in Panama working with the U.S. State Department. It has personnel in Afghanistan assisting with building wastewater treatment plants and has had teams in Central America providing training in disaster relief working with SOUTHCOM.

The **ICMA *Center for Public Safety Management* (ICMA/CPSM)** was one of four Centers within the Information and Assistance Division of ICMA providing support to local governments in the areas of police, fire, EMS, emergency management, and homeland security. In addition to providing technical assistance in these areas, we also represent local governments at the federal level and are involved in numerous projects with the Department of Justice and the Department of Homeland Security. In each of these Centers, ICMA has selected to partner with nationally recognized individuals or companies to provide services that ICMA has previously provided directly. Doing so will provide a higher level of services, greater flexibility, and reduced costs in meeting members' needs as ICMA will be expanding the services that it can offer to local governments. For example, The Center for Productivity Management (CPM) is now working exclusively with SAS, one of the world leaders in data management and analysis. And the Center for Strategic Management (CSM) is now partnering with nationally recognized experts and academics in local government management and finance.

Center for Public Safety Management, LLC (CPSM) is now the exclusive provider of public safety technical assistance for ICMA. CPSM provides training and research for the Association's members and represents ICMA in its dealings with the federal government and other public safety professional associations such as CALEA. The Center for Public Safety Management, LLC maintains the same team of individuals performing the same level of service that it has for the past seven years for ICMA.

CPSM's local government technical assistance experience includes workload and deployment analysis using our unique methodology and subject matter experts to examine department organizational structure and culture, identify workload and staffing needs, and identify and disseminate industry best practices. We have conducted more than 269 such studies in 37 states and 204 communities ranging in size from 8,000 population (Boone, Iowa) to 800,000 population (Indianapolis, Ind.).

Thomas Wieczorek is the Director of the Center for Public Safety Management. Leonard Matarese serves as the Director of Research & Program Development. Dr. Dov Chelst is the Director of Quantitative Analysis.

CENTER FOR PUBLIC SAFETY MANAGEMENT PROJECT CONTRIBUTORS

Thomas J. Wieczorek, Director
Leonard A. Matarese, Director, Research & Project Development
Dov Chelst, Ph.D. Director of Quantitative Analysis
Xianfeng Li, Data Analyst
Matt Zavadsky, EMS Subject Matter Expert

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EXECUTIVE SUMMARY

The Center for Public Safety Management LLC (CPSM) was retained by Ulster County, New York to conduct a comprehensive study of the emergency medical services system delivery within Ulster County, NY.

In our review, CPSM interacted extensively with County staff, the service providers, and key stakeholders to obtain and interpret certain documents, data, and information. We used this information/data to familiarize ourselves with the various aspects associated with the effectiveness of EMS and ambulance service delivery in Ulster County.

This information was used to determine the current state of EMS and ambulance service delivery in Ulster County and provide potential options for future EMS delivery in Ulster County.

Despite significant challenges faced by the County's EMS providers and provider agencies, and all the current county EMS staff, we have been extremely impressed with the level of professionalism, and dedication of Ulster County staff, community leaders, and all EMS and healthcare system stakeholders that we have had the pleasure of interacting with throughout this project.

The specific goal of this project is to assess the current state of EMS and ambulance service delivery in Ulster County, and provide various options for the county and its stakeholders to consider for future EMS and ambulance service sustainability. As part of that goal, we feel it is prudent to include an overall description of EMS and ambulance service delivery nationally to demonstrate that the service delivery challenges being faced by Ulster County, and its ambulance agencies, are not isolated to Ulster County; it is part of a national crisis occurring across the United States. Determining solutions to the current national EMS delivery crisis will require significant changes to how EMS is delivered, the model used for EMS delivery, and the funding necessary to secure a foundation for essential service delivery.

This report contains seven options for the county to consider to enhance ambulance service delivery for the residents and visitors of Ulster County. **Although Option 1 - Maintain Status Quo is included as a *possible* option for the county, we believe that Option 1 is not in the best interest of the county, its residents, or the patients served, or who will be served by the EMS system**.

EMS in Ulster County is at a crossroads. Many volunteer, and even combination paid and volunteer agencies, are struggling to maintain service levels for their local communities, often relying on neighboring jurisdictions for an EMS response. Our analysis of ambulance responses in the county reveals that six of the 17 ambulance agencies (35%) are responding to less than 70% of their calls. Due to the challenges facing rural EMS providers across the country, and feedback from community stakeholders in Ulster County, these challenges are likely to increase in the future.

The County has several potential options for ensuring the availability of reliable EMS services. These recommended options seem to be supported by many of the current EMS system agency leaders.

Ulster County has an area of 1,161 square miles with about 183,000 residents. The county is divided into 24 municipalities including a city, 20 towns, and three villages. The general information for each municipality including population and land area is presented in **Attachment I** of the accompanying **EMS SERVICES DATA ANALYSIS REPORT**.

The Ulster County EMS system studied in this report includes 21 ambulance agencies and 22 first response agencies shown in **Tables 1 and 2**. The ambulance agencies include 16 Ulster County agencies, two private/for-profit commercial ambulance agencies, and four out-of-county agencies that cover parts of Ulster County. The tables also describe the primary service areas for each EMS agency and the type of calls responded to by each first response agency.

Since the data analysis that accompanies this report was completed, several significant changes have occurred regarding ambulance service delivery in Ulster County.

Acquisition of Mobile Life Support Services (MLSS) by Empress Ambulance –
MLSS was acquired by Empress Ambulance in May 2023. Empress is a PatientCare EMS Solutions company, with over 800 staff and 130 emergency vehicles prior to these additions, providing emergency and non-emergency ambulance services to municipalities and hospital systems in New York's Westchester County, the Bronx and Manhattan boroughs, and has a significant existing presence in the Hudson Valley region.

These changes in service delivery models are indicative of the rapidly changing ambulance service dynamics in Ulster County, and the overall Hudson Valley region.

Kingston Fire Department Ambulance Service –
The City of Kingston initiated ambulance service provision within its fire department in early 2024, essentially ending a long-term relationship with its prior ambulance provider, Empress EMS (who recently acquired MLSS).

This will likely have the following impacts on ambulance service within Ulster County:

- Empress' response volume in the City of Kingston will be dramatically reduced, which will likely result in Empress reducing ambulance staffing for this east-central geographic area of the county.
- Kingston is an operational hub for Empress, and the reduced response volume, and reduced ambulance staffing, may reduce the available resources for Empress to provide mutual or automatic aid, and Advanced Life Support (ALS) intercept services to communities who had previously utilized them for these services.
    - This will likely reduce mutual aid resources in the county, placing additional strain on the EMS system.
- Kingston Fire Department may be willing to become one of the regional services referred to in Option 4; Funding for Enhanced Regional Services.

Ambulnz Contract for the Town of Marlborough –
The Town of Marlborough contracted with Ambulnz for primary ambulance coverage.

Summary of Overall Recommendations

Recommendation	Ulster County and local EMS agencies should review and revise dispatch processes to clearly delineate that the County PSAP is responsible for resource allocation to EMS responses.
Recommendation	Ulster County and EMS agencies should review the capabilities of the currently used Twiage system to determine additional uses that will help enhance EMS delivery and system analysis in Ulster County. If agencies who are not using Twiage are in need of funding to enable the use of this capability, the County should explore options for that necessary funding.
Recommendation	Ulster County, working collaboratively with local community stakeholders, should establish an "EMS Advisory Committee" comprised of EMS and community leaders to learn about key issues facing the EMS delivery system in Ulster County and provide input to potential ways to enhance service delivery.
Recommendation	Ulster County, along with community and healthcare stakeholders, should establish an "EMS System Performance Committee" to establish, collect and report EMS clinical performance metrics.
Recommendation	Ulster County should establish a reporting process for hospital at-destination times and share these reports with Health Alliance Hospital, Vassar Brothers Medical Center, MidHudson Regional Hospital and Ellenville Regional Hospital, executive leadership, as well as with all Ulster County ambulance agencies
Recommendation	Ulster County and local EMS agencies and medical directors, should review existing response procedures and undertake a process to reduce Lights and Siren ambulance responses to less than 30% of overall EMS responses.
Recommendation	Ulster County, and its EMS agencies, should explore ways to implement a Mobile Integrated Healthcare/Community Paramedic (MIH/CP) program using existing staffed ambulance and/or fly car response capacity.
Recommendation	Ulster County and the county's ambulance agencies should establish robust continuing relationship with the executive management of all major receiving hospitals, including regular meetings with their Chief Executive Officer, Chief Medical Officer, Chief Operations Officer, and Chief Nursing Officer to enhance collaborative relationships and share information regarding hospital and EMS agency operations.
Recommendation	Ulster County and its ambulance agencies should work toward the inclusion of area ambulance agencies in clinical service line meetings to enhance clinical and operational integration for quality assurance purposes to enhance pre-hospital care collaboration.

Ambulance Service Enhancement Options - Summary

A key component of this project is the development of options for the County, local ambulance agencies and community leaders to consider for enhancing the reliability of essential ambulance service delivery in Ulster County. As will be discussed in greater detail in this report, there are ambulance agencies in the county that are responding to fewer than 70% of their dispatched emergency medical responses. This results in inadequate coverage in their primary response area, substantial delays in ambulance responses, places a significant burden on other ambulance agencies and their personnel, and leaves the primary coverage area of the agency providing mutual aid uncovered.

After extensive input from local and county leaders, as well as a detailed analysis of current service levels, economic modeling, and operational realities, CPSM identified six potential options for the enhancement of ambulance service reliability in Ulster County:

Option 1:	Maintain Status Quo
Option 2:	Provide Financial Subsidy to Existing Provider Agencies
Option 3:	Safety-Net Countywide ALS Ambulance Service – County Operated Model
Option 4:	Safety-Net Countywide ALS Ambulance Service – Private Provider Model
Option 5:	Countywide ALS 'Fly Car' Model
Option 6:	Funding to Enhance Response Areas of Ambulance Agencies
Option 7:	Ulster County as a Regional Ambulance Staffing Resource

INTRODUCTION

This report examines EMS operations in Ulster County between **January 1, 2022, and December 31, 2022**. The response analysis is based on data as recorded in the computer-aided dispatch (CAD) system of the county's Emergency 9-1-1 Center during this timeframe. Ulster County has an area of 1,161 square miles with about 183,000 residents. The county is divided into 24 municipalities including a city, 20 towns, and three villages. The general information for each municipality including population and land area is presented in Attachment I. 911 call taking, and EMS dispatch is handled through a single, county operated Public Safety Answering Point (PSAP). This is a best practice and a significant benefit to 911 callers and EMS response resource allocation. Many communities operate multiple PSAPs, which often require callers to be transferred from one PSAP to another, which, absent significantly enhanced services being offered at the second PSAP, is not ideal or patient centric.

The Ulster County EMS system studied in this report includes 21 ambulance agencies and 22 medical first response agencies shown in Tables 1 and 2. The ambulance agencies include 16 Ulster County agencies, two commercial EMS agencies, and four out-of-county agencies that cover parts of Ulster County. The tables also describe the primary service areas for each ambulance agency and the type of calls responded to by each first response agency.

As mentioned earlier in this report, since this data analysis was completed, the City of Kingston initiated a behavioral health transport capable ambulance unit, the Town of Marlborough contracted with Ambulnz for primary ambulance coverage, and MLSS was acquired by Empress.

The data analysis component of this report is made up of six parts. The first part focuses on call types and dispatches. The second part explores the EMS workload. The third part presents an analysis of the busiest hours in the year studied. The fourth part studies the EMS service availability. The fifth part provides a response time analysis. The sixth and final part is an analysis of unit transports.

Between **January 1, 2022, and December 31, 2022**, the Ulster County EMS system responded to 23,492 calls. The total combined workload (deployed time) for all responding units was 30,420.9 hours. For the first arriving transport-capable unit, the average dispatch processing time for EMS calls was 3.1 minutes and the 90th percentile dispatch processing time was 4.2 minutes. The first arriving transport-capable unit's average total response time for EMS calls was 13.9 minutes and the 90th percentile total response time was 23.9 minutes.

EMS PROVIDERS IN ULSTER COUNTY

EMS in Ulster County is provided by a diverse combination of fire-department-based Medical First Response (MFR) agencies, and ambulance agencies. Many of these agencies are staffed by dedicated volunteers with a deep commitment to their communities.

Volunteers and volunteer agencies have extraordinarily strong community commitment and are viewed as honorable providers serving local communities. Rural communities across the country have faced increasing challenges recruiting and retaining volunteers[1]. This is due to a combination of increasing sophistication and expectations for EMS professionals, enhanced training requirements, increasing time commitments for maintaining volunteer roles in EMS agencies, and often unstable funding for EMS agencies. A recent study of rural EMS Directors revealed that only 43% of rural EMS agencies in America were fully staffed[2].

Across the U.S., rural ambulance agencies face continual challenges to ensure a trained workforce to meet the prehospital emergency care needs of their communities. Reliance on volunteer emergency medical technicians (EMTs) and paramedics with decreasing volunteerism in rural areas has forced some ambulance agencies to close and others to consider changes in organizational structure and staffing models, and affiliation with other agencies[3].

[1] Rural Policy Health Institute: Characteristics and Challenges of Rural Ambulance Agencies – A Brief Review and Policy Considerations; January 2021

[2] Rural Health Research and Policy Center: Issues in Staffing Emergency Medical Services: A National Survey of Local Rural and Urban EMS Directors; May 2008

[3] https://www.cnn.com/2021/05/22/us/wyoming-pandemic-ems-shortage/index.html

Table 1: Ambulance Agencies Serving Ulster County

Ambulance Provider	Service Area	Type
Diaz Ambulance	ALS and BLS for the Town and Village of Saugerties	Career
Ellenville Ambulance	ALS and BLS for the Cragsmoor, Ellenville, and Napanoch fire districts in the town of Wawarsing	Career/ Volunteer
Esopus Ambulance	BLS for the Town of Esopus	Volunteer
Gardiner FD – EMS	BLS for Gardiner Fire District	Volunteer
Grahamsville Ambulance**	EMS dispatched by Sullivan County	Volunteer
Hurley FD – EMS	BLS for Hurley Fire District	Volunteer
Kerhonkson-Accord First Aid Squad	BLS for Kerhonkson fire district, the parts of the Town of Rochester and the Town of Wawarsing	Career/ Volunteer
Livingston Manor Ambulance**	EMS dispatched by Sullivan County	Volunteer
Marbletown First Aid Unit	BLS for Town of Marbletown, part of Rosendale Town, and part of the Town of Rochester	Career/ Volunteer
Margaretville Ambulance**	EMS dispatched by Delaware County	Volunteer
Mobile Life Support Services*	ALS and BLS with CON for all county areas; Primary response agreements with: City of Kingston Town of Lloyd Town of Rosendale Town of Marlborough Town of Ulster	Private/For Profit
Modena FD – EMS	BLS for Modena Fire District	Volunteer
New Paltz Rescue Squad	BLS ambulance and ALS fly car for the Town and Village of New Paltz	Career/ Volunteer
Olive First Aid Unit	BLS for the Town of Olive	Career/ Volunteer
Pine Bush Ambulance**	BLS service dispatched by Orange County	Volunteer
Plattekill FD – EMS	BLS for Plattekill Fire District	Volunteer
Shandaken Ambulance	BLS ambulance and ALS fly car for Shandaken	Career
Shawangunk Valley FD - EMS	BLS for Shawangunk Valley Fire District	Volunteer
Wallkill Ambulance	BLS for Wallkill Fire District	Volunteer
West Hurley FD – EMS	BLS for West Hurley Fire District	Volunteer
Woodstock FD – EMS	BLS ambulance and ALS fly car for Woodstock Fire District, or the Village and Town of Woodstock.	Career / Volunteer

Note: *Contracted commercial service with Certificate of Need (CON) for the entire county.
**Contracted out-of-county EMS providers with primary coverage in Ulster areas.

Table 2: EMS First Response Fire Departments in Ulster County

First Responder	Response Incident Type Covered
Bloomington FD	Critical/Unstable
Centerville-Cedar Grove FD	Cardiac arrests and calls exceeding on-duty crews of Diaz Ambulance
Clintondale FD	Critical
Cottekill FD	Critical
Cragsmoor FD	All except Psych
East Kingston FD	All except Psych
Esopus FD	All except Psych
Glasco FD	Cardiac arrests and calls exceeding on-duty crews of Diaz Ambulance
Kingston FD	All EMS calls
Kripplebush FD	All except Psych
Lomontville FD	Critical
Mt. Marion FD	Critical
Rifton FD	All except Psych
Rosendale FD	Critical
Ruby FD	Critical
Saugerties FD	Cardiac arrests
Sawkill FD	All except Psych
Spring Lake FD	All except Psych
Stone Ridge FD	Critical
Tillson FD	Critical
Ulster Hose CO #5 FD	Critical
Walker Valley FD	Critical/Unstable/Medical Alarm

Note: FD=Fire Department/District.

National EMS Staffing Crisis

The shortage of EMS workers is a national crisis that has been reported extensively by local and national media outlets. In fact, a national database being maintained by the American Ambulance Association (AAA), the National Association of Emergency Medical Technicians (NAEMT), and the Academy of International Mobile Healthcare Integration (AIMHI) has chronicled over 1,076 local and national media reports about EMS services in the United States. Of these, there were 633 (59%) stories citing EMS system delivery challenges due to the EMS staffing crisis. The crisis is not limited to just ambulance providers, but every type of service delivery model, including fire agencies, with many fire agencies resorting to recruitment efforts that include sign-on bonuses for firefighter/paramedics up to $10,000. Examples of news articles and recruitment ads for fire departments are included at the end of this report.

The causes of the EMS worker shortage include the inherent risks of the EMS profession (the COVID-19 pandemic exacerbated this risk), the low wages that many EMS agencies are able to afford due to the challenging EMS economic model that prevents EMS agencies from paying competitive wages, and the current nursing shortage that is prompting many hospitals and other healthcare providers to offer high wages to EMTs and paramedics as an inexpensive alternative to nurse staffing in these settings. For example, a large hospital system in North Texas just advertised starting wages for paramedics to work in their emergency department at $48 per hour, with an $8,000 sign-on bonus. Current wages for paramedics in the region's EMS and fire agencies average $31 per hour.

The EMS worker shortage has forced many communities to re-evaluate their service delivery models to align actual clinical and patient experience expectations more effectively.

In 2023, the New York State EMS Sustainability Technical Advisory Group released a report[4] titled: **New York State 2023 Evidence Based EMS Agenda for Future**.

This landmark report paints a bleak picture of EMS delivery in New York State, with notable findings such as:

"New York State's (NYS) emergency medical services are in trouble. Multiple ambulance services have closed their doors over the past several years, and many who remain open are unable to respond to emergency calls in any consistent fashion."

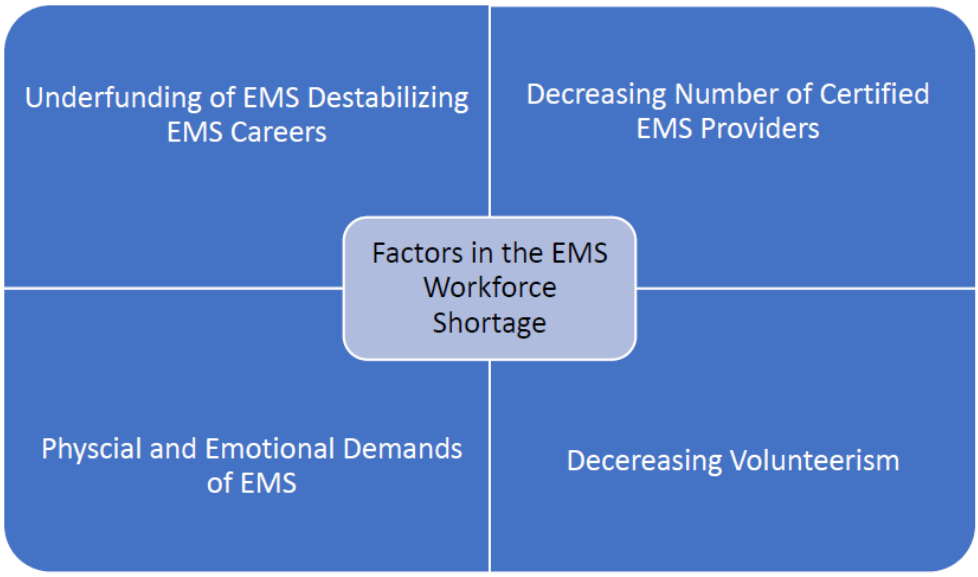
"The New York State EMS system has markedly deteriorated over the past several years due to declining volunteerism, lack of public funding to cover costs of readiness, inadequate staffing, rising costs, insufficient insurance reimbursement, rising call volumes, a lack of performance standards, poor understanding of the EMS system by elected officials and the public, NYS home rule, and lack of transparency and accountability for EMS agencies."

"The number of New York State certified EMS personnel is insufficient to meet the needs of communities. Data provided by the NYS Department of Health shows that the number of certified EMS personnel declined from about 80,000 to about 70,000 between 2019 and 2021, a decrease of approximately 13%."

"A citizen calling for EMS assistance has little to no awareness of when or what EMS will actually respond to their emergency."

[4] https://www.health.ny.gov/professionals/ems/docs/february_2023_sustainability_tag.pdf

"One of the largest hurdles in the EMS system is that without additional funding and recognition as a mandated and funded service, there will be a continued decay of agency and professional standards."



*From the New York State 2023 Evidence Based EMS Agenda for Future

New York State Rural Ambulance Services Task Force

In January 2022, the State Legislature (S3503c) created a 12-person New York State Rural Ambulance Services Task Force. The task force will evaluate and provide guidance for managing rural community EMS service needs to better provide more efficient services. The taskforce held their first official meeting February 2023 and has been meeting periodically to build a framework that will focus on rural needs throughout the entire state. Ulster County officials should monitor the work of this task force, and the recommendation and policy guidance offered through the Task Force's work.

National EMS Economic Crisis

The overall EMS economic model has been fragile for many years. EMS revenue is generally derived from either user fees, or public tax subsidy, or a combination of both. Fee for service revenue from ambulance service delivery is largely driven by the payer mix in the community. Payer mix is defined as the percentage of patients who are covered by major payer categories. Medicare pays a fixed amount, based on the 'allowable' fee determined regionally by the Centers for Medicare and Medicaid Services (CMS). The Medicare allowed amount is generally less than the cost of providing the service. Medicaid pays a fixed amount based on rates determined by the State Medicaid office. The Medicaid allowed amount is generally much less than the cost of providing the service.

Ambulance reimbursement from commercial insurance is generally better than Medicare, Medicaid, and uninsured claims, although commercial insurers are known for underpaying claims, resulting in a balance bill to patients, and an ensuring disagreement between the ambulance provider, the insurer and patient regarding what a usual and customary insurance payment is defined. There have been state and federal initiatives to limit the ability for ambulance providers to 'balance bill' patients, which poses a significant financial risk to ambulance providers.

The national EMS economic crisis, like the national EMS staffing crisis, has been reported extensively in local and national media outlets. Well-established highly performing EMS systems are failing, due primarily to the economic crises driven by skyrocketing costs for personnel, equipment, supplies and fuel, while fee for service revenues have remained low, or are decreasing.

The previously mentioned national database maintained by the AAA, NAEMT, and AIMHI has chronicled over 356 news stories citing EMS system delivery challenges due to the EMS funding crisis. The EMS workforce crisis is, in large part, due to the failing economic model. Over 57 communities have lost ambulance service altogether since January 2021.

To bolster EMS revenue, Medicare adjusted its allowable payment rate in 2021 and 2022 by 5.4% and 11.2% respectively, the highest annual increases in the past 20 years. However, even with those increases, the Medicare allowed amounts are still substantially less than the cost-of-service delivery when the CPI-U is increasing at historic levels, often greater than 15% annually.

Examples of these media reports are provided in Appendix 1.

Due to the increasing challenge of local volunteer EMS agencies mustering volunteers to respond to EMS calls, many ambulance agencies have begun using paid staff, either hired directly by the agency, or contracted through an EMS staffing agency. In this report, we identify staffing models as either 'volunteer' if they are exclusively volunteer staffed, 'career/volunteer' if they are staffed primarily with volunteers, but augment that staffing with paid staff, or 'career' if they are primarily paid staff, with or without supplemental staffing by volunteers.

COVID-19 Pandemic Impact

As with EMS agencies across the country, the COVID-19 pandemic had a negative impact on many of the agencies in Ulster County. While response volume did decrease slightly, volunteers were less likely to respond to ambulance calls. This may have been due to not only the concern about contracting a COVID-19 infection, but especially the impact of that infection on senior volunteers. Many of the volunteers for the agencies in Ulster County are in the age group that places them at greater medical risk from a COVID-19 infection. While COVID vaccines are readily available, the concern surrounding the resurgence and the growing threat of additional variants, or other infectious diseases, may impact the willingness of senior volunteers to respond to medical emergencies for years to come.

Agency Assessment

During a series of in-person meetings and an on-line survey, Ulster County's ambulance agencies provided input on a series of questions related to the status of their agency. These questions included:

- The agency's top current and future challenges.
- The challenges of the current EMS/Ambulance delivery in Ulster County,
- What things they feel should be changed about the current delivery model.

Top Three Challenges:

Staffing – With the exception of the City of Kingston Fire Department, all the ambulance agencies providing input as part of this study expressed increasing challenges maintaining ambulance staffing as one of their top three challenges. This includes the commercial ambulance services operating within the county.

Across the U.S., difficulties staffing volunteer EMS agencies have been categorized into the following themes.

Time Demand Related:

- Two income families working multiple jobs (financial obligations require job change, overtime, etc.).
- Inability to commit to training/continuing education and recertification demands (unable to meet CEU requirements).
- Lengthy transport/patient contact time taking away time with family, or at work.
- Additional demands - administrative duties (record keeping, scheduling).

Service Related:

- Broader range of services (new methods and patient care requirements; some do not want added responsibility).
- Abuse of emergency services by public (use of ambulance for ride to hospital, non-emergency).
- Internal challenges (varying culture among members, age of EMS members may multi-generations).
- Over-use of ambulance services (transport of mental patients, Long Term Care (LTC) patients for outpatient services, and hospital discharged patients: late night/after normal business hours).
- Leadership challenges (failure to manage change, lack of coordination).
- Friction/chronic problems between other health service personnel or agencies (lack of appreciation of acknowledgment of EMS by other parts of the healthcare system; and/or lack of involvement in seeking solution to problems faced by local providers).

Social/Community Related:

- Less emphasis on social aspects of volunteering (*lack of incentives*).
- Less community pride/loss of community feeling (*lack of appreciation/recognition*).
- Transience (*EMT moves or seeks full-time employment with urban services*).
- "Me" generation (*self-gratification/personal needs placed over service requirements*).
- Aging communities (*greater number of older people, decline in population*).

Funding Related:

- Challenges raising money for capital equipment and supplies.
- Insufficient ambulance transport volume to generate adequate fee for service revenue.
- Unstable public, ad valorem revenue (*tax support*).
- Inadequate reimbursement from government and insurers for services provided.

The EMS staffing crisis is not limited to volunteer agencies. As previously referenced, the EMS staffing crisis affects every service delivery type. In Ulster County, staffing and economic issues have dramatically affected Mobile Life Support Services (MLSS), the long-serving commercial ambulance provider in Ulster County. The staffing and economic crisis has led MLSS to limit their service delivery to communities in which they do not have a formal agreement to provide services. As such, they are concentrating coverage for the City of Kingston, and towns of Lloyd, Rosendale, Marlborough, and Ulster.

The change in service delivery by MLSS has had a detrimental effect on services for other parts of Ulster County who had been relying on MLSS for Advanced Life Support (ALS), back-up, and mutual aid coverage. This is not the fault of MLSS, simply a reality of allocation of resources based on community commitment to MLSS, specifically regarding the provision of funding to offset the cost of service delivery.

Funding – Seven of the 17 agencies responding to the agency assessment survey mentioned revenue and funding as one of their top three challenges. This was also indicated as a major challenge by MLSS during personal interviews. As mentioned previously in this report, this is not an isolated issue with Ulster County, but part of a broader, national economic crisis for EMS delivery. With solid funding and reimbursement, investments can be made in personnel wages, benefits, and capital infrastructure, leading to more reliable EMS delivery.

Table 3: Ambulance Agency Assessment - Survey Responses

	Top Challenges		
Agency	**1**	**2**	**3**
Ambulnz by DocGo	Reimbursement	Personnel	System Configurations
Diaz Memorial Ambulance	Staffing	Salaries & Benefits	Insurance reimbursement rates & Patient pay
Ellenville Rescue	Manpower	Equipment	
Gardiner Fire District	Responding to calls	Need volunteers	Limited ALS services
Kerhonkson-Accord First Aid Squad	EMTs	Volunteer coverage	
Kingston Fire Department	Timely transporting ambulance	Response of a mutual aid ambulance	
Marbletown First Aid Unit	Manpower	Revenue	Resources
Modena Fire and Rescue	Manpower	ALS Availability	Training
New Paltz Rescue Squad	Municipal monetary support	Staff retention	Recruitment of committed volunteers
Olive First Aid Unit	Staffing	Retention	Financial Support
Plattekill Fire Department	Recruiting and retaining volunteer EMT personnel	Recruiting and retaining volunteer EMT personnel	Recruiting and retaining volunteer EMT personnel
Shawangunk, Valley, Fire	Lack of manpower EMS/EMT's	Time	Calls that are not emergency (stubbed toe)
Town of Esopus Volunteer Ambulance Squad	Lack of volunteers, specifically EMS personnel	Increasing call volume, especially 911 calls for non emergent ER transports	Burnout of seasoned/active members/officers
Town Of Shandaken Ambulance Service	Staffing	Ability to pay affordable wages	Increased costs for equipment
Wallkill Volunteer Ambulance Corps Inc	Funding	Government Support	Member/Employee Retention
West Hurley Fire Dept	Insufficient number of active volunteer EMS personnel	Majority of department members are uninterested / complacent about providing EMS	EMS is not a budgetary or planning priority for department leadership
Woodstock Rescue	Recruitment and retention		

Desired Changes:

During in-person meetings, virtual town hall meetings, and an on-line survey of current EMS and ambulance service leaders in Ulster County, several common themes emerged when asked what the agencies would like to see changed about the current service delivery system in Ulster County:

- There should be a regional approach to ambulance service delivery in the County.
- The availability of ALS services should be enhanced.
- The county should take a more active role in providing funding and resources to providers to help solidify ambulance service delivery.
- The county should facilitate better communication and collaboration between ambulance providers in the county.

County Dispatch Operations

911 call taking, and EMS dispatch is handled through a single, county operated Public Safety Answering Point (PSAP). This is a best practice and a significant benefit to 911 callers and EMS response resource allocation. Many communities operate multiple PSAPs, which often require callers to be transferred from one PSAP to another, which, absent significantly enhanced services being offered at the second PSAP, is not ideal or patient centric.

For EMS dispatching, Ulster County's 911 Public Safety Answering Point (PSAP) employs the use of the Association of Public-Safety Communications Officials (APCO) emergency medical dispatch (EMD) call processing. APCO's EMD is a systematic program of handling medical calls for assistance. Trained telecommunicators use locally approved EMD guide cards to determine the nature and priority of the EMS call and provide the caller instructions to help treat the patient until the responding EMS unit arrives quickly and properly.

The current APCO EMD process used by Ulster County 911 dispatch determines whether an incident should receive a Basic Life Support (BLS) or an Advanced Life Support (ALS) response.

- A 'Stable' call category determines a BLS Ambulance.
- An 'Unstable' call category determines an ALS response configuration, either with an ALS ambulance, or a BLS ambulance with the addition of an ALS fly car.
- A 'Critical' call category determines an ALS response, plus medical first response, and a Police Medical Advisement.

This is an effective triage process that should be used to its fullest capability to assist EMS agencies not only determine what type of response configuration is appropriate based on the nature of the call, but also whether the type of incident should be responded to using a lights and siren (L&S) response mode, or a non L&S response mode. Improving public and provider safety through the reduction of L&S responses is discussed in greater detail later in this report.

Although some agencies, who have traditionally had low response performance, put a commercial ambulance provider on "Automatic Aid" during daytime hours, the county would benefit from a more coordinated process of resource assignment in locations where EMS responses are challenged with low response rates by local ambulance agencies, and ALS response capability is limited.

This process could also be invaluable for triaging multiple responses occurring simultaneously. For example, an ambulance is dispatched to an adult patient with an ankle injury from a ground level fall. While awaiting a response, or during a response, a second call is received in the same area for a baby not breathing. The dispatched resources, if they have not arrived on scene yet, could be reassigned to the time-sensitive baby not breathing call, while the non-time-life sensitive ankle injury could receive a longer response from a subsequent ambulance.

This type of prioritization, or triage process could be used to determine whether an ALS unit is necessary for the EMS response. Using the example above, a BLS crew would be sufficient for the ankle injury, but an ALS response, either as primary, or an ALS intercept, would be appropriate for the baby not breathing call. In counties like Ulster, where resources are limited, a dispatch triage process such as this could be very beneficial and save lives.

Historically, resource assignment decisions have been left up to the local agency. However, the personnel with the local agency may not be aware of the overall system response needs occurring at a specific moment in time. The County PSAP should have the authority to make resource allocation and dispatch decisions, since they are generally more aware of overall system needs than individual agency personnel may be.

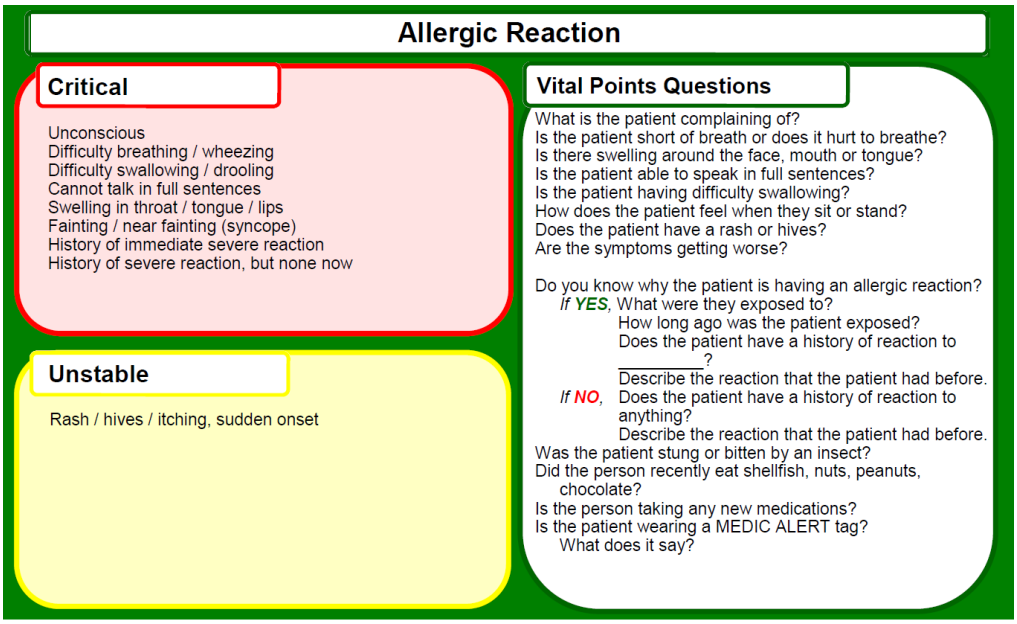
Interviews with County 911 PSAP personnel revealed increasing concern regarding the current ambulance service coverage throughout the county. They related increasing challenges with dispatching emergency ambulance units to 911 requests for EMS, often resulting in multiple dispatches for the primary ambulance agency, and then back-up mutual aid providers from neighboring jurisdictions.

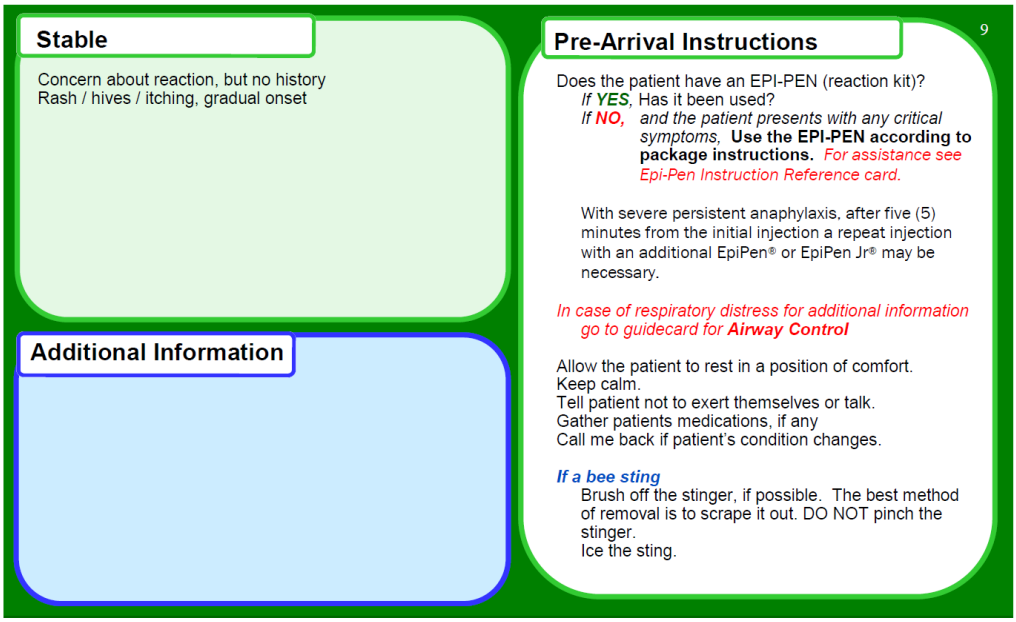
This is concerning for the PSAP center staff, it is very difficult when they are unable to tell a caller requesting EMS whether an ambulance has begun responding to their emergency call. This is one of the most stressful parts of 911 dispatching in Ulster County.

Recommendation: The County and local EMS agencies should review and revise dispatch processes to clearly delineate that the County PSAP is responsible for resource allocation to EMS responses.

Figure 1: APCO EMD Guide Card Example

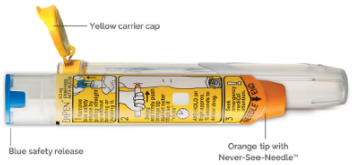
Examples of an APCO EMD Guide Card for an EMS request for an Allergic Reaction:



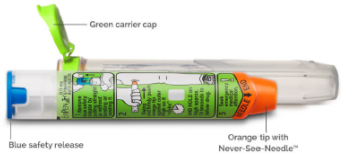


(EPI-PEN) Epinephrine Auto-Injector Instructions

EpiPen® Auto-Injector 0.3mg (yellow label) removed from carrier tube



EpiPen Jr® Auto-Injector 0.15mg (green label) removed from carrier tube

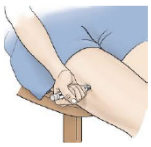


- Prepare the EpiPen or EpiPen Jr for injection by removing the EpiPen from the clear carrier tube by opening the yellow (Adult) or green (Pediatric) cap of your carrier tube.
- Tip and slide the auto-injector out of the carrier tube.
- Grasp the auto-injector in your fist with the orange tip (needle end) pointing downward.
- To avoid an accidental injection, never put your thumb, fingers or hand over the orange tip.
- With your other hand, remove the blue safety release by pulling straight up without bending or twisting it.
- If you are administering EpiPen or EpiPen Jr to a young child, hold the leg firmly in place with administering an injection.
- Place the orange tip against the middle of the outer thigh (upper leg) at a right angle (perpendicular) to the thigh.
- Swing and push the auto-injector firmly until it 'clicks'. The click signals that the injection has started.

Continued on next page

(EPI-PEN) Epinephrine Auto-Injector Instructions (Continued)

- Hold firmly in place for 3 seconds (count slowly 1, 2, 3). The injection is now complete.
- Remove the auto-injector from the thigh. The orange tip will extend to cover the needle. If the needle is still visible, do not attempt to reuse it.
- Massage the injection area for 10 seconds.
- The used auto-injector with extended needle cover will not fit in the carrier tube.



With severe persistent anaphylaxis, after five (5) minutes from the initial injection a repeat injection with an additional EpiPen® or EpiPen Jr® may be necessary.

Hospitals

84% of ambulance transport in Ulster County are brought to one of three acute care hospitals, and one critical access hospital.

- **Health Alliance Hospital** - HealthAlliance of the Hudson Valley, which is part of the Westchester Medical Center Health Network (WMCHealth). Health Alliance is a 315-hospital-bed health care system comprising HealthAlliance Hospital: Mary's Avenue Campus and HealthAlliance Hospital: Broadway Campus in Kingston, NY. During the study period, 51.1% of ambulance transports in Ulster County were brought to Health Alliance Hospital.

- **Vassar Brothers Medical Center** – a 350-bed hospital located across the Hudson Rover in Poughkeepsie. Vassar Brothers Medical Center is part of Nuvance Health, a network of seven community hospital locations and numerous outpatient facilities throughout the Hudson Valley and across western Connecticut. During the study period, 17.1% of ambulance transports in Ulster County were brought to Vassar Brothers Medical Center.

- **Ellenville Regional Hospital** – a 25 bed Critical Access Hospital (CAH) located in the southwestern part of Ulster County. Ellenville Regional Hospital provides essential emergency care, but as a CAH, does not have many comprehensive services such as cardiac, stroke or trauma services. Patients in need of comprehensive services for these conditions are generally transported to other tertiary hospitals in the region. During the study period, 8.3% of ambulance transports in Ulster County were brought to Ellenville Regional Hospital.

- **MidHudson Regional Hospital** - MidHudson Regional Hospital is a 243-bed hospital located in Poughkeepsie. Like Health Alliance, MidHudson Regional is part of the Westchester Medical Center Health Network (WMCHealth), and services include certification as a Level II Trauma Center, and cardiac services at the WMCHealth Heart and Vascular Institute on campus.

The hospitals appear to integrate well with the local ambulance services, with little to no issues related to general emergency department closures/diversions, or ambulance patient off-load delays.

Ambulance At Destination Times

Ambulance at destination times is an on-going challenge in many communities across the country. In areas where this is occurring, delays transferring patients from the care of an EMS crew to the hospital emergency department staff creates stress on the EMS system's ability to have sufficient units to respond to EMS calls in the community. A recent national survey by the Academy of International Mobile Healthcare Integration (AIMHI) found that 71% of EMS agencies responding to the survey have experienced increases in hospital 'drop' times, with nearly 20% indicating routine ambulance drop times of greater than 90 minutes[5].

Table 4 reveals that for the analysis period of **January 1, 2022, and December 31, 2022**, the average "at hospital" times for patient transports in Ulster County is 26.8 minutes, a relatively reasonable duration of time at a receiving hospital.

[5] National Presentation on Best Practices to Manage ED Offload Delays

In Tabe 4, the average unit deployed time per run is lower for commercial ambulance agencies because the unit is placed "available" when they arrive at the hospital, which results in underestimated average destination times. For this analysis, MLSS, the commercial ambulance provider with the largest number of runs, has ***not*** been included in this data.

Table 4: Ambulance At Hospital Time Duration

	Average Time Spent per Run (Minutes)	
Call Type	**At Hospital**	**Number of Runs**
Breathing difficulty	26.9	1,270
Cardiac and stroke	29.7	1,140
Fall and injury	25.7	1,604
Illness and other	24.9	2,170
Medical alarm	25.8	31
Medical transport	24.9	367
MVA	29.3	437
Overdose and psychiatric	27.0	428
Seizure and unconsciousness	27.2	1,057
Total	**26.8**	**8,504**

Some ambulance agencies in Ulster County use a platform called Twiage. This platform is an effective solution for enhancing pre-hospital and hospital communication and can be used to document transfer of care time between the EMS agency and the receiving hospital. Using Twiage to its fullest capability would assist EMS agencies and the county with information management, specifically for transfer of care time tracking at receiving hospitals.

Recommendation: The County and EMS agencies should review the capabilities of the currently used Twiage system to determine additional uses that will help enhance EMS delivery and system analysis in Ulster County. If agencies who are not using Twiage are in need of funding to enable the use of this capability, the County should explore options for that necessary funding.

Recommendation: Ulster County and ambulance agencies should establish a reporting process that accurately documents arrival and clearance from hospitals, as well as patient care transfer times. This data should be reported to the County, and should be shared with Health Alliance Hospital, Vassar Brothers Medical Center, MidHudson Regional Hospital and Ellenville Regional Hospital, executive leadership, as well as with all Ulster County ambulance agencies.

Hospital Collaboration

During discussions with Ulster County EMS agencies, County EMS staff, and hospital representatives, all indicate little to no actual coordination of care between the hospital and the EMS system. While some agency medical directors also work clinically at Ulster County hospitals, there is a general perception that collaboration between the EMS agencies and the hospitals would be an enhancement to EMS delivery in Ulster County.

An emerging best practice for EMS delivery is a close collaboration between EMS agencies and local hospitals. These collaborations include regularly scheduled meetings between hospital 'C-Suite' members (Chief Executive Officer (CEO), Chief Operating Officer (COO), Chief Medical Officer (CMO), and Chief Nursing Officer (CNO)). These regular get togethers serve to build relationships between the hospital and the EMS agency, as well as serve as a forum for identification and discussion of challenges the hospital or EMS agencies many be encountering and serve as a forum to discuss potential options for resolutions.

A further enhanced collaboration opportunity could also be the inclusion of EMS representatives on regularly scheduled meetings for hospital clinical service lines, such as cardiovascular, stroke and trauma services, for hospitals providing those services. The inclusion of EMS in these service line meetings augment protocols and procedures related to pre and potentially post-hospital care. Understanding the continuum of care, from pre-hospital care to inpatient care could improve clinical practices and enhance patient outcomes.

Recommendation: Ulster County and the county's ambulance agencies should establish robust continuing relationship with the executive management of all major receiving hospitals, including regular meetings with their Chief Executive Officer, Chief Medical Officer, Chief Operations Officer, and Chief Nursing Officer to enhance collaborative relationships and share information regarding hospital and EMS agency operations.

Recommendation: Ulster County and its ambulance agencies should work toward the inclusion of area ambulance agencies in clinical service line meetings to enhance clinical and operational integration for quality assurance purposes to enhance pre-hospital care collaboration.

DATA ANALYTICS

A key component of an EMS system evaluation is an objective review of response data. Often, gaps and challenges in EMS delivery can be identified and serve as a basis in determining recommendations for enhancements for service delivery. The comprehensive data analysis used for this final report is provided as a separate part of this report, called EMS Services Data Analysis Report, and we will be using specific sections from that report here.

In the data report, CPSM analyzed ***calls*** and ***runs***. A *call* is an emergency medical service request or, or an incident. A *run* is the dispatch of a unit (i.e., a unit responding to a call). Thus, one call may include multiple runs. For example, a motor vehicle crash (MVC) is a single incident, however, there may be multiple EMS units, including ambulances, that respond to that single incident.

We received CAD data from the Ulster County 9-1-1 Emergency Communications Center. EMS calls were then assigned detailed categories based on their call types and call nature descriptions provided in the CAD data. The method of call type categorization is shown in Attachment IV.

The raw CAD data included **31,411** fire and EMS calls between **January 1, 2022, and December 31, 2022**. In the analysis, we included all EMS calls that occurred within Ulster County and all calls (including EMS, fire, and mutual aid calls) for which an Ulster County EMS agency was dispatched. For these calls, we included all the EMS and the first response agencies given in Tables 1 and 2. We also included other out-of-county EMS agencies that provided mutual aid to Ulster County.

Based on the above method, we removed 7,801 calls entirely for various reasons. These removed calls included:

- 20 calls that were created accidentally.
- Seven information calls, three test calls, and two training calls.
- 6,904 fire calls that did not request EMS service.
- 708 calls to which an EMS or first responder unit was dispatched but never went enroute or arrived.
- There were 34 calls to which administrative units were the sole responders. The workload of these units is documented in Attachment II.
- Two calls responded by only Watchtower Farms (an Ulster County private service).

Throughout the analysis, the calls and workload are examined by both geography and agency. A result broken down by geography is presented in a way that firstly summarizes the result into grouped cities, hamlets, towns, and villages. Afterward, detailed results are reported for each municipality. Similarly, results are first summarized by agency type (ambulance and first response) and later reported for each individual agency. An agency that provides both ambulance and first response service is categorized as an ambulance service.

SUMMARY OF CALLS AND WORKLOAD

In this report, we separated the workload of the agencies in the Ulster County EMS system and the out-of-county agencies providing mutual aid to the county. The Ulster County EMS system includes both the local ambulance and first response agencies and the contracting non-Ulster County EMS agencies that have primary coverage within the county (Tables 1 and 2). The out-of-county EMS agencies providing mutual aid to the county include all Medivacs (helicopter service), AmbuInz, Empress Ambulance, Mobile Medic, and other out-of-county EMS services. Tables 5 and 6 summarize the number of calls involving each group of agencies and the corresponding workload.

The main analysis includes the **23,492** calls responded to by the Ulster County EMS system.

Table 5: Summary of Calls by Responding Agency and Grand Call Type

Responding Agency	Number of Calls	Percent of Calls
Ulster County agencies only	23,219	98.3
Both Ulster and Out-of-County agencies	273	1.2
Ulster County agencies subtotal	**23,492**	**99.5**
Out-of-County agencies only	**118**	**0.5**

Note: Ulster County agencies include both EMS agencies and first responders. Out of the 23,492 calls responded to by the Ulster County EMS system, 16,575 calls were responded to by Ulster County EMS agencies only, 152 calls were responded to by first responders only, and 6,765 calls were responded to by EMS agencies and first responders jointly.

Table 6: Summary of Workload by Responding Agency and Grand Call Type

Responding Agency	Runs	Work Hours
Ulster County agencies	42,642	30,420.9
Out-of-County agencies	418	385.0
Total	**43,060**	**30,805.9**

Note: The workload of Ulster County EMS system agencies includes EMS agencies and medical first responders.

Observations:

- Ulster County EMS and first response services responded to 23,492 or 99 percent of total calls. 99 percent of these calls included a responding ambulance.
  - Ulster County EMS agencies did not respond to 272 calls (one percent of total calls) that requested EMS service. Of these calls, 152 were responded to by the Ulster County first response services and 120 were responded to by out-of-county EMS agencies alone.
- Out-of-county EMS agencies provided mutual aid to 391 calls (two percent of total calls). All these calls included a responding ambulance or helicopter.

AGGREGATE CALL TOTALS AND RUNS

Between **January 1, 2022, and December 31, 2022**, the Ulster County EMS system responded to **23,492 calls**, including 22,954 EMS calls, 478 non-EMS calls, and 60 aid given calls.

CALLS BY TYPE

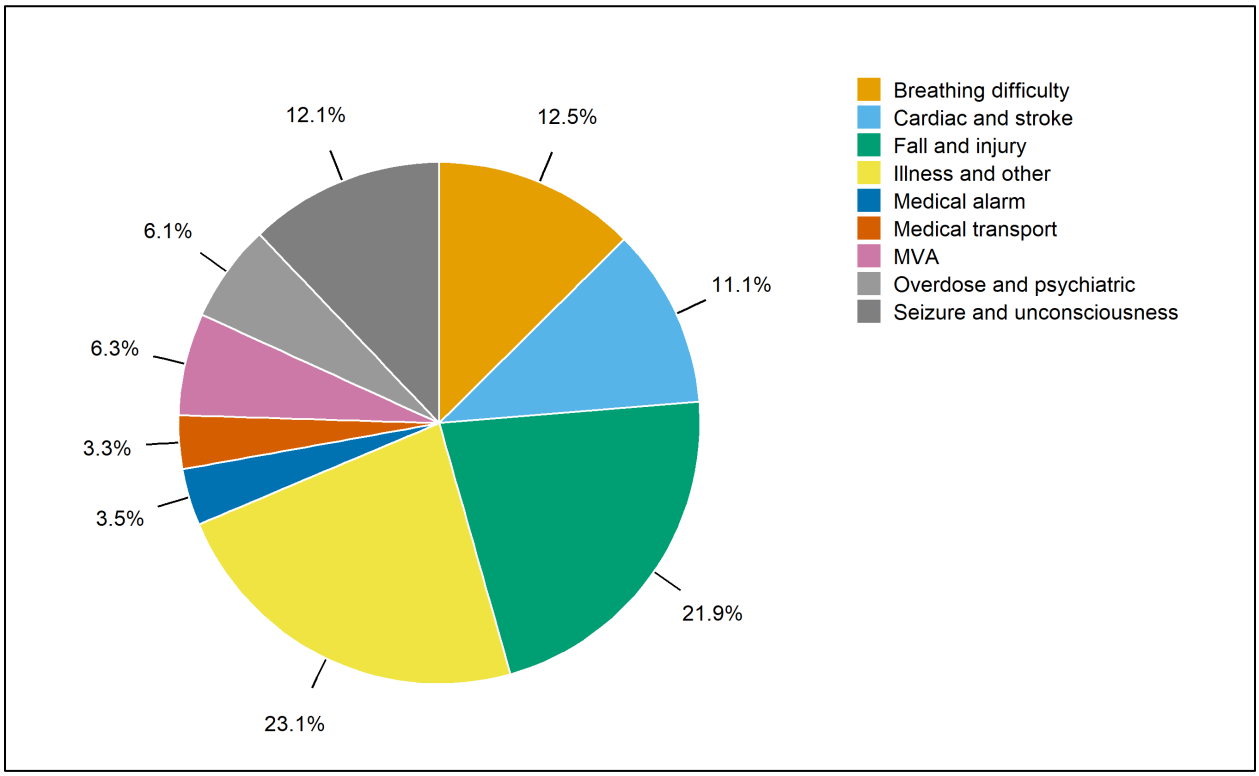
Table 7 and Figure 1 show the number of calls by call type, average calls per day, and the percentage of calls that fall into each call type category for the 12 months studied.

Table 7: Calls by Type

Call Type	Number of Calls	Calls per Day	Call Percentage
Breathing difficulty	2,880	7.9	12.3
Cardiac and stroke	2,555	7.0	10.9
Fall and injury	5,033	13.8	21.4
Illness and other	5,291	14.5	22.5
Medical alarm	808	2.2	3.4
Medical transport	760	2.1	3.2
MVA	1,455	4.0	6.2
Overdose and psychiatric	1,392	3.8	5.9
Seizure and unconsciousness	2,780	7.6	11.8
EMS Subtotal	**22,954**	**62.9**	**97.7**
Non-EMS	478	1.3	2.0
Mutual Aid Provided	60	0.2	0.3
Total	**23,492**	**64.4**	**100.0**

Note: Calls outside Ulster County EMS service area were labeled as Mutual Aid Provided.

Figure 2: EMS Calls by Type



Observations:

- The Ulster County EMS system responded to **23,492** calls, an average of 64.4 calls per day.
- Illness and other calls were the largest category representing 23 percent of EMS calls, an average of 14.5 calls per day.
- Motor vehicle accident (MVA) calls made up six percent of EMS calls and an average of 4.0 calls per day.
- Cardiac and stroke calls made up 11 percent of EMS calls and an average of 7.0 calls per day.
- Medical alarm calls made up four percent of EMS calls and an average of 2.2 calls per day.

CALLS BY TYPE AND DURATION

Table 8 shows the duration of calls by type using four duration categories: less than 30 minutes, 30 minutes to one hour, one to two hours, and more than two hours.

It is important to note that for the commercial ambulance agencies that are not dispatched by the county, the county's 911 system records these units as "in-service/available" when the ambulance arrives at the destination hospital. This means that the time that the unit is at the hospital before returning to service is not accurately captured through this data analysis. Therefore, the duration of calls involving commercial ambulances is underestimated.

Table 8: Calls by Type and Duration

Call Type	Less than 30 Minutes	30 Minutes to One Hour	One to Two Hours	More Than Two Hours	Total
Breathing difficulty	708	1,125	904	143	2,880
Cardiac and stroke	614	944	842	155	2,555
Fall and injury	2,103	1,512	1,239	179	5,033
Illness and other	1,664	1,918	1,481	228	5,291
Medical alarm	675	92	35	6	808
Medical transport	194	290	244	32	760
MVA	582	452	324	97	1,455
Overdose and psychiatric	618	423	306	45	1,392
Seizure and unconsciousness	830	1,041	802	107	2,780
EMS Subtotal	**7,988**	**7,797**	**6,177**	**992**	**22,954**
Non-EMS	222	108	67	81	478
Aid given	12	11	29	8	60
Total	**8,222**	**7,916**	**6,273**	**1,081**	**23,492**

Observations:

- On average, 19.6 EMS calls per day lasted more than one hour.
- A total of 15,785 EMS calls (69 percent) lasted less than one hour, 6,177 calls (27 percent) lasted between one and two hours, and 992 calls (four percent) lasted two or more hours.
- A total of 1,558 cardiac and stroke calls (61 percent) lasted less than one hour, 842 cardiac and stroke calls (33 percent) lasted one to two hours, and 155 cardiac and stroke calls (six percent) lasted two or more hours.
- A total of 1,034 motor vehicle accident (MVA) calls (71 percent) lasted less than one hour, 324 MVA calls (22 percent) lasted one to two hours, and 97 accident personal injury calls (seven percent) lasted two or more hours.

CALLS BY TYPE AND GEOGRAPHY

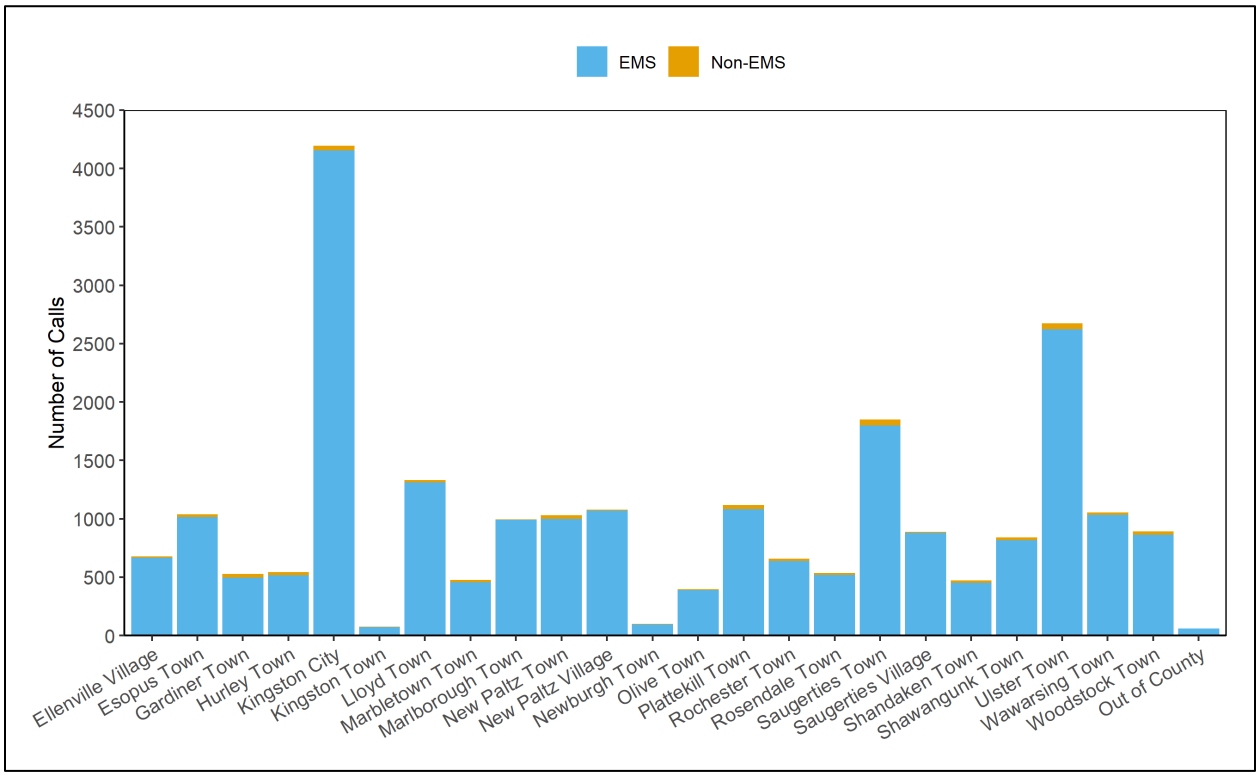
Table 9 and Figure 2 display the geographical distribution of the number of calls to which the Ulster County EMS system responded, by grand call type. For 60 aid given calls that occurred outside the county, their call types are also specified in the table, and for this reason, there are more EMS and non-EMS type calls in Table 9 than in Table 5.

Table 9: Calls by Type and Location

Location	EMS	Non-EMS	Total	Pct. Calls
Ellenville Village	666	11	677	2.9
Esopus Town	1,014	24	1,038	4.4
Gardiner Town	497	29	526	2.2
Hurley Town	517	27	544	2.3
Kingston City	4,155	38	4,193	17.8
Kingston Town	72	2	74	0.3
Lloyd Town	1,312	18	1,330	5.7
Marbletown Town	458	19	477	2.0
Marlborough Town	990	6	996	4.2
New Paltz Town	999	30	1,029	4.4
New Paltz Village	1,068	8	1,076	4.6
Newburgh Town*	94	4	98	0.4
Olive Town	388	7	395	1.7
Plattekill Town	1,081	36	1,117	4.8
Rochester Town	638	22	660	2.8
Rosendale Town	519	16	535	2.3
Saugerties Town	1,798	54	1,852	7.9
Saugerties Village	879	9	888	3.8
Shandaken Town	451	19	470	2.0
Shawangunk Town	818	21	839	3.6
Ulster Town	2,624	48	2,672	11.4
Wawarsing Town	1,033	20	1,053	4.5
Woodstock Town	864	29	893	3.8
Ulster County Subtotal	**22,935**	**497**	**23,432**	**99.8**
Dutchess County**	8	0	8	0.0
Greene County**	4	0	4	0.0
Orange County**	24	7	31	0.1
Sullivan County**	12	5	17	0.1
Out-of-County Subtotal	**48**	**12**	**60**	**0.2**
Total	**22,983**	**509**	**23,492**	**100.0**

Note: *Newburgh is in Orange County, however, part of it is a protection district covered by Plattekill Fire District.
**Mutual aid response.

Figure 3: Call Volume by Location



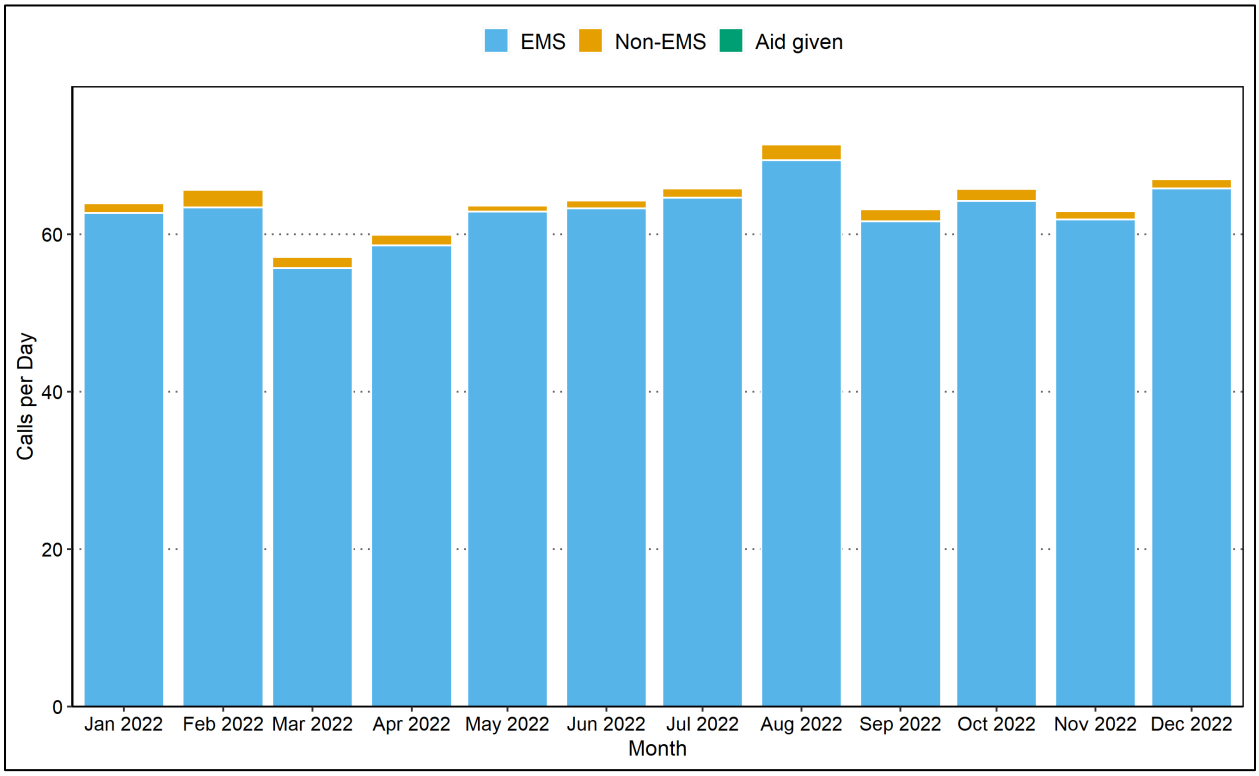
Observations:

- The City of Kingston, the Town of Ulster, and the Town of Saugerties are the municipalities with the three highest call volumes.
- The City of Kingston had 4,193 calls, or 18 percent of the total calls.
- The Town of Ulster had 2,672 calls, or 11 percent of the total calls.
- The Town of Saugerties had 1,852 calls, or eight percent of the total calls.

AVERAGE CALLS BY MONTH AND HOUR

Figure 3 shows the monthly variation in the average daily number of calls handled by all studied agencies during the year. Similarly, Figure 4 illustrates the average number of calls responded to each hour of the day for the year.

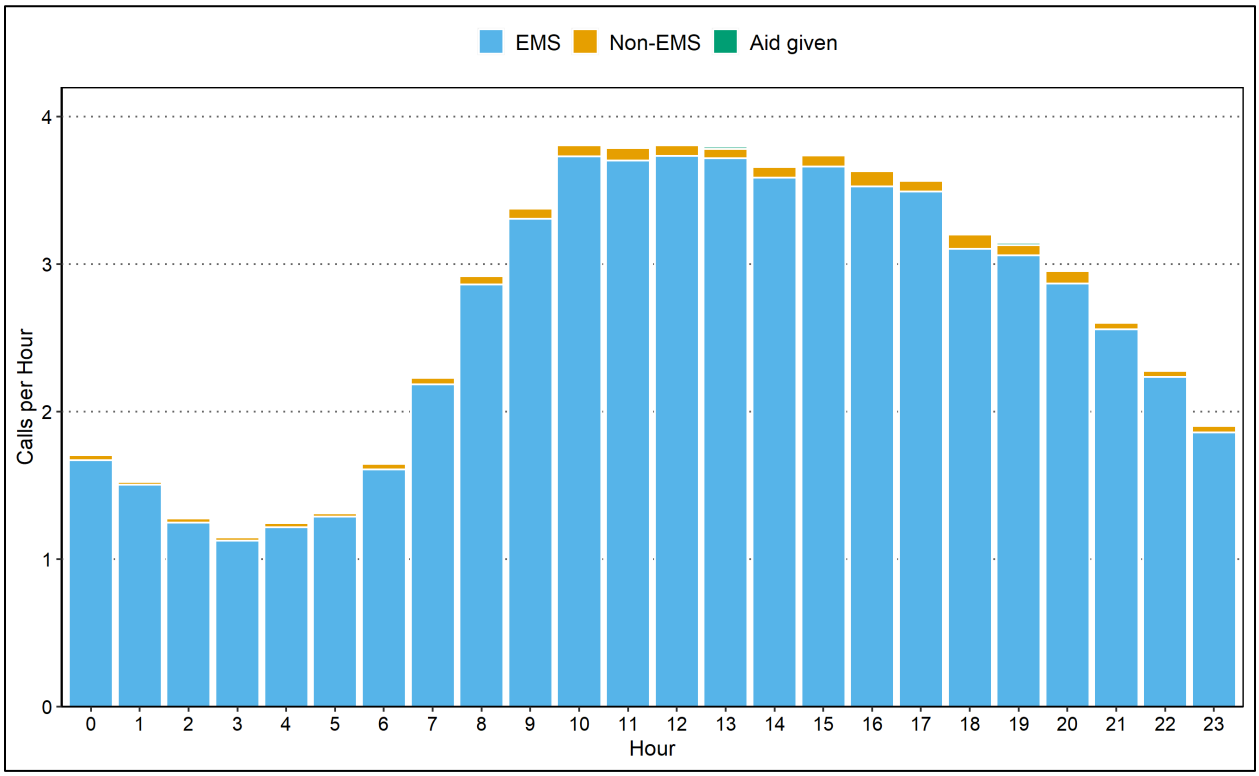
Figure 4: Average Calls per Day by Month



Observations:

- Average calls per day overall ranged from a low of 57.2 in March 2022 to a high of 71.6 in August 2022.

Figure 5: Calls by Hour of Day



Observations:

- Average calls per hour overall ranged from 1.1 between 3:00 a.m. and 4:00 a.m. to 3.8 between noon and 1:00 p.m.

UNITS ARRIVED AT CALLS

Table 10, along with Figure 5, details the number of calls with one, two, and three or more units (non-administrative units of EMS and first response agencies) arriving at a call, broken down by call type. Here we limit ourselves to calls where a unit arrives (22,732 out of 23,492 calls had arriving units). For this reason, there are fewer calls in Table 8 than in Table 5. **Table 11 shows the 760 calls that did not have an arriving unit, broken down by geography.**

Table 10: Calls by Call Type and Number of Arriving Units

Call Type	Number of Units			Arriving Calls
	One	Two	Three or more	
Breathing difficulty	1,158	1,488	192	2,838
Cardiac and stroke	929	1,390	193	2,512
Fall and injury	2,506	2,188	174	4,868
Illness and other	2,508	2,525	149	5,182
Medical alarm	523	183	2	708
Medical transport	351	358	24	733
MVA	483	554	341	1,378
Overdose and psychiatric	796	507	44	1,347
Seizure and unconsciousness	1,032	1,459	231	2,722
EMS Subtotal	**10,286**	**10,652**	**1,350**	**22,288**
Non-EMS	**208**	**103**	**86**	**397**
Mutual Aid Provided	40	6	1	47
Total	**10,534**	**10,761**	**1,437**	**22,732**
Percentage	**46.3**	**47.3**	**6.3**	**100.0**

Figure 6: Calls by Number of Arriving Units

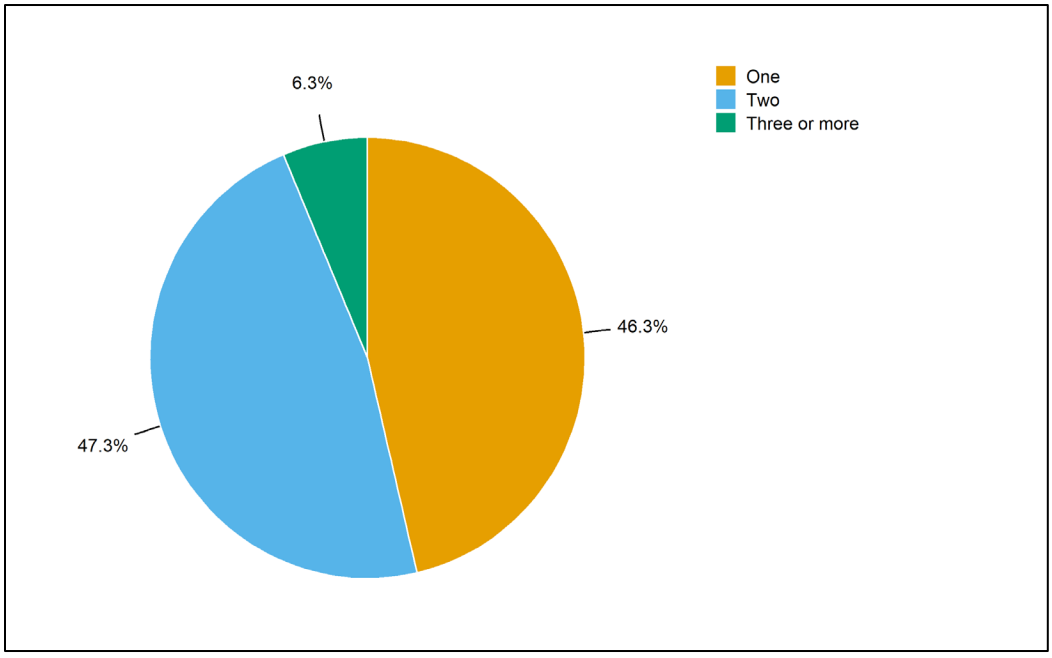


Table 11: Calls without Arriving Units by Grand Call Type and Location

Location	EMS	Non-EMS	Total	Percent of Calls
Ellenville Village	14	0	14	1.8
Esopus Town	36	2	38	5.0
Gardiner Town	15	8	23	3.0
Hurley Town	23	12	35	4.6
Kingston City	31	1	32	4.2
Kingston Town	2	0	2	0.3
Lloyd Town	54	3	57	7.5
Marbletown Town	11	5	16	2.1
Marlborough Town	51	0	51	6.7
New Paltz Town	24	3	27	3.6
New Paltz Village	22	1	23	3.0
Newburgh Town*	22	1	23	3.0
Olive Town	8	1	9	1.2
Plattekill Town	38	15	53	7.0
Rochester Town	16	1	17	2.2
Rosendale Town	18	3	21	2.8
Saugerties Town	46	7	53	7.0
Saugerties Village	24	0	24	3.2
Shandaken Town	16	2	18	2.4
Shawangunk Town	52	3	55	7.2
Ulster Town	89	5	94	12.4
Wawarsing Town	26	4	30	3.9
Woodstock Town	28	4	32	4.2
Inside Ulster County Subtotal	**666**	**81**	**747**	**98.3**
Dutchess County**	5	0	5	0.7
Orange County**	1	3	4	0.5
Sullivan County**	3	1	4	0.5
Outside Ulster County Subtotal	**9**	**4**	**13**	**1.7**
Total	**675**	**85**	**760**	**100.0**

Note: *Newburgh is in Orange County, however, part of it is a protection district covered by Plattekill Fire District. **Mutual Aid response.

Observations:

- On average, when focusing on calls with at least one arriving unit, 1.6 units arrived per call.
- One unit arrived 46 percent of the time, two units arrived 47 percent of the time, and three units arrived six percent of the time.
- **760 calls (three percent of total calls) had units responded to but did not arrive.**

WORKLOAD: RUNS AND TOTAL TIME SPENT

The workload of each unit is measured in two ways: runs and deployed time. The deployed time of a run is measured from the time a unit is dispatched through the time the unit is cleared. Because multiple units respond to some calls, there are more runs than calls, and the average deployed time per run varies from the total duration of calls. This analysis is conducted based on all responding (either enroute or arriving) units of Ulster County ambulance and first response agencies.

RUNS AND DEPLOYED TIME – ALL UNITS

Deployed time, also referred to as deployed hours, is the total deployment time of all units deployed on all runs. Table 12 shows the total deployed time, both overall and broken down by type of run, for all units of the studied agencies during the year.

Table 12: Annual Runs and Deployed Time by Run Type

Agency	Run Type	Annual Runs	Runs per Day	Minutes per Run	Annual Hours	Minutes per Day	% Hours
Local Ulster Agency	Breathing difficulty	3,452	9.5	48.4	2,782.8	457.4	9.1
	Cardiac and stroke	3,331	9.1	50.5	2,806.0	461.3	9.2
	Fall and injury	5,883	16.1	41.9	4,108.4	675.3	13.5
	Illness and other	6,116	16.8	46.2	4,705.1	773.4	15.5
	Medical alarm	792	2.2	19.1	252.2	41.5	0.8
	Medical transport	872	2.4	51.2	743.7	122.2	2.4
	MVA	2,774	7.6	43.2	1,995.8	328.1	6.6
	Overdose and psychiatric	1,240	3.4	45.4	938.2	154.2	3.1
	Seizure and unconsciousness	3,538	9.7	45.7	2,692.5	442.6	8.9
	Non-EMS	1,151	3.2	90.7	1,739.4	285.9	5.7
	Mutual Aid Provided	74	0.2	76.8	94.7	15.6	0.3
	Subtotal	**29,223**	**80.1**	**46.9**	**22,858.7**	**3,757.6**	**75.1**
Mobile Life Support Services	Breathing difficulty	1,851	5.1	35.5	1,096.6	180.3	3.6
	Cardiac and stroke	1,565	4.3	38.7	1,008.3	165.8	3.3
	Fall and injury	2,617	7.2	31.5	1,374.5	225.9	4.5
	Illness and other	2,849	7.8	34.3	1,627.5	267.5	5.3
	Medical alarm	368	1.0	16.6	101.8	16.7	0.3
	Medical transport	383	1.0	37.0	236.2	38.8	0.8
	MVA	916	2.5	31.1	474.8	78.0	1.6
	Overdose and psychiatric	958	2.6	29.2	466.4	76.7	1.5
	Seizure and unconsciousness	1,784	4.9	36.6	1,087.2	178.7	3.6
	Non-EMS	128	0.4	41.6	88.8	14.6	0.3
	Subtotal	**13,419**	**36.8**	**33.8**	**7,562.2**	**1,243.1**	**24.9**
Total		**42,642**	**116.8**	**42.8**	**30,420.9**	**5,000.7**	**100.0**

Note: The county 911 system does not capture the time spent at the hospital for commercial ambulances. Therefore, the deployed hours of these agencies are understated.

Observations:

- There were 42,642 runs for the year. The daily average was 116.8 runs.
- The average deployed time was 42.8 minutes per run.
- The total deployed time for the year was 30,420.9 hours.
- The daily average deployed time was 83.3 hours for all units combined or 3.5 hours of work per hour.
- Non-EMS calls were two percent of calls (Table 5), three percent of runs, and six percent of work.
- The local Ulster agencies and Mobile Life Support Services made up 25 and 75 percent of the annual workload, respectively.

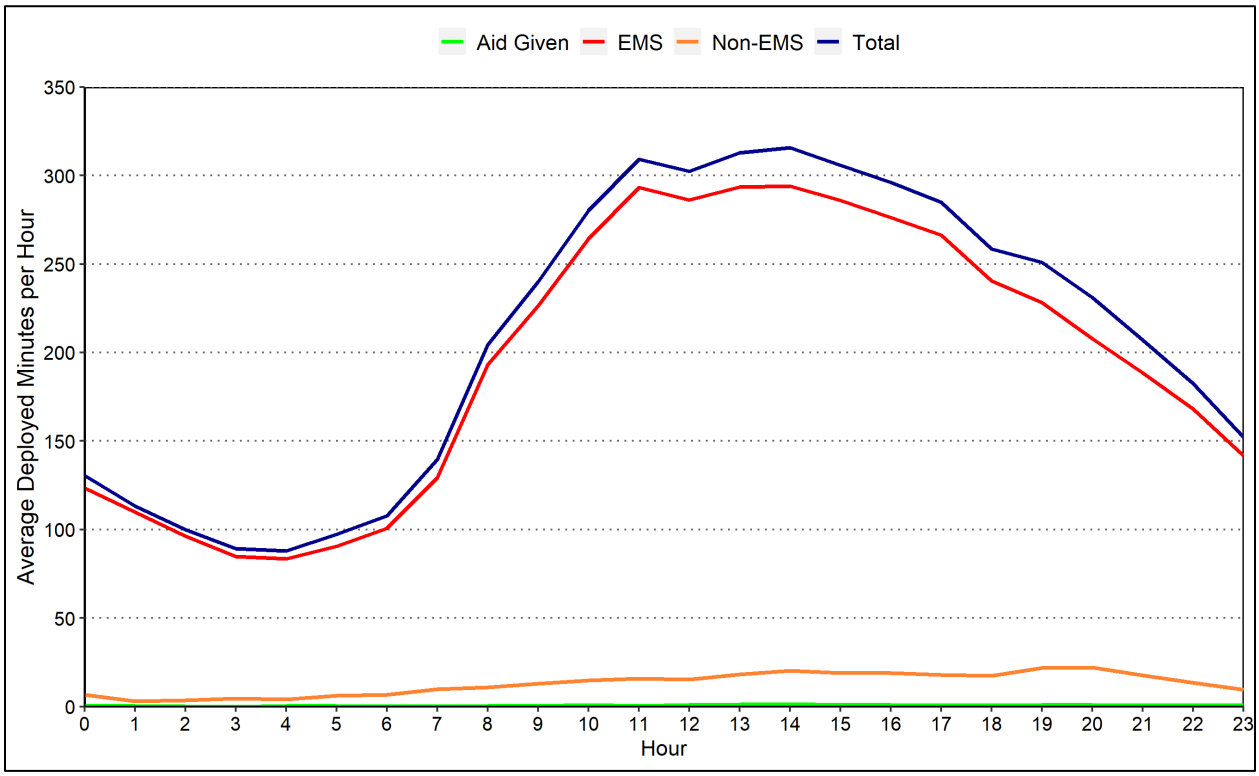
Table 13 and Figure 8 present the average deployed minutes by an hour the of day.

Table 13: Average Deployed Minutes by Hour of Day

Hour	EMS	Non-EMS	Mutual Aid Provided	Total
0	123.5	6.7	0.4	130.6
1	109.8	3.1	0.4	113.3
2	96.3	3.6	0.1	100.0
3	84.7	4.6	0.0	89.3
4	83.6	4.0	0.4	88.0
5	90.6	6.3	0.4	97.3
6	100.7	6.8	0.2	107.7
7	129.6	9.9	0.2	139.7
8	193.3	10.9	0.4	204.5
9	226.5	13.0	0.4	239.9
10	264.2	14.9	1.1	280.1
11	293.1	15.8	0.4	309.3
12	286.2	15.3	0.9	302.4
13	293.6	18.1	1.1	312.8
14	294.0	20.3	1.4	315.7
15	285.9	18.9	1.0	305.8
16	276.3	18.9	0.9	296.1
17	266.4	17.9	0.6	284.9
18	240.5	17.4	0.8	258.6
19	228.2	21.9	1.0	251.0
20	207.9	22.1	1.1	231.0
21	188.6	17.7	0.7	207.0
22	168.2	13.6	0.7	182.4
23	141.8	9.6	0.7	152.2
Total	**4,674.0**	**311.2**	**15.6**	**5,000.7**

Note: The county 911 system does not capture the time spent at the hospital for commercial ambulances. Therefore, the deployed hours of these agencies are understated.

Figure 7: Average Deployed Minutes by Hour of Day



Observations:

- Hourly deployed time was highest during the day from 10:00 a.m. to 6:00 p.m., averaging between 4.7 hours and 5.3 hours.
- The average deployed time peaked between 2:00 p.m. and 3:00 p.m., averaging 5.3 hours.
- The average deployed time was lowest between 4:00 a.m. and 5:00 a.m., averaging 1.5 hours.

WORKLOAD BY AGENCY

Table 14 summarizes the total workload of EMS agencies and first responders. Tables 15 and 16 show the same information for each ambulance agency and first responder. Tables 17 through 21 provide a more detailed view of workload, showing each agency's runs (Tables 18 and 19) and the resulting daily average deployed time by run type (Tables 20 and 21). Figures 7 and 8 compare the total runs made by the studied ambulance agencies and first responders, respectively.

For these tables, it is important to note that this data is for runs in which a unit responded to the call. If an agency did not respond to the call, that incident is not included in this analysis.

Table 14: Summary of the Total Annual Workload by Agency Type

Agency Type	Annual Runs	Runs per Day	Minutes per Run	Annual Hours	Minutes per Day	Percent of Hours
EMS Agency	33,666	92.2	46.5	26,065.5	4,284.7	85.7
First Responder	8,976	24.6	29.1	4,355.4	716.0	14.3
Total	**42,642**	**116.8**	**42.8**	**30,420.9**	**5,000.7**	**100.0**

Table 15: Annual Workload by Ambulance Agencies

EMS Agency	Annual Runs	Runs per Day	Minutes per Run	Annual Hours	Minutes per Day
Diaz Ambulance	2,852	7.8	47.0	2,233.7	367.2
Ellenville Ambulance	3,191	8.7	43.8	2,327.8	382.6
Esopus Ambulance	1,170	3.2	45.1	879.7	144.6
Gardiner FD - EMS	315	0.9	67.1	352.3	57.9
Hurley FD - EMS	185	0.5	55.2	170.2	28.0
Kerhonkson - Accord First Aid Squad	805	2.2	68.5	918.4	151.0
Marbletown First Aid Unit	638	1.7	74.6	792.8	130.3
Modena FD - EMS	376	1.0	66.9	419.2	68.9
New Paltz Rescue Squad	5,900	16.2	58.4	5,745.2	944.4
Olive First Aid Unit	461	1.3	62.2	478.0	78.6
Pine Bush Ambulance*	112	0.3	68.1	127.0	20.9
Plattekill FD - EMS	530	1.5	59.5	525.8	86.4
Shandaken Ambulance	987	2.7	60.9	1,002.2	164.8
Shawangunk Valley FD - EMS	122	0.3	86.0	175.0	28.8
Wallkill Ambulance	459	1.3	66.0	505.2	83.0
West Hurley FD - EMS	238	0.7	63.4	251.3	41.3
Woodstock FD - EMS	1,906	5.2	50.3	1,599.4	262.9
Local Ulster Agency Subtotal	**20,247**	**55.5**	**54.8**	**18,503.3**	**3,041.6**
Mobile Life Support Services**	**13,419**	**36.8**	**33.8**	**7,562.2**	**1,243.1**
Total	**33,666**	**92.2**	**46.5**	**26,065.5**	**4,284.7**

Note: *Contracting out-of-county ambulance provider that has primary coverage in Ulster areas; **Contracting commercial service that has primary coverage in Ulster areas.

Observations:

- Mobile Life Support Services made the most runs (13,419 or an average of 36.8 runs per day) and had the highest total annual deployed time (7,562.2 hours or an average of 20.7 hours per day).
- New Paltz Rescue Squad made the second-most runs (5,900 or an average of 16.2 runs per day) and had the second-highest total annual deployed time (5,745.2 hours or an average of 15.7 hours per day).
- Ellenville Ambulance made the third-most runs (3,191 or an average of 8.7 runs per day) and had the third-highest total annual deployed time (2,327.8 or an average of 6.4 hours per day).

Table 16: Annual Workload by First Responders

First Responder	Annual Runs	Runs per Day	Minutes per Run	Annual Hours	Minutes per Day
Bloomington FD	228	0.6	36.9	140.0	23.0
Centerville-Cedar Grove FD	392	1.1	43.5	284.5	46.8
Clintondale FD	94	0.3	80.2	125.6	20.7
Cottekill FD	49	0.1	39.4	32.2	5.3
Cragsmoor FD	55	0.2	140.6	128.9	21.2
East Kingston FD	247	0.7	31.3	128.9	21.2
Esopus FD	200	0.5	55.8	186.1	30.6
Glasco FD	217	0.6	33.9	122.8	20.2
Kingston FD	4,266	11.7	19.3	1,372.0	225.5
Kripplebush FD	70	0.2	69.5	81.1	13.3
Lomontville FD	17	0.0	57.5	16.3	2.7
Mt Marion FD	143	0.4	47.5	113.3	18.6
Rifton FD	87	0.2	75.4	109.3	18.0
Rosendale FD	67	0.2	36.6	40.8	6.7
Ruby FD	150	0.4	38.1	95.2	15.7
Saugerties Village FD	75	0.2	49.8	62.2	10.2
Sawkill FD	88	0.2	52.3	76.7	12.6
Spring Lake FD	175	0.5	26.8	78.0	12.8
Stone Ridge FD	154	0.4	52.6	134.9	22.2
Tillson FD	94	0.3	37.6	58.9	9.7
Ulster Hose CO #5 FD	1,866	5.1	23.1	718.9	118.2
Walker Valley FD	242	0.7	61.7	248.8	40.9
Total	**8,976**	**24.6**	**29.1**	**4,355.4**	**716.0**

Note: FD=Fire Department.

Table 17: Summary of the Annual Runs by Agency Type and Run Type

Agency Type	Breathing Difficulty	Cardiac and Stroke	Fall and Injury	Illness and Other	Med. Alarm	Med. Trans	MVA	OD	Seizure and UNC	Non-EMS	Aid Given	Total
EMS Agency	4,185	3,952	7,096	7,364	985	1,030	2,283	1,912	4,175	610	74	33,666
First Responder	1,118	944	1,404	1,601	175	225	1,407	286	1,147	669	0	8,976
Total	**5,303**	**4,896**	**8,500**	**8,965**	**1,160**	**1,255**	**3,690**	**2,198**	**5,322**	**1,279**	**74**	**42,642**

Note: OD=Overdose and Psychiatric; UNC=Unconsciousness. For aid given calls, only Ulster County EMS agencies were included.

Table 18: Annual Runs by EMS Agency and Run Type

EMS Agency	Breathing Difficulty	Cardiac and Stroke	Fall and Injury	Illness and Other	Med. Alarm	Med. Trans	MVA	OD	Seizure and UNC	Non-EMS	Aid Given	Total
Diaz Ambulance	340	300	610	699	177	90	172	91	311	59	3	2,852
Ellenville Ambulance	442	403	631	722	93	100	178	148	400	54	20	3,191
Esopus Ambulance	132	110	232	272	35	42	101	68	144	34	0	1,170
Gardiner FD - EMS	26	30	100	55	7	6	29	9	34	19	0	315
Hurley FD - EMS	13	19	50	38	6	19	9	3	20	8	0	185
Kerhonkson - Accord First Aid Squad	106	89	164	175	15	24	81	32	100	19	0	805
Marbletown First Aid Unit	73	75	133	110	24	14	66	15	96	32	0	638
Modena FD – EMS	40	66	81	68	8	8	27	17	33	23	5	376
New Paltz Rescue Squad	551	737	1,411	1,320	81	221	342	392	741	88	16	5,900
Olive First Aid Unit	63	58	123	84	25	8	33	11	49	7	0	461
Pine Bush Ambulance*	11	9	24	20	2	3	15	8	17	3	0	112
Plattekill FD - EMS	90	75	88	112	6	3	41	33	56	13	13	530
Shandaken Ambulance	102	110	253	216	20	30	72	33	108	38	5	987
Shawangunk Valley FD - EMS	17	16	24	16	3	4	15	8	15	2	2	122
Wallkill Ambulance	68	44	97	93	15	2	49	22	48	11	10	459
West Hurley FD - EMS	31	26	46	40	12	2	31	4	27	19	0	238
Woodstock FD - EMS	229	220	412	475	88	71	106	60	192	53	0	1,906
Local Ulster Agency Subtotal	**2,334**	**2,387**	**4,479**	**4,515**	**617**	**647**	**1,367**	**954**	**2,391**	**482**	**74**	**20,247**
Mobile Life Support Services**	**1,851**	**1,565**	**2,617**	**2,849**	**368**	**383**	**916**	**958**	**1,784**	**128**	**0**	**13,419**
Total	**4,185**	**3,952**	**7,096**	**7,364**	**985**	**1,030**	**2,283**	**1,912**	**4,175**	**610**	**74**	**33,666**

Note: *Contracting out-of-county EMS provider that has primary coverage Ulster areas; **Contracting commercial service that has primary coverage over the county; OD=Overdose and Psychiatric; UNC=Unconsciousness.

Table 19: Annual Runs by First Responder Agency and Run Type

First Responder	Breathing Difficulty	Cardiac and Stroke	Fall and Injury	Illness and Other	Med. Alarm	Med. Trans	MVA	OD	Seizure and UNC	Non-EMS	Total
Bloomington FD	40	24	26	23	1	2	73	4	17	18	228
Centerville-Cedar Grove FD	6	21	24	30	3	3	124	5	26	150	392
Clintondale FD	10	3	5	6	0	0	51	0	6	13	94
Cottekill FD	9	8	3	4	1	0	8	1	9	6	49
Cragsmoor FD	2	0	5	11	1	0	9	1	5	21	55
East Kingston FD	24	34	78	38	4	7	23	5	28	6	247
Esopus FD	16	13	35	42	3	6	44	3	20	18	200
Glasco FD	5	14	11	9	7	1	70	2	9	89	217
Kingston FD	488	377	884	1,035	113	177	369	192	534	97	4,266
Kripplebush FD	8	9	14	7	1	3	10	1	9	8	70
Lomontville FD	1	2	5	4	0	0	4	0	1	0	17
Mt Marion FD	29	20	9	11	0	2	36	0	12	24	143
Rifton FD	5	5	16	15	2	0	26	2	10	6	87
Rosendale FD	10	10	5	9	0	0	14	1	8	10	67
Ruby FD	38	12	14	11	0	0	36	3	15	21	150
Saugerties Village FD	1	6	5	7	1	0	24	1	10	20	75
Sawkill FD	7	13	12	19	3	0	18	2	6	8	88
Spring Lake FD	18	21	31	40	15	4	19	3	15	9	175
Stone Ridge FD	11	17	16	21	0	2	46	0	16	25	154
Tillson FD	10	26	5	9	0	1	16	2	17	8	94
Ulster Hose CO #5 FD	343	285	184	223	20	13	345	48	341	64	1,866
Walker Valley FD	37	24	17	27	0	4	42	10	33	48	242
Total	**1,118**	**944**	**1,404**	**1,601**	**175**	**225**	**1,407**	**286**	**1,147**	**669**	**8,976**

Note: FD=Fire Department; OD=Overdose and Psychiatric; UNC=Unconsciousness.

Table 20: Summary of Daily Average Deployed Minutes by Agency Type and Run Type

Agency Type	Breathing Difficulty	Cardiac and Stroke	Fall and Injury	Illness and Other	Med. Alarm	Med. Trans	MVA	OD	Seizure and UNC	Non-EMS	Aid Given	Total
EMS Agency	570.8	565.3	819.9	944.1	51.5	147.1	258.6	215.8	546.8	149.1	15.6	4,284.7
First Responder	66.9	61.7	81.4	96.9	6.7	13.9	147.5	15.1	74.5	151.4	0.0	716.0
Total	**637.7**	**627.0**	**890.6**	**1,041.0**	**58.2**	**161.0**	**406.1**	**230.9**	**621.3**	**311.2**	**15.6**	**5,000.7**

Note: OD=Overdose and Psychiatric; UNC=Unconsciousness. For aid given calls, only Ulster County EMS agencies were included.

Table 21: Daily Average Deployed Minutes by EMS Agency and Run Type

EMS Agency	Breathing Difficulty	Cardiac and Stroke	Fall and Injury	Illness and Other	Med. Alarm	Med. Trans	MVA	OD	Seizure and UNC	Non-EMS	Aid Given	Total
Diaz Ambulance	52.9	44.1	69.2	95.5	8.5	13.6	19.9	12.6	44.9	5.5	0.4	367.2
Ellenville Ambulance	57.9	57.7	65.0	82.8	5.0	12.9	18.8	17.2	50.5	10.7	4.0	382.6
Esopus Ambulance	16.3	14.3	24.4	34.2	1.6	6.2	13.4	7.5	18.2	8.5	0.0	144.6
Gardiner FD - EMS	5.2	6.3	18.0	10.7	0.3	1.8	4.8	1.7	7.2	1.9	0.0	57.9
Hurley FD - EMS	2.2	3.2	6.8	6.2	0.5	3.1	1.2	0.4	3.2	1.3	0.0	28.0
Kerhonkson - Accord First Aid Squad	20.8	19.1	30.7	32.1	0.8	5.1	14.4	5.8	17.9	4.1	0.0	151.0
Marbletown First Aid Unit	15.9	17.0	27.5	23.9	1.6	3.0	9.3	2.7	20.4	9.2	0.0	130.3
Modena FD – EMS	8.6	14.3	13.2	13.0	0.7	2.1	4.6	3.3	5.9	1.8	1.5	68.9
New Paltz Rescue Squad	97.3	128.0	181.8	205.9	3.4	41.2	40.4	58.3	113.4	70.6	4.2	944.4
Olive First Aid Unit	14.2	10.0	19.8	13.7	1.5	1.6	5.1	1.7	9.8	1.2	0.0	78.6
Pine Bush Ambulance*	2.1	2.6	4.9	4.0	0.4	0.5	2.2	1.6	2.0	0.6	0.0	20.9
Plattekill FD - EMS	16.3	12.0	14.4	19.6	0.4	0.6	5.6	5.4	8.9	1.2	2.1	86.4
Shandaken Ambulance	20.9	20.1	39.3	37.5	1.4	4.7	12.1	5.3	17.4	5.0	1.2	164.8
Shawangunk Valley FD - EMS	5.5	3.4	4.0	3.6	0.6	1.2	3.8	1.7	4.2	0.5	0.3	28.8
Wallkill Ambulance	12.9	8.3	17.3	16.0	0.9	0.6	8.5	5.4	8.8	2.6	1.9	83.0
West Hurley FD - EMS	6.4	4.1	8.3	7.6	1.0	0.5	4.6	0.8	4.5	3.4	0.0	41.3
Woodstock FD - EMS	35.1	35.2	49.4	70.1	6.2	9.6	11.8	7.9	30.9	6.7	0.0	262.9
Local Ulster Agency Subtotal	**390.5**	**399.7**	**594.0**	**676.4**	**34.8**	**108.3**	**180.5**	**139.3**	**368.1**	**134.5**	**15.6**	**3041.6**
Mobile Life Support Services**	**180.3**	**165.8**	**225.9**	**267.5**	**16.7**	**38.8**	**78.0**	**76.7**	**178.7**	**14.6**	**0.0**	**1,243.1**
Total	**570.8**	**565.3**	**819.9**	**944.1**	**51.5**	**147.1**	**258.6**	**215.8**	**546.8**	**149.1**	**15.6**	**4,284.7**

Note: *Contracting commercial service that has primary coverage over the county; **Contracting out-of-county ambulance provider that has primary coverage Ulster areas; OD=Overdose and Psychiatric; UNC=Unconsciousness.

Figure 8: Annual Runs by EMS Agency

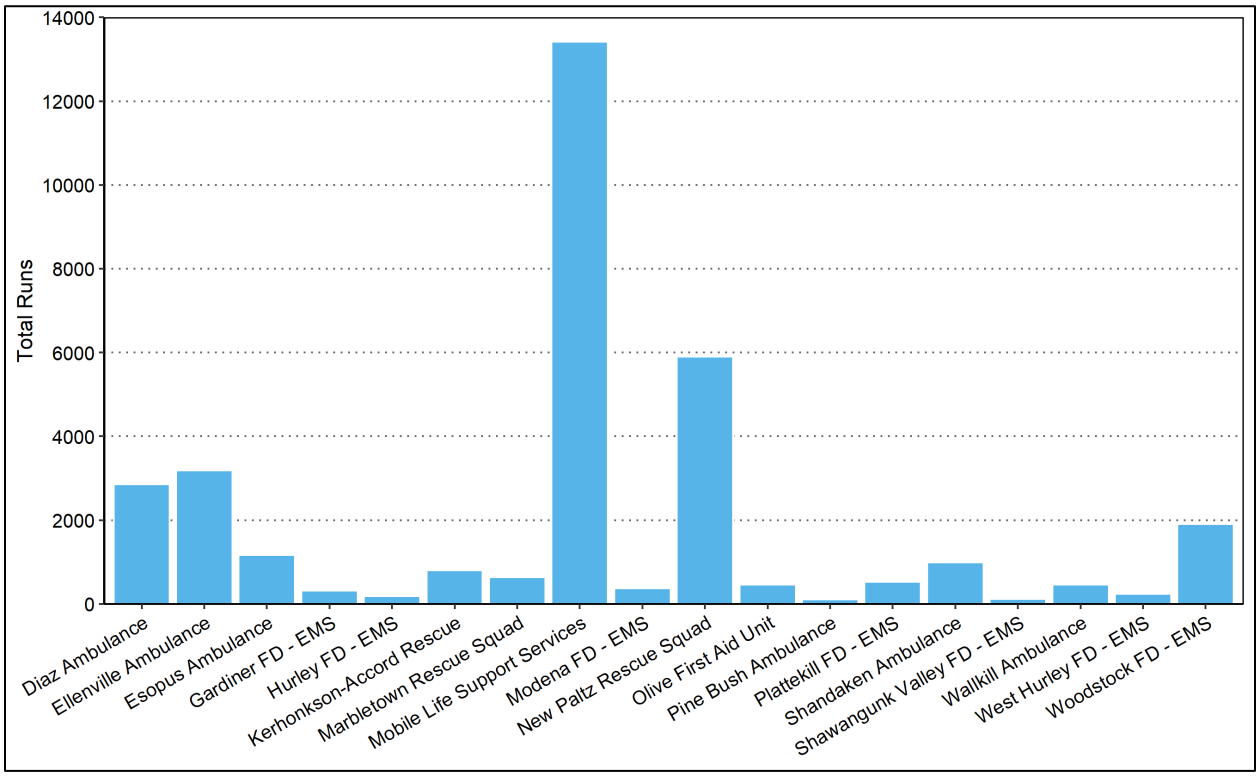
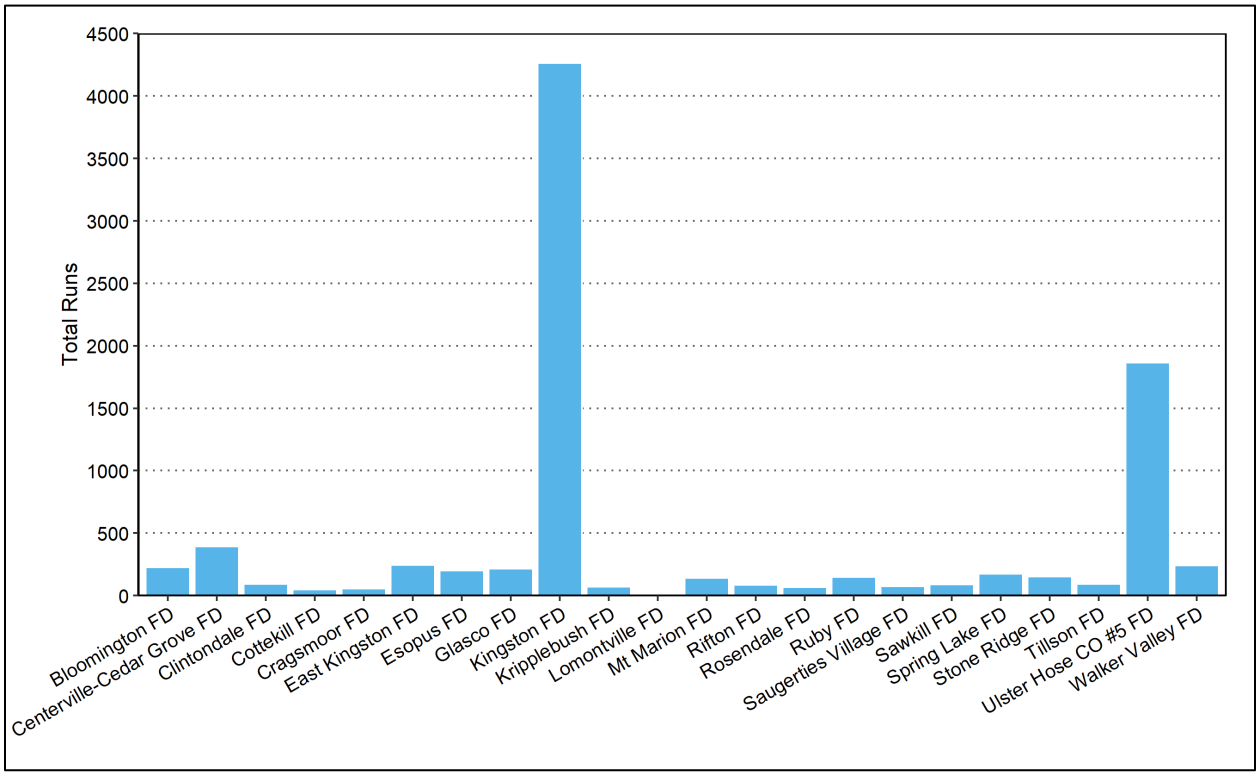


Figure 9: Annual Runs by First Responder Agency



WORKLOAD BY GEOGRAPHY

Table 22 summarizes the workload broken down by location.

Table 22: Summary of Annual Workload by Location

Location	Annual Calls	Annual Runs	Runs Per Day	Minutes Per Run	Annual Hours	Minutes Per Day	Percent of Work
Ellenville Village	677	1,353	3.7	36.5	822.1	135.1	2.7
Esopus Town	1,038	2,000	5.5	42.0	1,401.0	230.3	4.6
Gardiner Town	526	1,123	3.1	57.7	1,080.6	177.6	3.6
Hurley Town	544	935	2.6	48.2	751.4	123.5	2.5
Kingston City	4,193	8,709	23.9	22.5	3,262.4	536.3	10.7
Kingston Town	74	183	0.5	46.1	140.5	23.1	0.5
Lloyd Town	1,330	1,477	4.0	36.1	888.4	146.0	2.9
Marbletown Town	477	1,072	2.9	63.9	1,141.5	187.6	3.8
Marlborough Town	996	1,093	3.0	43.2	787.2	129.4	2.6
New Paltz Town	1,029	2,261	6.2	62.7	2,364.5	388.7	7.8
New Paltz Village	1,076	2,323	6.4	51.6	1,996.8	328.2	6.6
Newburgh Town*	98	138	0.4	33.0	75.9	12.5	0.2
Olive Town	395	624	1.7	57.1	593.8	97.6	2.0
Plattekill Town	1,117	1,707	4.7	55.4	1,575.0	258.9	5.2
Rochester Town	660	1,068	2.9	61.2	1,090.0	179.2	3.6
Rosendale Town	535	993	2.7	42.2	699.2	114.9	2.3
Saugerties Town	1,852	2,686	7.4	45.4	2,030.4	333.8	6.7
Saugerties Village	888	1,004	2.8	46.0	769.8	126.6	2.5
Shandaken Town	470	979	2.7	60.3	983.1	161.6	3.2
Shawangunk Town	839	1,523	4.2	58.5	1,485.6	244.2	4.9
Ulster Town	2,672	5,386	14.8	29.9	2,682.7	441.0	8.8
Wawarsing Town	1,053	2,118	5.8	61.8	2,180.1	358.4	7.2
Woodstock Town	893	1,813	5.0	50.4	1,524.0	250.5	5.0
Ulster County Subtotal	**23,432**	**42,568**	**116.6**	**42.7**	**30,326.2**	**4,985.1**	**99.7**
Dutchess County**	8	15	0.0	48.3	12.1	2.0	0.0
Greene County**	4	6	0.0	65.0	6.5	1.1	0.0
Orange County**	31	31	0.1	94.6	48.9	8.0	0.2
Sullivan County**	17	22	0.1	74.4	27.3	4.5	0.1
Out-of-County Subtotal	**60**	**74**	**0.2**	**76.9**	**94.8**	**15.6**	**0.3**
Total	**23,492**	**42,642**	**116.8**	**42.8**	**30,420.9**	**5,000.7**	**100.0**

Note: *: *Newburgh is in Orange County, however, part of it is a protection district covered by Plattekill Fire District; **Areas for aid given.

Observations:

- Kingston City, Ulster Town, and New Paltz Town are the top three municipalities with the highest deployed hours.
- **Kingston City**
  - There were 8,709 runs. The daily average was 23.9 runs.
  - The total deployed time for the year was 3,262.4 hours or 11 percent of the total annual workload. The daily average was 8.9 hours for all units combined.
- **Ulster Town**
  - There were 5,386 runs. The daily average was 14.8 runs.
  - The total deployed time for the year was 2,682.7 hours or nine percent of the total annual workload. The daily average was 7.3 hours for all units combined.
- **New Paltz Town**
  - There were 2,261 runs. The daily average was 6.2 runs.
  - The total deployed time for the year was 2,364.5 hours or eight percent of the total annual workload. The daily average was 6.5 hours for all units combined.

BUSIEST HOURS

In this analysis, we included all 23,552 calls that were responded to by the Ulster County EMS system and external EMS services inside Ulster County (the total number of calls in Table 7 excluding 60 aid given calls). There is significant variability in the number of calls from hour to hour. One special concern relates to the resources available for hours with the heaviest workload. We tabulated the data for each of the 8,760 hours in the year. Table 23 shows the number of hours in the year in which there were zero to ten or more calls during the hour. Table 24 shows the ten one-hour intervals which had the most calls during the year. Tables 25 and 26 examine the number of times a call overlapped with other calls within each EMS agency's primary service area separated by local EMS agencies and contracting EMS agencies.

Table 23: Number of Calls in An Hour

Calls in an Hour	Frequency	Percentage
0	962	11.0
1	1,707	19.5
2	1,926	22.0
3	1,569	17.9
4	1,108	12.6
5	723	8.3
6	401	4.6
7	187	2.1
8	103	1.2
9	51	0.6
10+	23	0.3
Total	**8,760**	**100.0**

Table 24: Top 10 Hours with the Most Calls Received

Hour	Number of Calls	Number of Runs	Total Hours
12/5/2022 10:00 a.m. to 11:00 a.m.	13	25	15.5
2/5/2022 3:00 p.m. to 4:00 p.m.	12	25	20.6
7/17/2022 5:00 p.m. to 6:00 p.m.	12	18	16.4
6/29/2022 1:00 p.m. to 2:00 p.m.	11	23	16.3
2/5/2022 10:00 a.m. to 11:00 a.m.	11	21	11.8
10/12/2022 10:00 a.m. to 11:00 a.m.	11	20	16.8
12/15/2022 11:00 a.m. to noon	11	19	18.8
12/28/2022 5:00 p.m. to 6:00 p.m.	10	22	13.0
8/20/2022 noon to 1:00 p.m.	10	22	11.4
12/16/2022 9:00 a.m. to 10:00 a.m.	10	21	15.5

Note: Total hours is a measure of the total time spent responding to calls received in the hour, which may extend into the next hour or hours. The number of runs and deployed hours only includes units of the studied agencies.

Table 25: Frequency of Overlapping Calls by Ambulance Agency

Service Area	Scenario	Calls	% Calls	Hours
Diaz Ambulance	No overlapped call	2,022	73.7	1,706.8
	Overlapped with one call	624	22.8	255.3
	Overlapped with two or more calls	96	3.5	23.8
Ellenville Ambulance	No overlapped call	1,384	85.7	1,291.4
	Overlapped with one call	198	12.3	108.7
	Overlapped with two calls	32	2.0	10.1
Esopus Ambulance	No overlapped call	945	90.9	823.4
	Overlapped with one call	90	8.7	41.5
	Overlapped with two or more calls	5	0.5	1.4
Gardiner FD - EMS	No overlapped call	464	93.2	577.3
	Overlapped with one call	34	6.8	21.6
Hurley FD - EMS	No overlapped call	245	99.2	211.0
	Overlapped with one call	2	0.8	1.1
Kerhonkson-Accord First Aid Squad	No overlapped call	718	91.0	879.4
	Overlapped with one call	67	8.5	47.4
	Overlapped with two or more calls	4	0.5	1.3
Marbletown First Aid Unit	No overlapped call	529	90.9	718.0
	Overlapped with one call	53	9.1	30.1
Modena FD - EMS	No overlapped call	457	95.6	519.4
	Overlapped with one call	21	4.4	10.5
New Paltz Rescue Squad	No overlapped call	1,636	77.7	1,669.2
	Overlapped with one call	417	19.8	214.8
	Overlapped with two or more calls	53	2.5	18.9
Olive First Aid Unit	No overlapped call	376	93.8	428.7
	Overlapped with one call	25	6.2	14.9
Pine Bush Ambulance	No overlapped call	315	96.3	397.4
	Overlapped with one call	12	3.7	5.5
Plattekill FD - EMS	No overlapped call	483	94.3	514.7
	Overlapped with one call	29	5.7	14.9
Shandaken Ambulance	No overlapped call	433	91.9	548.5
	Overlapped with one call	36	7.6	18.0
	Overlapped with two calls	2	0.4	0.3
Shawangunk Valley FD - EMS	No overlapped call	150	97.4	216.2
	Overlapped with one call	4	2.6	1.7
Wallkill Ambulance	No overlapped call	384	93.7	502.5
	Overlapped with one call	26	6.3	17.2
West Hurley FD - EMS	No overlapped call	286	96.3	311.6
	Overlapped with one call	11	3.7	6.0

Service Area	Scenario	Calls	% Calls	Hours
Woodstock FD - EMS	No overlapped call	827	92.5	778.2
	Overlapped with one call	62	6.9	26.4
	Overlapped with two calls	5	0.6	2.0

Table 26: Frequency of Overlapping Calls in Mobile Life Support Services' Service Area

Service Area	Scenario	Calls	Pct Calls	Hours
Primary Coverage Areas	No overlapped call	4,546	49.1	2,602.5
	Overlapped with one call	2,958	31.9	924.0
	Overlapped with two calls	1,265	13.7	266.0
	Overlapped with three calls	399	4.3	64.4
	Overlapped with four calls	82	0.9	10.5
	Overlapped with five calls	15	0.2	0.8
	Overlapped with six calls	2	0.0	0.2
Non-Primary Coverage Areas	No overlapped call	667	92.3	561.4
	Overlapped with one call	54	7.5	21.1
	Overlapped with two calls	2	0.3	0.2

Note: Primary coverage areas include: Town of Lloyd, City of Kingston, Town of Kingston, and Town of Ulster.

Observations:

- For 23 hours (0.3 percent of all hours), ten or more calls occurred; in other words, ten or more calls were responded to in an hour roughly once every 16 days.
- The highest number of calls to occur in an hour was 13, which happened once.
- The hour with the most calls was 10:00 a.m. to 11:00 a.m. on December 5, 2022. The hour's 13 calls involved 25 individual dispatches resulting in 15.5 hours of deployed time. These 13 calls included five illness and other calls, three cardiac and stroke calls, two breathing difficulty calls, two fall and injury calls, and one seizure and unconsciousness call.
- The total number of overlapped calls within the same EMS agency's first due area during the year was 7,340 (31 percent of total calls).
- The total overlapped hours in local agency's (except Mobile Life Support Services) service areas during the year was 893.4 hours.
- The total overlapped hours in Mobile Life Support Services' primary coverage areas during the year was 1,265.9 hours.

AMBULANCE SERVICE AVAILABILITY

In this section, we analyze Ulster County's ambulance agencies' availability to respond to calls. Here, we divide the county into each ambulance agency's service area rather than by municipality. Some municipal areas include segments of different ambulance agency service areas, and their ambulance service is provided by multiple ambulance agencies. In addition, when a local ambulance agency is not available, ambulance services from Mobile Life Support Services, neighboring communities, or out-of-county ambulance agencies may provide auto aid or mutual aid. In this analysis, we included all 23,552 calls (Table 7 excluding 60 mutual aid provided calls) inside Ulster County. At the same time, we focused on calls where at least one unit eventually arrived and ignored calls where no unit arrived. Of 23,552 total calls, 22,787 calls had at least one arriving unit.

Table 27 examines each ambulance agency's availability to respond to calls within its service area. Agencies that during the analysis period responded to less than 70% of their dispatched calls are highlighted.

Table 27: EMS Agency Availability to Respond to Calls

Service Area	Calls in Area	Agency Responded	% Responded	Agency Arrived	% Arrived	Agency First	% Arrived First
Diaz Ambulance	2,664	2,625	98.5	2,606	97.8	2,440	91.6
Ellenville Ambulance	1,571	1,511	96.2	1,507	95.9	1,480	94.2
Esopus Ambulance	1,002	894	89.2	879	87.7	640	63.9
Gardiner FD – EMS	477	290	60.8	280	58.7	258	54.1
Hurley FD – EMS	236	155	65.7	153	64.8	101	42.8
Kerhonkson Accord First Aid Squad	770	676	87.8	670	87.0	649	84.3
Marbletown First Aid Unit	562	522	92.9	517	92.0	425	75.6
Modena FD – EMS	451	297	65.9	291	64.5	283	62.7
New Paltz Rescue Squad	2,056	2,026	98.5	2,022	98.3	2,018	98.2
Olive First Aid Unit	392	378	96.4	377	96.2	372	94.9
Pine Bush Ambulance**	296	100	33.8	94	31.8	49	16.6
Plattekill FD – EMS	466	378	81.1	370	79.4	350	75.1
Shandaken Ambulance	452	448	99.1	447	98.9	446	98.7
Shawangunk Valley FD – EMS	140	97	69.3	92	65.7	90	64.3
Wallkill Ambulance	397	331	83.4	325	81.9	301	75.8
West Hurley FD – EMS	273	188	68.9	184	67.4	149	54.6
Woodstock FD – EMS	862	842	97.7	839	97.3	836	97.0
Ulster Agency Subtotal	**13,067**	**11,758**	**90.0**	**11,653**	**89.2**	**10,887**	**83.3**
Mobile Life Support Services*	**9,720**	**9,604**	**98.8**	**9,271**	**95.4**	**5,019**	**51.6**
Total	**22,787**	**21,362**	**93.7**	**20,924**	**91.8**	**15,906**	**69.8**

Note: *Contracting commercial service; **Contracting out-of-county ambulance provider that has primary coverage Ulster areas; For each ambulance agency, we count the number of calls occurring within its service area. Then, we count the number of calls where at least one unit arrived. Next, we focus on units from the primary agency to see if any of its units responded, arrived, or arrived first.

Observations:

- For 22,787 calls that had at least one arriving unit, The local ambulance agency arrived at 20,924 calls (92 percent of total calls).
- Of the 1,863 calls where the local EMS agency did not arrive, the first response service, other nonlocal Ulster County EMS services, and out-of-county EMS services arrived at 582 (31 percent), 1,255 (67 percent), and 168 calls (nine percent), respectively.

AMBULANCE RESPONSE TIME

In this part of the analysis, we present response time statistics for different call types, ambulance agencies, and areas. We separate response time into its identifiable components. ***Processing time*** is the difference between the time a call is received at the 911 dispatch center and the earliest dispatch time of a transport-capable medical unit (i.e., ambulance or helicopter). Processing time includes the time required to determine the nature of the emergency and the type of resources to dispatch. ***Activation time*** is the difference between the earliest dispatch time and the earliest enroute time of a transport-capable unit. *Travel time* is the difference between the earliest enroute time and the earliest on-scene time of a transport-capable unit. ***Response time*** is the total time elapsed between the time the call is received by the PSAP to arriving on scene.

In this analysis, we included all responding transport-capable units from both the Ulster County EMS system and out-of-county EMS services. We also considered all EMS calls that occurred within Ulster County to which at least one transport-capable unit responded.

Based on the 23,610 total calls responded to by both Ulster County and out-of-county ambulance agencies, we excluded 60 aid given calls, 499 non-EMS calls, 2,634 calls where one or more segments of the transport-capable unit's response time could not be calculated due to missing data, and 105 calls where the first arriving unit's response time exceeded an hour. As a result, a total of 20,312 calls are included in our response time analysis, of which, 18,177 calls are emergency calls and 2,135 nonemergency calls. The types of calls that were categorized as emergency calls are shown in Table 28. All others were labeled nonemergencies.

In the first part of this analysis, the response times of emergency and nonemergency calls are compared. In the remainder of the analysis, we combine emergency and nonemergency calls and focus on Ulster County EMS's response to overall calls.

Table 28: Emergency Call Descriptions

Description	Count
Accidental personal injury	1,236
ALS evaluation/assist	8
Critical	9,479
Psychiatric emergency	634
Stable	5,035
Unstable	1,785
Total	**18,177**

Note: The method to identify emergency calls was provided by Ulster County's Department of Emergency Services.

AMBULANCE RESPONSE TIME BY TYPE OF CALL

Table 29 provides the average and corresponding 90th percentile processing, activation, travel, and total response times for emergency levels. Table 29 shows average and 90th percentile response times by call type.

90th Percentile Definition:
A 90th percentile means that 90 percent of calls had response times **at or below that number**. For example, Table 29 shows a 90th percentile response time of 24.0 minutes, which means that 90 percent of the time, a call had a response time of no more than 24.0 minutes. Figure 9 illustrates the overall average response time for all EMS calls.

Table 29: Response Time (Minutes) of First Arriving Ambulance by Emergency Level

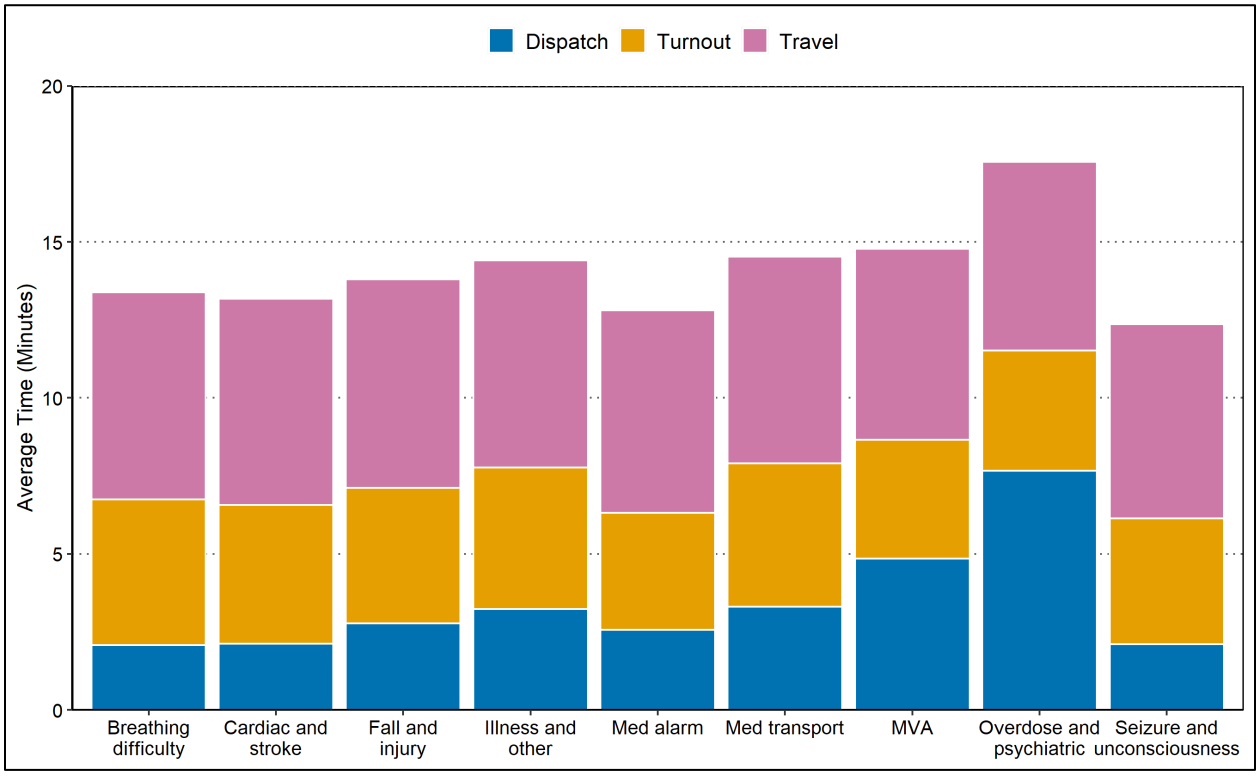
Emergency Level	Average Response Time				90th Percentile Response Time				Call Count
	Process	Activate	Travel	Total	Process	Activate	Travel	Total	
Emergency	3.1	4.3	6.5	13.9	4.3	9.2	12.6	24.0	18,177
Nonemergency	2.7	4.5	6.8	14.0	3.9	9.8	12.8	23.4	2,135
Total	**3.1**	**4.3**	**6.5**	**13.9**	**4.2**	**9.2**	**12.6**	**23.9**	**20,300**

Table 30: Overall Response Time (Minutes) of First Ambulance Unit at EMS Calls, by Call Type

Call Type	Average Response Time				90th Percentile Response Time				Call Count
	Process	Activate	Travel	Total	Process	Activate	Travel	Total	
Breathing difficulty	2.1	4.7	6.6	13.4	3.1	10.2	12.8	22.7	2,624
Cardiac and stroke	2.1	4.4	6.6	13.2	3.1	9.3	13.2	22.3	2,338
Fall and injury	2.8	4.3	6.7	13.8	3.9	9.4	13.1	23.6	4,450
Illness and other	3.2	4.5	6.6	14.4	4.3	9.8	12.8	25.0	4,680
Medical alarm	2.6	3.7	6.5	12.8	3.8	7.6	11.7	20.2	603
Medical transport	3.3	4.6	6.6	14.5	4.4	10.4	12.0	25.8	679
MVA	4.8	3.8	6.1	14.8	11.8	8.4	12.0	25.2	1,229
OD	7.7	3.9	6.0	17.6	21.0	7.0	11.3	34.7	1,201
Seizure and UNC	2.1	4.0	6.2	12.4	3.0	7.7	12.4	20.9	2,508
Total	**3.1**	**4.3**	**6.5**	**13.9**	**4.2**	**9.2**	**12.6**	**23.9**	**20,312**

Note: OD= Overdose and Psychiatric; UNC=Unconsciousness. *For MVA calls, the processing time may be longer due if the call did not originally include an EMS request. **For overdose and psychiatric calls, the processing time may be longer when scene safety needed to be determined before treating the patient.

Figure 10: Average Response Time of First Arriving Unit at EMS Calls, by Call Type



Observations:

- The difference between emergency and nonemergency ambulance calls was not significant.
- The average processing time was 3.1 minutes.
- The average activation time was 4.3 minutes.
- The average travel time was 6.5 minutes.
- The average total response time was 13.9 minutes.
- The 90th percentile processing time was 4.2 minutes.
- The 90th percentile activation time was 9.2 minutes.
- The 90th percentile travel time was 12.6 minutes.
- The 90th percentile total response time was 23.9 minutes.

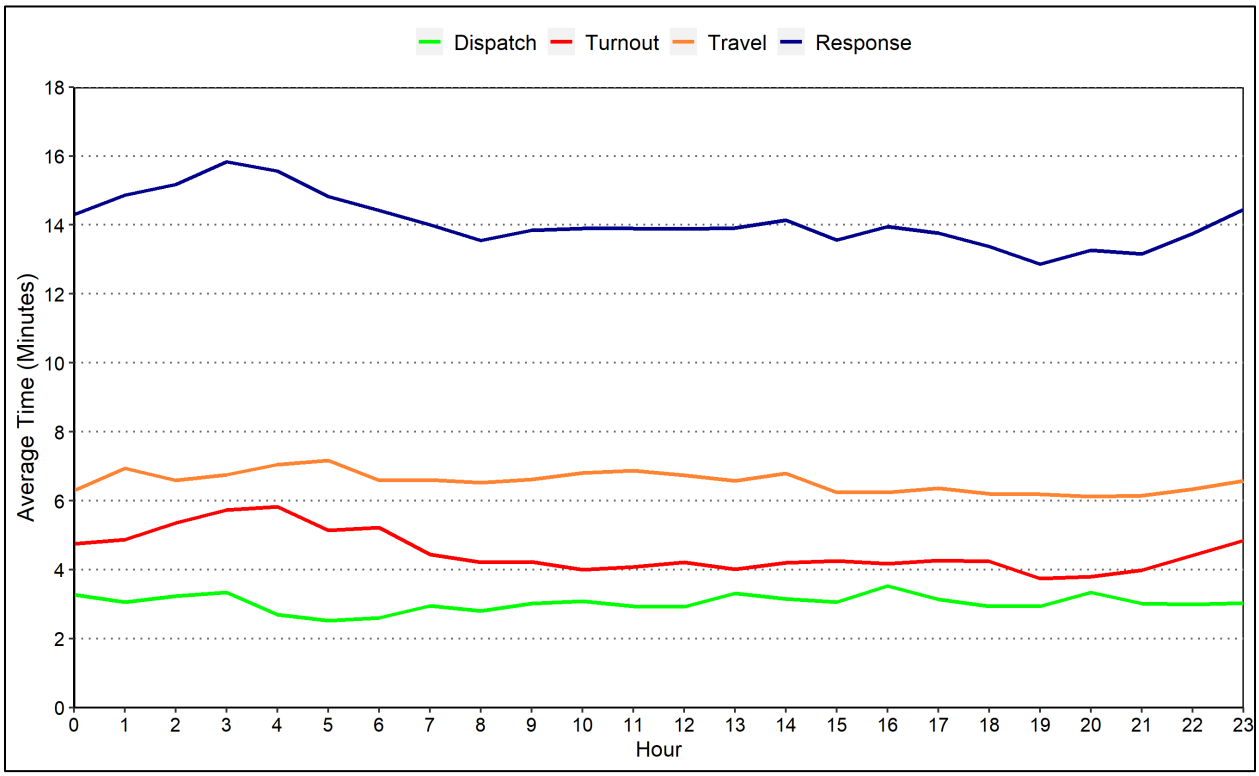
RESPONSE TIME BY HOUR

Average processing, activation, travel, and total response time by hour for EMS calls are shown in Table 31 and Figure 10. Table 31 also shows the 90th percentile response times.

Table 31: Average and 90th Percentile Response Time (Minutes) of First Arriving Ambulance at EMS Calls, by Hour of Day

Hour	Processing	Activation	Travel	Response Time	90th Percentile Response Time	Number of Calls
0	3.3	4.7	6.3	14.3	24.1	570
1	3.1	4.9	6.9	14.9	27.0	511
2	3.2	5.4	6.6	15.2	26.8	423
3	3.3	5.7	6.8	15.8	27.2	390
4	2.7	5.8	7.1	15.6	26.8	417
5	2.5	5.1	7.2	14.8	24.1	434
6	2.6	5.2	6.6	14.4	25.6	529
7	2.9	4.4	6.6	14.0	25.3	718
8	2.8	4.2	6.5	13.5	22.9	941
9	3.0	4.2	6.6	13.8	23.8	1,066
10	3.1	4.0	6.8	13.9	23.7	1,188
11	2.9	4.1	6.9	13.9	23.6	1,177
12	2.9	4.2	6.7	13.9	23.4	1,170
13	3.3	4.0	6.6	13.9	23.9	1,172
14	3.2	4.2	6.8	14.1	24.4	1,131
15	3.1	4.3	6.2	13.6	22.4	1,145
16	3.5	4.2	6.2	14.0	23.9	1,110
17	3.1	4.3	6.4	13.8	23.7	1,089
18	3.0	4.2	6.2	13.4	23.0	986
19	2.9	3.7	6.2	12.9	21.4	1,008
20	3.3	3.8	6.1	13.3	22.3	951
21	3.0	4.0	6.1	13.2	22.4	833
22	3.0	4.4	6.3	13.7	23.3	735
23	3.0	4.8	6.6	14.4	24.8	618
Total	**3.1**	**4.3**	**6.5**	**13.9**	**23.9**	**20,312**

Figure 11: Average Response Time of First Arriving Ambulance at EMS Calls, by Hour of Day



Observations:

- The average processing time was between 2.5 minutes (5:00 a.m. to 6:00 a.m.) and 3.5 minutes (4:00 p.m. to 5:00 p.m.).
- The average activation time was between 3.7 minutes (7:00 p.m. to 8:00 p.m.) and 5.8 minutes (4:00 a.m. to 5:00 a.m.).
- The average travel time was between 6.1 minutes (8:00 p.m. to 9:00 p.m.) and 7.2 minutes (5:00 a.m. to 6:00 a.m.).
- The average response time was between 12.9 minutes (7:00 p.m. to 8:00 p.m.) and 15.8 minutes (3:00 a.m. to 4:00 a.m.).
- The 90th percentile response time was between 21.4 minutes (7:00 p.m. to 8:00 p.m.) and 27.2 minutes (3:00 a.m. to 4:00 a.m.).

RESPONSE TIME DISTRIBUTION

Here, we present a more detailed look at how the ambulance response times to overall EMS calls are distributed. The cumulative distribution of total response time for the first arriving transport-capable unit is shown in Figure 11 and Table 32. Figure 11 shows response times for the first arriving transport-capable unit as a frequency distribution in whole-minute increments.

The cumulative percentages here are read in the same way as a percentile. In Figure 11, the 90th percentile of 23.9 minutes means that 90 percent of calls had a response time of 23.9 minutes or less. In Table 32, the cumulative percentage of 21.5, for example, means that 21.5 percent of EMS calls had a response time under 8 minutes.

Figure 12: Cumulative Distribution of Response Time to EMS Calls

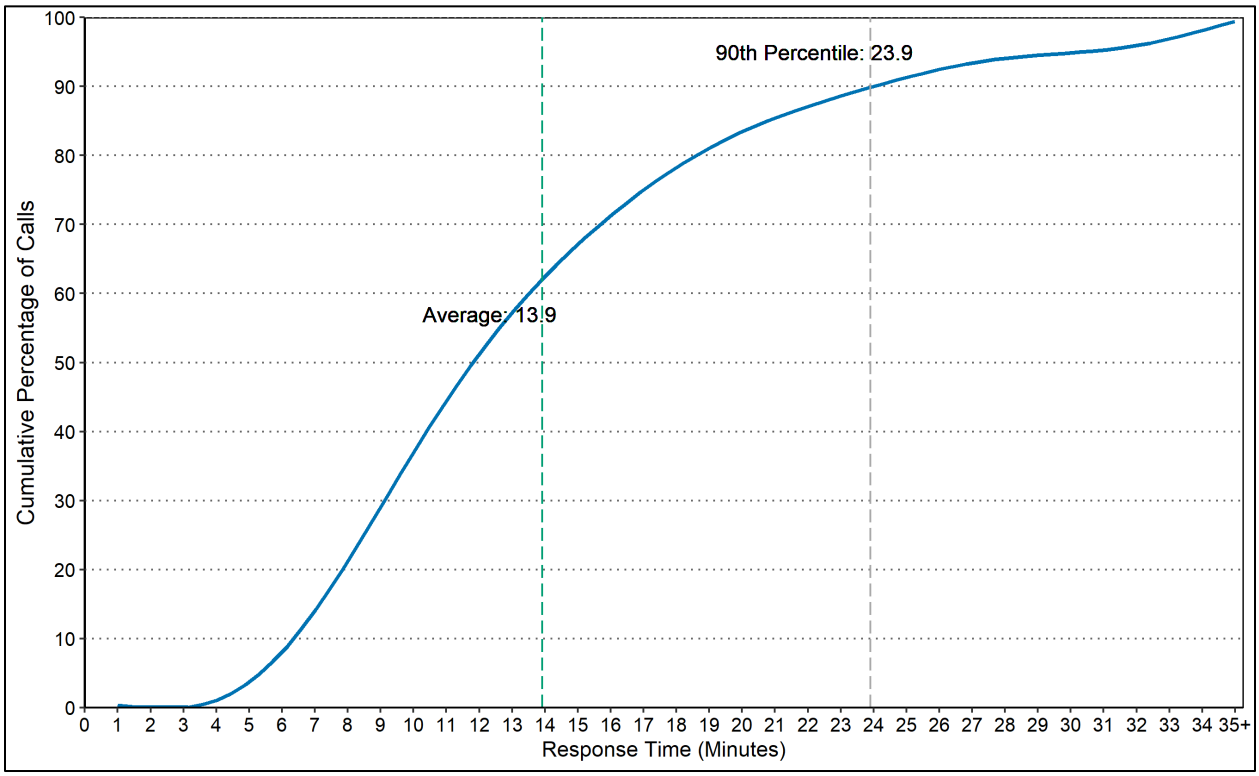


Table 32: Cumulative Distribution of Ambulance Response Time

Response Time (minute)	Frequency	Cumulative Percentage
1	18	0.1
2	28	0.2
3	24	0.3
4	126	1.0
5	466	3.3
6	894	7.7
7	1,284	14.0
8	1,522	21.5
9	1,588	29.3
10	1,567	37.0
11	1,492	44.4
12	1,358	51.0
13	1,242	57.2
14	1,097	62.6
15	936	67.2
16	832	71.3
17	795	75.2
18	621	78.2
19	558	81.0
20	445	83.2
21	466	85.5
22	350	87.2
23	318	88.8
24	282	90.1
25	220	91.2
26	232	92.4
27	165	93.2
28	156	93.9
29	127	94.6
30	131	95.2
31	92	95.7
32	77	96.0
33	96	96.5
34	68	96.9
Above 34	639	100.0

Note: The first column indicates the upper limit in minutes. For example, the first row shows calls whose response time was less than or equal to one minute. The eighth row displays calls whose response time was more than 7 minutes and less than or equal to 8 minutes. The final row displays all remaining calls with longer response times.

Observations:

- For 21 percent of all calls, the response time of the first arriving unit was less than 8 minutes.

RESPONSE TIMES BY GEOGRAPHY

The geographical distribution of the average and 90th percentile ambulance response times are detailed in Table 33 and Figure 12.

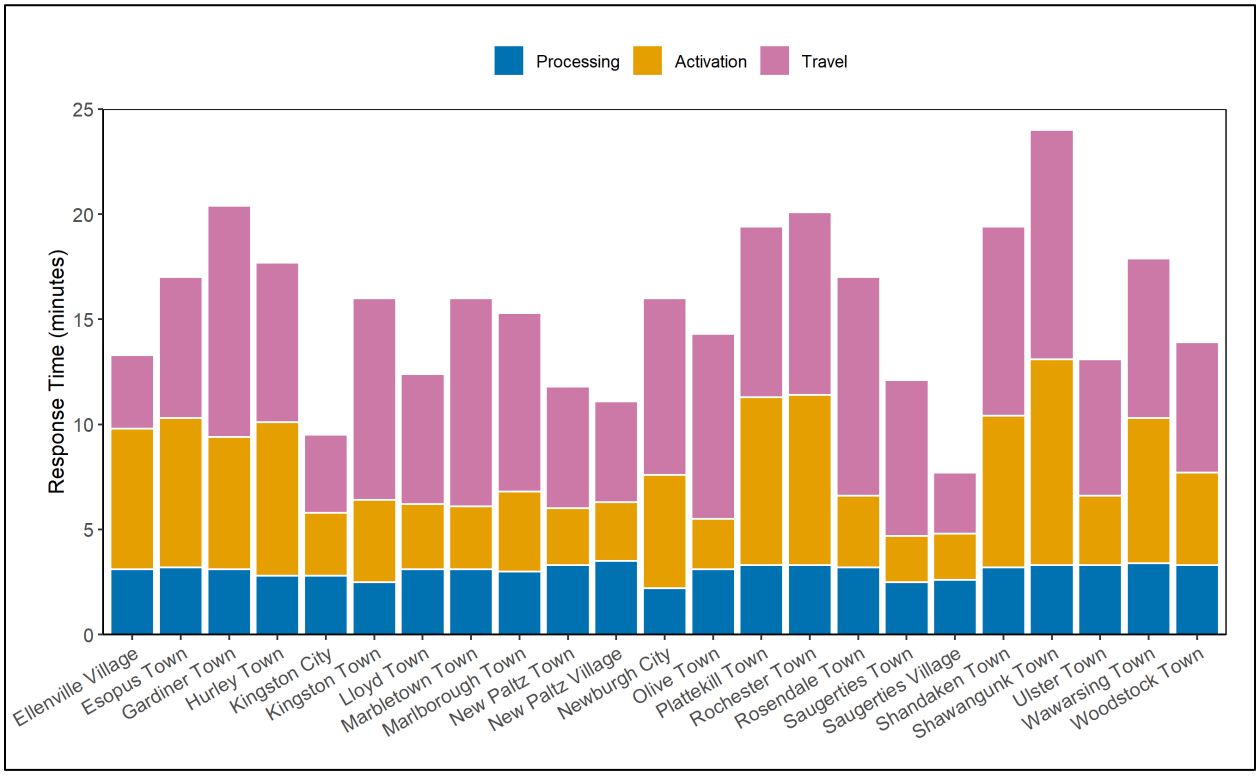
In the chart below, Activation times (*the time between dispatch and enroute to the response*) that are greater than four minutes are highlighted. The best practice is that there should be a confirmed response by a responding agency in less than four minutes. Long Activation times generally indicate the time it takes to confirm that an ambulance is responding to the call.

Table 33: Average and 90th Percentile Response Time (Minutes) of First Arriving Ambulance at EMS Calls, by Location

Location	Average Response Time				90th Percentile Response Time				Calls
	Process	Activate	Travel	Total	Process	Activate	Travel	Total	
Ellenville Village	3.1	6.7	3.5	13.3	4.8	11.8	5.5	22.3	552
Esopus Town	3.2	7.1	6.7	16.9	3.9	14.6	11.8	27.9	932
Gardiner Town	3.1	6.3	11.0	20.3	4.2	11.3	18.1	28.8	466
Hurley Town	2.8	7.3	7.6	17.7	3.8	14.8	14.2	27.6	455
Kingston City	2.8	3.0	3.7	9.5	3.8	4.6	6.5	14.5	3,604
Kingston Town	2.5	3.9	9.6	15.9	4.3	6.0	14.4	21.4	56
Lloyd Town	3.1	3.1	6.2	12.5	4.4	5.3	11.6	20.2	1,197
Marbletown Town	3.1	3.0	9.9	16.0	4.4	4.7	16.9	24.7	427
Marlborough Town	3.0	3.8	8.5	15.3	4.1	5.7	14.8	23.4	884
New Paltz Town	3.3	2.7	5.8	11.9	4.6	4.0	9.1	17.1	930
New Paltz Village	3.5	2.8	4.8	11.1	7.4	4.2	8.1	17.9	1,017
Newburgh Town*	2.2	5.4	8.4	16.0	2.7	11.3	14.2	22.5	82
Olive Town	3.1	2.4	8.8	14.3	4.2	3.5	15.7	22.7	370
Plattekill Town	3.3	8.0	8.1	19.5	4.5	16.0	14.9	31.7	996
Rochester Town	3.3	8.1	8.7	20.1	4.6	16.2	16.6	33.7	579
Rosendale Town	3.2	3.4	10.4	17.0	4.1	5.2	16.0	24.1	444
Saugerties Town	2.5	2.2	7.4	12.1	3.5	3.3	11.7	16.9	1,670
Saugerties Village	2.6	2.2	2.9	7.6	3.6	3.4	4.4	10.8	800
Shandaken Town	3.2	7.2	9.0	19.4	4.2	11.8	15.0	28.2	383
Shawangunk Town	3.3	9.8	10.9	24.0	4.2	17.8	22.0	38.2	672
Ulster Town	3.3	3.3	6.5	13.0	4.7	5.2	10.6	19.5	2,262
Wawarsing Town	3.4	6.9	7.6	17.9	4.5	12.3	14.0	28.7	880
Woodstock Town	3.3	4.4	6.2	13.9	4.8	9.5	11.1	23.2	654
Total	**3.1**	**4.3**	**6.5**	**13.9**	**4.2**	**9.2**	**12.6**	**23.9**	**20,312**

Note: *Newburgh is in Orange County, however, part of it is a protection district covered by Plattekill Fire District.

Figure 13: Average Response Time of First Arriving Unit at EMS Calls, by Location



Observations:

- Saugerties Village had the shortest response time. The average and the 90th percentile response times were 7.6 and 10.8 minutes, respectively.
- Kingston City had the second shortest response time. The average and the 90th percentile response times were 9.5 and 14.5 minutes, respectively.

RESPONSE TIMES BY AMBULANCE AGENCY SERVICE AREA

The average and 90th percentile response times broken down by each ambulance agency's service area are summarized in Table 34. Figure 13 illustrates the same information.

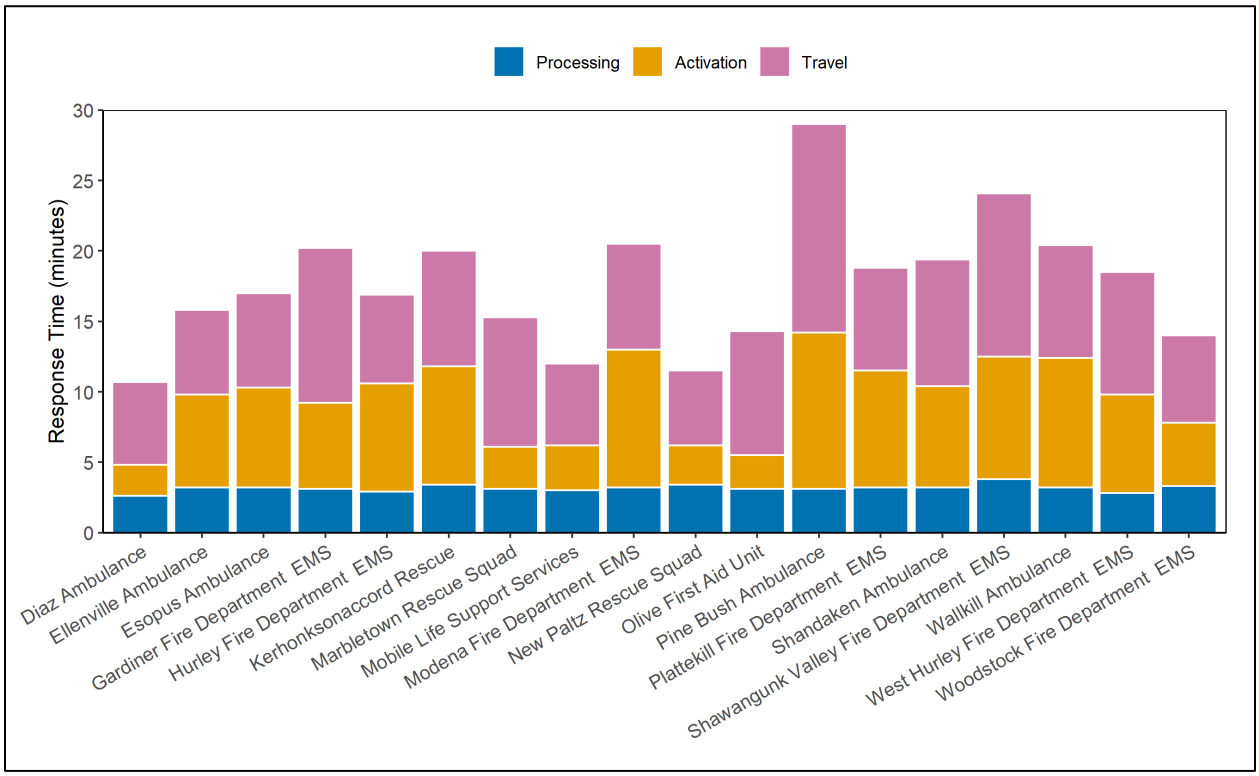
In the chart below, Activation times (*the time between dispatch and enroute to the response*) that are greater than four minutes are highlighted. The best practice is that there should be a confirmed response by a responding agency in less than four minutes. Long Activation times generally indicate the time it takes to confirm that an ambulance is responding to the call.

Table 34: Average and 90th Percentile Response Time (Minutes) by EMS Service Area

Service Area	Average Response Time				90th Percentile Response Time				Calls
	Process	Activate	Travel	Total	Process	Activate	Travel	Total	
Diaz Ambulance	2.6	2.2	5.9	10.6	3.5	3.4	11.1	16.3	2,470
Ellenville Ambulance	3.2	6.6	6.0	15.8	4.5	11.5	11.9	26.2	1,301
Esopus Ambulance	3.2	7.1	6.7	16.9	3.9	14.6	11.8	27.9	932
Gardiner FD – EMS	3.1	6.1	11.0	20.2	4.2	10.8	17.9	28.8	442
Hurley FD – EMS	2.9	7.7	6.3	16.8	3.8	16.0	10.9	29.4	209
Kerhonkson - Accord First Aid Squad	3.4	8.4	8.2	20.1	4.7	16.7	16.2	34.8	693
Marbletown First Aid Unit	3.1	3.0	9.2	15.2	4.2	4.6	16.2	23.9	521
Mobile Life Support Services*	3.0	3.2	5.8	12.1	4.2	5.1	11.2	19.8	8,608
Modena FD – EMS	3.2	9.8	7.5	20.4	4.4	17.9	13.6	32.5	407
New Paltz Rescue Squad	3.4	2.8	5.3	11.5	6.1	4.1	8.7	17.5	1,948
Olive First Aid Unit	3.1	2.4	8.8	14.3	4.2	3.5	15.7	22.7	373
Pine Bush Ambulance**	3.1	11.1	14.8	29.0	3.8	20.2	24.5	40.8	231
Plattekill FD – EMS	3.2	8.3	7.3	18.8	4.1	16.1	15.0	30.9	430
Shandaken Ambulance	3.2	7.2	9.0	19.4	4.2	11.8	15.0	28.2	380
Shawangunk Valley FD - EMS	3.8	8.7	11.7	24.1	7.2	14.0	23.8	38.8	123
Wallkill Ambulance	3.2	9.2	8.0	20.4	4.0	17.1	16.6	33.2	342
West Hurley FD - EMS	2.8	7.0	8.7	18.5	3.8	13.8	15.4	26.1	247
Woodstock FD - EMS	3.3	4.5	6.2	14.0	4.8	9.5	11.2	23.2	655
Total	**3.1**	**4.3**	**6.5**	**13.9**	**4.2**	**9.2**	**12.6**	**23.9**	**20,312**

Note: *Contracting commercial service that has primary coverage over the county; **Contracting out-of-county EMS provider that has primary coverage for portions of Ulster County.

Figure 14: Average Response Time by Ambulance Service Area



Observations:

- Diaz Ambulance's service area had the shortest response time. The average and the 90th percentile response time was 10.6 and 16.3 minutes, respectively.
- New Paltz Rescue Squad's service area had the second shortest response time. The average and the 90th percentile response time was 11.5 and 17.5 minutes, respectively.

TRANSPORT CALL ANALYSIS

In this section, we present an analysis of the unit activities that involved transporting patients, the variations by hour of day, and the average time for each stage of transport service. The geographical distribution of transport calls and mutual aid associated with patient transport is also examined.

Ulster County's EMS system and out-of-county ambulance services were involved in 14,913 and 207 transport calls, respectively. To examine transports, we included all 23,610 calls responded to by both Ulster County and out-of-county EMS agencies. In addition, we identify transport calls by requiring that at least one responding ambulance or helicopter record both a "beginning to transport" time and an "arriving at the hospital" time.

TRANSPORT CALLS BY TYPE

Table 35 shows the number of calls by call type broken out by transport and non-transport calls.

Table 35: Calls by Call Type and Transport

Call Type	Number of Calls			Transport Ratio
	Non-Transport	Transport	Total	
Breathing difficulty	619	2,276	2,895	78.6
Cardiac and stroke	706	1,856	2,562	72.4
Fall and injury	2,360	2,690	5,050	53.3
Illness and other	1,499	3,814	5,313	71.8
Medical alarm	749	61	810	7.5
Medical transport	121	658	779	84.5
MVA	806	652	1,458	44.7
Overdose and psychiatric	316	1,080	1,396	77.4
Seizure and unconsciousness	865	1,923	2,788	69.0
EMS Subtotal	**8,041**	**15,010**	**23,051**	**65.1**
Fire & Other	**508**	**51**	**559**	**9.1**
Total	**8,549**	**15,061**	**23,610**	**63.8**

Observations:

- Overall, 65 percent of EMS calls involved transporting one or more patients.
- On average, there were approximately 41.1 EMS calls per day that involved transporting one or more patients.

TRANSPORT CALLS PER HOUR

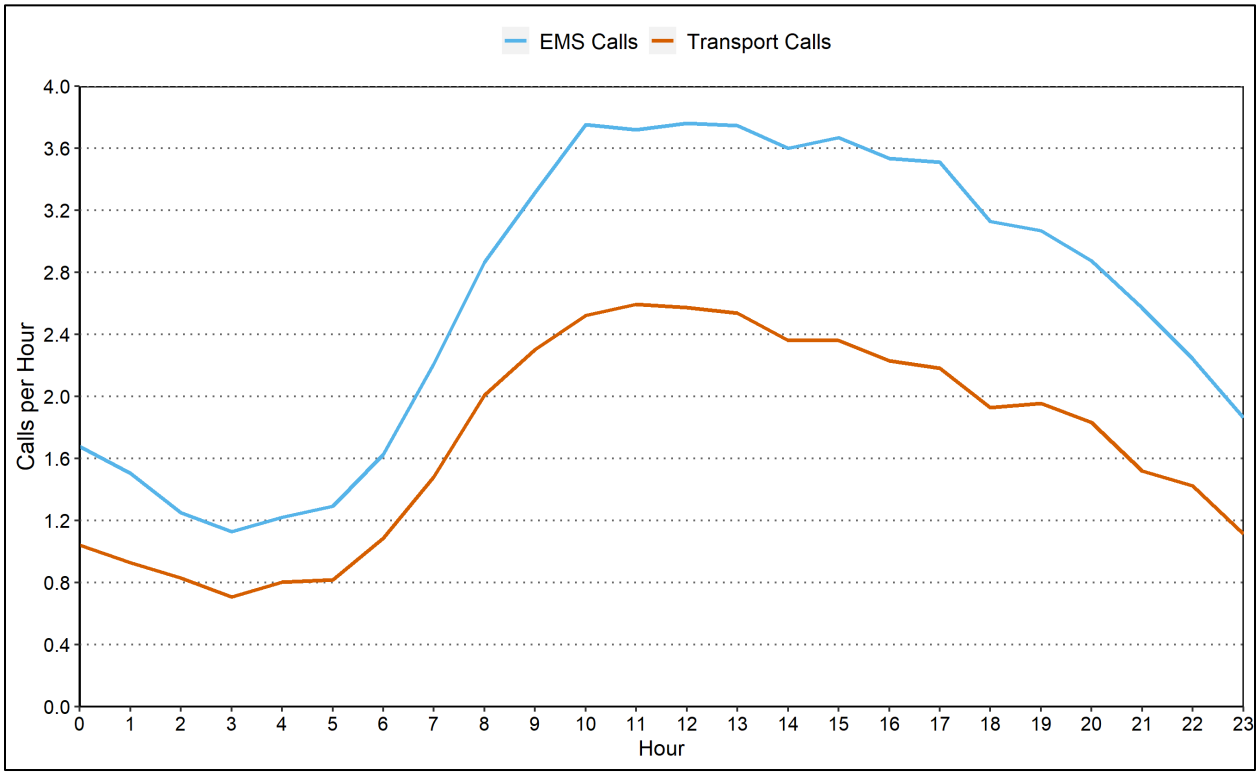
Table 36 and Figure 14 show the average number of transport calls received each hour of the day for the year and the average number of transport calls.

Table 36: EMS Transport Calls by Hour

Hour	Total Calls		Calls per Day		Transport Ratio
	EMS	Transport	EMS	Transport	
0	613	380	1.7	1.0	62.0
1	549	339	1.5	0.9	61.7
2	456	303	1.2	0.8	66.4
3	412	258	1.1	0.7	62.6
4	446	293	1.2	0.8	65.7
5	471	298	1.3	0.8	63.3
6	593	396	1.6	1.1	66.8
7	806	540	2.2	1.5	67.0
8	1,046	733	2.9	2.0	70.1
9	1,211	842	3.3	2.3	69.5
10	1,370	920	3.8	2.5	67.2
11	1,358	945	3.7	2.6	69.6
12	1,371	938	3.8	2.6	68.4
13	1,367	926	3.7	2.5	67.7
14	1,315	862	3.6	2.4	65.6
15	1,339	861	3.7	2.4	64.3
16	1,290	814	3.5	2.2	63.1
17	1,281	796	3.5	2.2	62.1
18	1,143	704	3.1	1.9	61.6
19	1,121	713	3.1	2.0	63.6
20	1,051	669	2.9	1.8	63.7
21	941	554	2.6	1.5	58.9
22	819	520	2.2	1.4	63.5
23	682	406	1.9	1.1	59.5
Total	**23,051**	**15,010**	**63.2**	**41.1**	**65.1**

Note: The transport ratio is measured by dividing the number of transports by the number of total calls. For example, between midnight and 1:00 a.m., there were 380 transports out of 613 calls. This gives a transport ratio of 380 / 613 = 0. 620 or 62.0 percent.

Figure 15: Average EMS Transport Calls per Day by Hour



Observations:

- EMS calls per hour were highest during the day from 10:00 a.m. to 4:00 p.m., averaging about 3.7 calls per hour.
- EMS calls per hour peaked between noon and 1:00 p.m., averaging 3.8 calls per hour.
- EMS calls per hour were lowest between 3:00 a.m. and 4:00 a.m., averaging 1.1 calls per hour.
- Hourly transport calls were highest during the day from 10:00 a.m. to 4:00 p.m., averaging 2.5 calls per hour.
- Hourly transport calls peaked between 11:00 a.m. and noon, averaging 2.6 calls per hour.
- Hourly transport calls were lowest between 3:00 a.m. and 4:00 a.m., averaging 0.7 calls per hour.
- The hourly transport ratio peaked between 8:00 a.m. and 9:00 a.m. at 70 percent.
- The hourly transport ratio was lowest between 9:00 p.m. and 10:00 p.m. at 59 percent.

TRANSPORT CALLS BY TYPE AND DURATION

Table 37 shows the average duration of transport calls by call type. The geographical difference in the average transport duration time is detailed in Table 38. **In this analysis, we filtered out the transport runs made by Mobile Life Support Services**. As a result, 6,904 transport calls responded to by only Mobile Life Support Services were excluded.

Table 37: Transport Call Duration by Call Type

Call Type	Transport	
	Average Duration (minutes)	Number of Calls
Breathing difficulty	76.4	1,237
Cardiac and stroke	80.3	1,069
Fall and injury	77.3	1,539
Illness and other	73.0	2,108
Medical alarm	74.5	31
Medical transport	71.9	355
MVA	94.1	359
Overdose and psychiatric	73.6	411
Seizure and unconsciousness	77.9	1,001
EMS Subtotal	**76.8**	**8,110**
Fire & Other	**354.0**	**47**
Total	**78.4**	**8,157**

Note: The duration of a call is defined as the longest deployed time of any of the units responding to the same call.

Observations:

- The average duration was 76.8 minutes for transport EMS calls.

Table 38: Transport Call Duration by Location

Location	Transport	
	Average Duration (minutes)	Number of Calls
Ellenville Village	50.4	439
Esopus Town	60.3	638
Gardiner Town	104.0	291
Hurley Town	79.4	242
Kingston City	71.0	28
Kingston Town	158.0	5
Lloyd Town	81.6	3
Marbletown Town	99.1	320
Marlborough Town	71.6	1
New Paltz Town	80.0	650
New Paltz Village	77.5	597
Newburgh Town*	64.8	34
Olive Town	87.7	249
Plattekill Town	83.8	537
Rochester Town	90.0	445
Rosendale Town	84.6	62
Saugerties Town	68.2	1,068
Saugerties Village	62.3	512
Shandaken Town	99.0	275
Shawangunk Town	96.8	454
Ulster Town	78.9	40
Wawarsing Town	83.8	733
Woodstock Town	77.1	505
Ulster County Subtotal	**78.4**	**8,128**
Dutchess County**	44.1	2
Greene County**	114.4	2
Orange County**	95.1	18
Sullivan County**	100.4	7
Out-of-County Subtotal	**94.2**	**29**
Total	**78.4**	**8,157**

Note: * Newburgh is in Orange County, however, part of it is a protection district covered by Plattekill Fire District. **Aid given areas.

Observations:

- Within Ulster County, the average transport duration varied from 50.4 minutes (in Ellenville Village) to 158.0 minutes (in Kingston Town) for transport EMS calls.

TRANSPORT TIME COMPONENTS

Table 39 gives the average deployed time for an ambulance on a transport call, along with Table 40 gives the average deployed time for an ambulance on a transport call, along with three major components of the deployed time: on-scene time, travel to hospital time, and at-hospital time. The ***on-scene time*** is the interval from the *unit arriving on-scene time through the time the unit departs the scene for the hospital*. ***Travel to hospital*** time is the interval from the time the *unit departs the scene to travel to the hospital through the time the unit arrives at the hospital*. **At-hospital time** is the interval from the *time the unit arrives at the hospital until the unit is cleared*.

Normally, the number of runs exceeds the number of calls as a call may have multiple runs. In addition, average times may differ slightly from similar averages measured per call. Table 40 details the geographical difference in average deployed time for an ambulance on a transport call.

Again, the transport runs made by Mobile Life Support Services were not included in this analysis.

Table 39: Time Component Analysis for Ambulance Transport Runs by Call Type

Call Type	Average Time Spent per Run (Minutes)				Number of Runs
	On Scene	Traveling to Hospital	At Hospital	Deployed	
Breathing difficulty	16.2	21.0	26.9	74.2	1,270
Cardiac and stroke	16.2	21.4	29.7	77.2	1,140
Fall and injury	16.7	21.8	25.7	74.1	1,604
Illness and other	14.8	21.1	24.9	70.4	2,170
Medical alarm	20.1	19.6	25.8	72.7	31
Medical transport	14.9	21.1	24.9	70.1	367
MVA	17.5	22.2	29.3	79.3	437
Overdose and psychiatric	14.3	20.7	27.0	71.0	428
Seizure and unconsciousness	17.0	21.0	27.2	74.7	1,057
EMS Subtotal	**16.0**	**21.3**	**26.6**	**73.6**	**8,504**
Fire & Other	**21.3**	**25.6**	**26.3**	**92.0**	**50**
Total	**16.0**	**21.3**	**26.6**	**73.7**	**8,554**

Note: Average unit deployed time per run is lower than the average call duration for some call types because call duration is based on the longest deployed time of any of the units responding to the same call, which may include an engine or ladder. Total deployed time is greater than the combination of on-scene, transport, and hospital wait times as it includes turnout, initial travel, and hospital return times. ***Also, for commercial ambulance agencies, the unit is placed "available" when they arrive at the hospital, which may result in underestimated average destination times.***

Observations:

- The average time spent on-scene for a transport call was 16.0 minutes.
- The average travel time from the scene to the hospital was 21.3 minutes.
- The average deployed time spent on transport calls was 73.7 minutes.
- The average deployed time at the hospital was 26.6 minutes, which accounts for approximately 36 percent of the average total deployed time for a transport call.

Table 40: Time Component for Ambulance Transport by Location

Location	Average Time Spent per Run				Number of Runs
	On Scene	Traveling to Hospital	At Hospital	Deployed	
Ellenville Village	13.5	7.0	18.1	45.2	445
Esopus Town	13.8	13.9	21.6	56.8	661
Gardiner Town	16.7	31.3	32.2	94.3	338
Hurley Town	18.7	17.3	28.9	77.9	245
Kingston City	10.9	7.3	16.1	44.7	28
Kingston Town	11.7	21.2	32.3	81.8	5
Lloyd Town	24.1	12.5	32.7	81.6	3
Marbletown Town	17.7	27.6	37.3	94.2	351
Marlborough Town	4.2	22.6	24.6	71.6	1
New Paltz Town	16.7	23.8	29.5	76.5	703
New Paltz Village	17.2	23.0	28.2	73.7	646
Newburgh Town*	17.4	17.2	18.7	62.3	35
Olive Town	19.4	29.3	26.5	85.4	254
Plattekill Town	15.3	23.1	29.3	80.9	596
Rochester Town	15.9	22.9	33.6	87.0	465
Rosendale Town	17.1	23.7	34.0	82.6	67
Saugerties Town	15.2	21.9	21.6	67.3	1,091
Saugerties Village	15.3	22.0	20.6	61.7	515
Shandaken Town	16.5	26.9	35.3	93.0	290
Shawangunk Town	16.7	26.8	32.0	91.3	485
Ulster Town	12.9	9.9	35.4	73.4	41
Wawarsing Town	17.6	13.1	21.4	63.5	744
Woodstock Town	14.1	24.2	26.1	73.6	515
Ulster County Subtotal	**16.0**	**21.3**	**26.6**	**73.6**	**8,524**
Dutchess County***	16.9	15.2	9.3	41.4	3
Greene County**	16.7	45.4	35.6	111.5	2
Orange County**	18.6	22.3	31.7	95.1	18
Sullivan County**	15.5	32.5	34.1	99.4	7
Out-of-County Subtotal	**17.6**	**25.5**	**30.3**	**91.9**	**30**
Total	**16.0**	**21.3**	**26.6**	**73.7**	**8,554**

Note: *Newburgh is in Orange County, however, part of it is a protection district covered by Plattekill Fire District. **Aid given areas. For commercial ambulance agencies, the unit is placed 'available' when they arrive at the hospital, which may result in artificially shorter destination times.

Observations:

- Within the Ulster EMS district, the average EMS transport deployed time varied from 44.7 minutes (in Kingston City) to 94.3 minutes (in Gardiner Town).

AMBULANCE TRANSPORT RUNS BY AGENCY

In this analysis, we examined the number of transport runs with advanced life support (ALS) and basic life support (BLS) made by each agency. Table 41 shows the number of ALS and BLS transport runs made by each agency.

We classified transports as follows:

- We identified 13,221 ALS and BLS transports by using the "unit description" accompanying the transport within the CAD system. This would frequently indicate whether it was an ALS or BLS transport.
- For transports without a specified ALS or BLS service type, we focused on the unit type. If the unit was ALS-capable, we listed the transport as ALS.
- Finally, there were 1,589 transport runs that we could not identify by the above methods. We examined the CAD descriptions and by default calls described as "critical" or "unstable" were considered ALS. All others were considered BLS.

Table 41: ALS and BLS Transport Runs by Ambulance Agency

EMS Agency	ALS Transport	BLS Transport	Total
Diaz Ambulance	947	657	1,604
Ellenville Ambulance	423	611	1,034
Esopus Ambulance	177	511	688
Gardiner FD – EMS	47	115	162
Hurley FD – EMS	35	79	114
Kerhonkson – Accord First Aid Squad	92	455	547
Kingston FD*	1	1	2
Marbletown First Aid Unit	142	264	406
Mobile Life Support Services**	3,617	3,736	7,353
Modena FD – EMS	47	181	228
New Paltz Rescue Squad	704	971	1,675
Olive First Aid Unit	68	199	267
Pine Bush Ambulance***	12	58	70
Plattekill FD – EMS	70	239	309
Shandaken Ambulance	68	209	277
Shawangunk Valley FD - EMS	19	53	72
Wallkill Ambulance	49	176	225
West Hurley FD – EMS	39	87	126
Woodstock FD – EMS	259	273	532
Ulster EMS Subtotal	**6,816**	**8,875**	**15,691**
All Medivacs	77	0	77
Ambulnz	13	10	23
EMSTAR	3	5	8
Margaretville Ambulance	2	1	3
Mobile Medic	1	0	1
Other Out County – EMS	19	85	104
Out-of-County EMS Subtotal	**115**	**101**	**216**
Total	**6,931**	**8,976**	**15,907**

Note: *Kingston FD is not in the Ulster County EMS system. It has an ambulance and makes transport; **Contracting commercial service; ***Contracting out-of-county EMS provider.

Observations:

- Mobile Life Support Services, New Paltz Rescue Squad, and Diaz Ambulance made the most EMS transport runs. They made 46, 11, and 10 percent of the total transport runs, respectively.
- Out-of-county EMS agencies made up one percent of the total transport runs.
- ALS transports totaled 6,931 or 44 percent of total transport runs.

Table 42 continues to examine transport runs by EMS agency. However, it focuses on whether the agency was transporting within its local service area or provided transport beyond its service area (nonlocal transport). Nonlocal transports occur either when the local agency is unavailable or when an incident required transporting more patients than the local agency could accommodate.

Table 42: Transport Runs by Agency and Service Area

EMS Agency	Local Transport	Nonlocal Transport		Total Transport Runs	Pct. Outside Service Area
		With Local Agency	Without Local Agency		
Diaz Ambulance	1,589	2	13	1,604	0.9
Ellenville Ambulance	997	2	35	1,034	3.6
Esopus Ambulance	639	5	44	688	7.1
Gardiner FD - EMS	158	1	3	162	2.5
Hurley FD - EMS	99	0	15	114	13.2
Kerhonkson - Accord First Aid Squad	497	1	49	547	9.1
Kingston FD*	NA	0	2	2	100.0
Marbletown First Aid Squad	373	4	29	406	8.1
Mobile Life Support Services**	6,564	319	470	7,353	10.7
Modena FD – EMS	183	6	39	228	19.7
New Paltz Rescue Squad	1,326	96	253	1,675	20.8
Olive First Aid Unit	248	0	19	267	7.1
Pine Bush Ambulance***	70	0	0	70	0.0
Plattekill FD – EMS	238	2	69	309	23.0
Shandaken Ambulance	268	3	6	277	3.2
Shawangunk Valley FD - EMS	60	0	12	72	16.7
Wallkill Ambulance	201	0	24	225	10.7
West Hurley FD - EMS	112	4	10	126	11.1
Woodstock FD - EMS	499	5	28	532	6.2
Ulster EMS Subtotal	**14,121**	**450**	**1,120**	**15,691**	**10.0**
All Medivacs	NA	29	48	77	100.0
Ambulnz	NA	11	12	23	100.0
EMSTAR	NA	3	5	8	100.0
Margaretville Ambulance	NA	0	3	3	100.0
Mobile Medic	NA	1	0	1	100.0
Watchtower Farms	NA	0	0	0	100.0
Other Out County - EMS	NA	5	99	104	100.0
Out-of-County EMS Subtotal	**NA**	**49**	**167**	**216**	**100.0**
Total	**14,121**	**499**	**1,287**	**15,907**	**11.2**

Note: *Kingston FD initiated a behavioral health transport capable ambulance just as the data analysis period closed; **Contracting commercial service; ***Contracting out-of-county EMS provider.

Observations:

- 10 percent of transport runs made by Ulster County ambulance services were out of the agency's local area.
- For three percent of transport runs, a nonlocal agency assisted with transport although a local agency unit arrived.
- For eight percent of transport runs, a nonlocal agency transported a patient and no local agency unit arrived.

TRANSPORT DESTINATION

Table 43 shows the number of transports (runs) that Ulster County and out-of-county ambulances made, broken out by destination.

Table 43: Transport Runs by Destination

Destination Hospital	Total Transport	Pct. Transport
Health Alliance Hospital	8,127	51.1
Vassar Brothers Medical Center	2,718	17.1
Ellenville Regional Hospital	1,316	8.3
MidHudson Regional Hospital	1,166	7.3
Northern Dutchess Hospital	1,021	6.4
St. Luke's Cornwall Hospital	591	3.7
Garnet Health Medical Center	478	3.0
Margaretville Hospital	90	0.6
Albany Medical Center	61	0.4
Westchester Medical Center	60	0.4
Catskill Regional Medical Center	3	0.0
Bon Secours Community Hospital	1	0.0
Columbia Memorial Health	1	0.0
St. Peter's Hospital	1	0.0
Unknown*	273	1.7
Total	**15,907**	**100.0**

Note: *No destination recorded in the CAD data.

Community Perception

As part of this project, CPSM conducted an online community survey regarding EMS delivery in Ulster County. 465 respondents provided input on various aspects of EMS delivery in their community. A summary of the outcomes from the community survey are shown in Tables 44 – 48.

Table 44: Community EMS Survey Response by Jurisdiction

Jurisdiction	Responses	% of Responses
City of Kingston	31	6.7%
Town of Denning	2	0.4%
Town of Esopus	22	4.7%
Town of Gardiner	27	5.8%
Town of Hurley	20	4.3%
Town of Kingston	3	0.6%
Town of Lloyd	10	2.2%
Town of Marbletown	6	1.3%
Town of Marlborough	52	11.2%
Town of New Paltz	23	5.0%
Town of Olive	8	1.7%
Town of Plattekill	20	4.3%
Town of Rochester	38	8.2%
Town of Rosendale	23	5.0%
Town of Saugerties	75	16.2%
Town of Shandaken	6	1.3%
Town of Shawangunk	7	1.5%
Town of Ulster	63	13.6%
Town of Wawarsing	3	0.6%
Town of Woodstock	4	0.9%
Village of New Paltz	4	0.9%
Village of Saugerties	17	3.7%
Total	**464**	**100.0%**

Table 45: EMS Survey Respondents - Length of Residence in Ulster County

More than 10 years	408	87.7%
3 – 10 years	45	9.7%
Less than 3 years	12	2.6%
	465	**100.0%**

Table 46: EMS Survey Respondents - Been a patient?

Yes	123	26.5%
No	342	73.5%

Table 47: EMS Survey Respondents – Patient Satisfaction

If you have been a patient, how would you rate these aspects of the service provided to you on a Likert scale of 1-5, with 1 being least satisfied and 5 being most satisfied?

Attribute	Average Score
Interaction with the 911 dispatcher.	4.42
Timeliness of the ambulance arrival.	3.41
The medical care provided by the EMS personnel.	3.91
Extent that the EMS personnel kept you informed about your care.	4.07
The condition of the ambulance and equipment.	4.07
The ambulance billing process.	3.59
Likelihood of recommending the service to others.	3.57

Table 48: EMS Survey Respondents – Community Perception

On a scale of 1 – 5, with 5 being the highest, how would you rate the services provided to you by your EMS agency?

Attribute	Average Score
Overall reputation.	3.98
Ability to meet the community's EMS needs.	3.58
Professionalism of the staff.	4.19
Medical care provided.	4.21
Facilities and equipment.	4.09
Response time.	3.64
Overall value to the community.	4.19

EMS Community Perception Survey Open-Ended Responses

One of the most valuable parts of seeking community input regarding service delivery are the open-ended responses many respondents include in their survey. Of the 465 survey respondents, 171 (37%) provided additional comments.

The vast majority of the open-ended comments were very supportive of local EMS agencies, but indicated significant concern regarding staffing, funding and ability to respond to emergency calls.

Selected responses are included below:

My elderly mother had a fall and broke her leg earlier this year. The dispatcher on the non-emergency line was most helpful. Although it was not an emergency, the ambulance arrived within a few minutes. The crew handled her with the utmost care and respect. When we got to the ER she was immediately admitted and cared for by a team of nurses and doctors.

Fund them!

Their importance to the community is PRICELESS.

I appreciate them and all that they do. Without them the town will suffer.

Keep up the good job.

Ulster county needs a county based EMS system it's clear this free service based system is not working.

Compared to other communities/counties I've lived in throughout NYS my local community EMS service is under-funded and under-equipped.

These volunteers pay for their own uniforms. Have outdated equipment. Work in a building that is constantly in need of repair.

I'd personally love to see any other civil service function this way - let alone one that you may one day rely upon to save a family member's life.

We need more county funding for Hamlet EMS.

The county needs to create a career EMS agency. We have a highway dept, why do we contract or rely on volunteers for life saving care. We need an appropriately staffed dept of properly paid employees if we expect anything to actually change.

We have been very impressed with the speed of response and the knowledge and professionalism of the responders. Once they arrived, we felt that we were in safe and competent hands. Such a comfort and relief to have this service in New Paltz! (What was wrong with question 6 response? I couldn't enter any ratings.)

NPRS does a great service for the town, but they need more funding. People don't realize that the town barely funds them, we should do more so they can upgrade their equipment and ambulances as needed, as well as afford their paramedics.

If we can't keep good medics by paying them well, they will go work for other agencies.

We need NPRS in our community and we need to fund them better.

Pay your first responders more money. Make your townships pay for an als provider. Make volunteer agencies paid so you aren't stealing tax dollars to go 5th/6th dispatch to get an ambulance to an emergency.

The agency started receiving a district tax subsidy last year used to hire emergency responders. This investment is paying off in terms of faster service.

It is comforting to know that there is always a local ambulance crew on duty in the town. I know there is a trend toward countywide, EMS systems, but it is important that rural areas of the county have a local ambulance assigned to them, and small towns like Rochester may be overlooked in a county wide system.

Find a way to financially support EMSs in the county. They are an inseparable part of the communities' livelihood.

We need much more medical services, doctors clinics for stable long term care.

The EMS system needs to be critically evaluated and restructured. EMS throughout New York is short staffed and over ran. Pine Bush ambulance specifically, runs over 1000 calls a year, and over 80% of those calls go unanswered by Pine Bush Ambulance (their response are is within Orange and Ulster Counties). Which puts a heavy strain on other volunteer, or commercial EMS agencies to pick up their call volume, so our residents can receive emergency medical care.

There is a definite need for more EMS services throughout all of Ulster County. If local volunteer agencies are not available, the wait for a neighboring agency to respond is absolutely ridiculous.

County based EMS.

Depending on volunteers for medical care in an emergency is unrealistic in 2023. There needs to be a county based EMS system with paid personnel.

There needs to be a County EMS System like many other counties in NYS. Keep the volunteer agencies, however, ALS services and paramedics should be provided by and employed by Ulster County instead of spending millions of dollars to commercial ambulance companies that do not serve our areas needs and the growing rate of medical calls in our area. At least 4-5 County Paramedics on at all times would be fantastic.

Too many unavailable by commercial service and too many multiple dispatches for volunteer services. Even some FD's are receiving multiple dispatches to respond for EMS calls. It seems Ulster Co residents are suffering due to many times no ALS being available and long response times of volunteer BLS ambulances.

I think that there should be a countywide EMS department. Mobil life barely makes it to calls of service. County wide EMS agency is the way to go. An ambulance and paramedics stationed in each township that doesn't have ambulance service provided by the local fire departments.

ALL EMS and Paramedics MUST be paid a much higher salary in order for the jobs to attract employees. Their services are VITAL and Mobile Life's short-staffing issues will eventually lead to the death of patients. Pay them their worth! Also

Time for County wide EMS

For an all volunteer agency they provide great care. They have great membership but like every agency in the Volunteer World they are all suffering from dwindling membership.

Needs to be a countywide, paramedic service and Ambulance.

Ulster county needs more ambulances!!! Patients wait entirely too long for transport.

They should be paid.

Please make sure they have the equipment, training, and personnel needed.

Desperate need of more people.

Need pd staff. You should not have to wait for 30 minutes or more for a ambulance when your life is depending on them getting to you fast to save your live.

I understand the response time is due to it being a volunteer organization. I hope there is a way to improve it. These guys do a great job.

The Ems system in Ulster County is severely lacking in ALS support and backup service. The Gardiner Fire District has used Mobile Life Support as its backup for a long time.

The various volunteer agencies cannot meet the demand for ALS support. They do a great job in providing service but without support they are stretched thin. Gardiner now relies on New Paltz Rescue in most cases for ALS and backup service and is lukcy to have them. Not sure how long it can continue this way. County EMS????????

West Hurley is volunteer based service. Would like to see more resources for our local EMS providers.

Very slow response time (35+ minutes without anyone showing up, ended up with mutual aid ambulance from Olive)

Very slow, or no, response. Do not seem to have the staff to keep up with the calls and the need. People are going.

without critical care for too long of a period of time before someone arrives.

EMS has long been the stepchild of Ulster County emergency services. EMS responds to more calls than fire but gets no attention from local and county officials.

They need more EMT's.

Need more EMTs.

I live very close to the Fire Department. There are many calls where the whistle goes off 2 and 3 times and we do not hear the ambulance respond. The only information I have seen on calls for the Hurley Fire Department is a posting on Facebook that said there were 437 calls in 2022. We don't know how many were fire vs EMS. And we don't know how many of the 437 the fire department responded to. Or which EMS calls required Mobil Life have to respond from Kingston. The EMS team in Hurley was in the past extremely responsive. Does our EMS team need more staff (certified EMS personnel, drivers)? Other support?

Community Perception Survey Observations –

- There is broad support for the local EMS agencies and personnel in local communities.
- Many respondents are aware of the staffing and economic crisis faced by local Ulster County EMS agencies.
- Ability to meet local community needs and response times received the lowest scores in the survey.

Community Leader/Stakeholder Perception

Interviews and an online survey of community leaders and stakeholders reveal that among elected and appointed officials in Ulster County, many are aware of the challenges facing ambulance service delivery. 11 of 13 stakeholders providing feedback stated they were very or generally knowledgeable about EMS response in their community regarding topics like who the provider is, who responds, and the levels of care provided. However, only 3 of the stakeholders indicated they get regular briefings or reports from their EMS providers.

When asked about what they feel is working well regarding EMS in their local community, these were some of the responses:

- *We have a paid EMS department.*
- *Not a lot. There are good providers who really care for the patients.*
- *We have contracted with a new provider – Ambulanz.*
- *Our local fire department provides BLS first responders.*
- *Local dedicated service, however, it is volunteer.*
- *Our current contract with EMS provider and good communication channels.*
- *At least we have service.*
- *Not much.*
- *Communication between UC 911 center and local EMS.*
- *We have 24/7 ALS service and response time and service to community is good.*
- *Response time, coverage.*
- *We have Mobile life generally stationed in Kingston which helps with call response. We have a paid fire department that are all EMT's and can provide basic life support.*

When asked about the greatest challenges with EMS delivery in their community, most community leaders indicated staffing, funding, and service reliability as their greatest challenges.

- *Lack of manpower*
- *Having ambulances and providers available to respond to calls for help.*
- *The EMS System is abused for transportation of non-emergency calls.*
- *There is not enough resources to cover all the districts and calls.*
- *The mutual aid system is overloaded with coverage to other districts.*
- *The pay scale is too low.*
- *The work schedule is not conducive for a good work life balance.*
- *Staffing*
- *money, Medicare and other insurances do not pay enough to allow proper staffing of ambulances.*
- *Lack of volunteers and funding issues. The Town is divided into 3 different coverage areas.*
- *Trained personnel Staffing shortage, coverage during multiple calls.*
- *Maintaining trained staff*
- *Takes too long to turn around a call and recruiting volunteers.*
- *Labor. Not enough people entering the field.*
- *We only have (1) EMS crew and rig in Town at all times. When that rig is being used our overflow crew and rig has to come from Newburgh. Also the cost of 24/7 ALS service is expensive.*
- *Costs, recruiting and retaining employees.*
- *Private Provider has less staff and has more frequently been delayed on arriving to transport patients to the hospital.*

We also asked community leaders what they would like to see changed about the way EMS is delivered, here were some of the responses:

- *More training with local fire departments*
- *Availability. Response levels i.e.: non emergent availability to not send EMS. More ALS availability.*
- *A system that provides multiple layers of resources - meaning promote the use of First Care walk in services rather than medical transport to hospitals Ambulette services that can perform in home care for non-emergent calls - BLS transport for basic care Fly Cars for ALS intercepts.*
- *To have EMS be deemed an "essential" service like police and fire, better reimbursements so they can properly staff and supply units, stop abusive patients from wasting resources.*
- *Paid staff stationed at the agency location. Perhaps regional or county level turnout and organization.*
- *I like the coverage that we have, would like to see the cost of service reduced.*
- *Increased response times but are realistic about the staffing shortages.*
- *More uniform coverage.*
- *Response is fine.*
- *Reduced cost and a closer 2nd response crew and rig.*
- *More state aid.*
- *A more robust system will be needed in the months and years ahead to meet the growing demand for these services.*

Community Stakeholder Survey Observations –

- Most community stakeholders are aware of the staffing and funding challenges faced by their EMS agency.
- Most community leaders do not receive regular reports on the performance of their local EMS agency.
- Many community leaders identified that changes are necessary in the EMS delivery system in their local community.

Recommendation: Ulster County, working collaboratively with local community stakeholders, should establish an "EMS Advisory Committee" comprised of EMS and community leaders to learn about key issues facing the EMS delivery system in Ulster County and provide input to potential ways to enhance service delivery.

Mobile Integrated Healthcare/Community Paramedicine

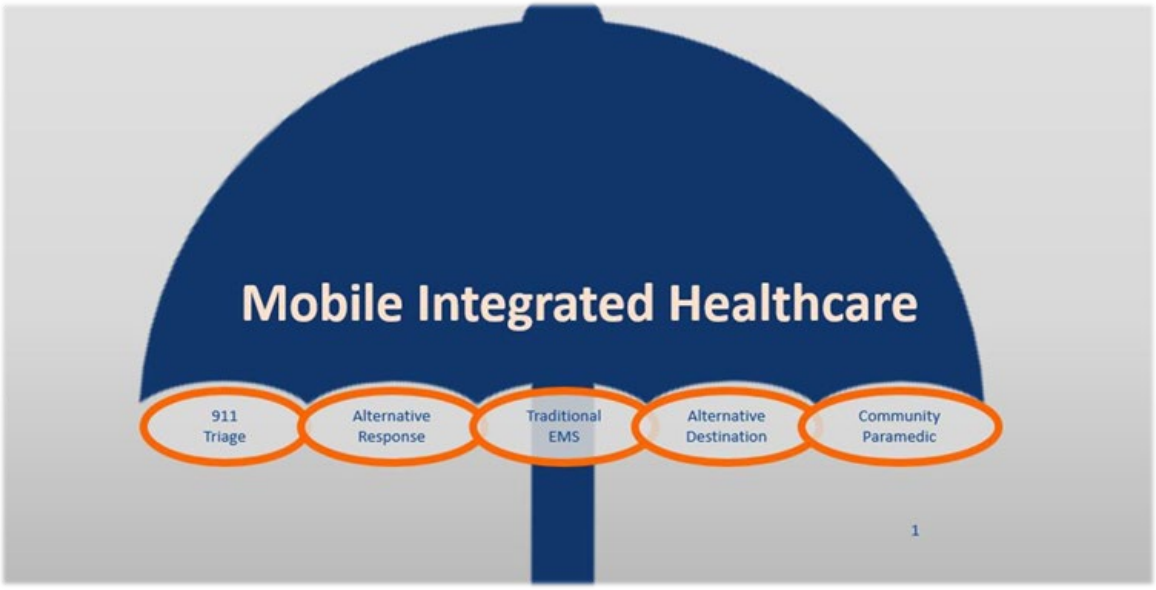
One of the fastest growing value-added service enhancements in EMS is the development of Mobile Integrated Healthcare / Community Paramedicine (MIH/CP) programs. MIH/CP is comprised of a suite of potential services that EMS could provide to fill gaps in the local healthcare delivery system. In essence, MIH/CP is intended to better manage the increasing EMS call volume and better align the types of care being provided with the needs of the patient. To be effective, MIH/CP is commonly accomplished in a collaborative approach with healthcare and social service agencies within the community.

We believe that there are opportunities for agencies within Ulster County to use existing service capacity to collaborate with local stakeholders to implement an MIH/CP program to help manage the navigation of patients to treatment options more efficiently.

This could be an effective way to address high 911 system utilizers, prevent volunteer and career agency burnout from responding to multiple low-acuity medical calls, and create stronger relationships with hospitals.

The New York State Senate and Assembly approved Community Paramedicine legislation in June 2023. This legislation will establish a community-based paramedicine demonstration program to operate with the same flexibility authorized under Executive Order Number 4 of 2021, and in the same manner and capacity as currently approved for a period of two years. We would encourage Ulster County to monitor the progress of this legislation and, if possible, pursue this service line to the benefit of Ulster County residents.

Recommendation: Ulster County, and its EMS agencies, monitor current legislative activity related to MIH/CP services, and should explore ways to implement an MIH/CP program using existing staffed ambulance and/or fly car response capacity.



Ambulance Operations Safety enhancement – Reducing Lights and Siren Responses

For EMS, the purpose of using a lights and siren (L&S) response is to improve patient outcomes by decreasing the time to care at the scene or to arrival at a hospital for additional care, but only a small percentage of medical emergencies have better outcomes from L&S use. Over a dozen studies show that the average time saved with a HOT response or transport ranges from 42 seconds to 3.8 minutes. Alternatively, L&S response increases the chance of an EMS vehicle crash by 50% and almost triples the chance of crash during patient transport.

Emergency vehicle crashes cause delays to care and injuries to patients, EMS practitioners, and the public. These crashes also increase emergency vehicle resources use through the need for additional vehicle responses, have long-lasting effects on the reputation of an emergency organization, and increase stress and anxiety among emergency services personnel.

In 2009, there were 1,579 ambulance crash injuries in the United States, and most EMS vehicle crashes occur when driving with L&S. When compared with other similar-sized vehicles, ambulance crashes are more often at intersections, more often at traffic signals, and more often with multiple injuries, including 84% involving three or more people.

Although L&S response is currently common to medical calls, a few (6.9%) of these result in a potentially lifesaving intervention by emergency practitioners. Some agencies have used an evidence-based or quality improvement approach to reduce their use of L&S during responses to medical calls to 20-33%, without any discernable harmful effect on patient outcome.

Additionally, many EMS agencies transport very few patients to the hospital using L&S.

EMD protocols have been proven to categorize requests safely and effectively for medical response by types of call and level of medical acuity and urgency.

Emergency response agencies have successfully used these EMD categorizations to prioritize the calls that justify a L&S response.

Physician medical oversight, formal quality improvement programs, and collaboration with responding emergency services agencies to understand outcomes is essential to effective, safe, consistent, and high-quality EMD.

In most settings, a L&S response or transport saves less than a few minutes during an emergency medical response, and there are few time-sensitive medical emergencies where an immediate intervention or treatment in those minutes is lifesaving. These time-sensitive emergencies can usually be identified through utilization of high-quality dispatcher call prioritization using approved EMD protocols. For many medical calls, a prompt response by EMS practitioners without lights and siren provides high-quality patient care without the risk of lights and siren-related crashes.

A joint position paper published by 14 national EMS, fire, and physician professional associations[6] encourages communities to reduce L&S responses to 30% of 911 EMS calls, and no more than five percent of patient transports.

[6] https://www.ems1.com/ambulance-safety/articles/14-groups-issue-joint-statement-on-ems-use-of-lights-sirens-AAfswfKx2gaog3dy/

Ulster County's 911 Public Safety Answering Point (PSAP) currently provides EMD, and they should work with area agencies and their medical directors to review patient outcomes based on care provided on scene and crosswalk this data with EMD determinants to try and reduce the incidence of L&S response to no more than 30% of overall responses.

Recommendation: Ulster County, in collaboration with local EMS agencies, should review existing response procedures and undertake a process to reduce HOT ambulance responses to less than 30% of overall EMS responses.

EMS Performance Measures & Quality

Clinical Quality Metrics

Most communities evaluate the effectiveness of an EMS system based on response times. However, as stated previously, for most EMS responses, elapsed time is not a critical factor in the patient's outcome.

A position statement developed by the 2007 consortium of U.S. Metropolitan Municipality EMS Medical Directors[7] cited that in many jurisdictions, response-time intervals for advanced life support units and resuscitation rates for victims of cardiac arrest are the primary measures of EMS system performance. However, the association of the former with patient outcomes is not supported explicitly by the medical literature, while the latter focuses on a very small proportion of the EMS patient population and thus does not represent a sufficiently broad selection of performance measures.

Ulster County, along with community and healthcare stakeholders should establish an "*EMS System Performance Committee*" comprised of EMS agency leadership, Medical Directors, hospital emergency department medical directors, and community stakeholders (elected and appointed officials, hospital administrators, community leaders, first responders) to undertake a process to identify key performance indicators that should be used to measure the clinical and operational effectiveness of the EMS system.

Developing and reporting clinical bundle for conditions such as cardiac arrest, advanced airway management, ST-Elevation Myocardial Infarction (STEMI), Stroke, Trauma could be a very effective method for identifying opportunities to improve key clinical performance, as well as demonstrate to local communities the clinical quality being provided by their EMS agencies.

Examples of clinical bundles are represented below.

7. "Evidence-based performance measures for emergency medical services systems: a model for expanded EMS benchmarking." *Prehosp Emerg Care*. 2008 Apr-Jun;12(2):141-51

Clinical Bundle Performance Dashboard

Agency:

Ventilation Management	Goal	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Current Avg.	Goal
% of cases with etCO2 use for non-invasive ventilation management (CPAP, BVM) when equipped										
% of cases with etCO2 use for invasive ventilation management (KA, ETT, Cric)										
% of successful ventilation management as evidenced by etCO2 waveform throughout the case										
% of successful King Airway placement										
% of successful endotracheal tube placement										
System response time < 5 mins for Dispatch-presumed compromised airway										

STEMI	Goal	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Current Avg.	Goal
% of suspected STEMI patients correctly identified by EMS										
% of suspected STEMI patients w/ASA admin (*in the absence of contraindications)*										
% of suspected STEMI patients w/NTG admin (*in the absence of contraindications)*										
% of suspected STEMI patients with 12L acquisition within 10 minutes of patient contact										
% of suspected STEMI patients with 12L transmitted within 5 minutes of transport initiation										
% of suspected STEMI patients with PCI facility notified of suspected STEMI within 10 minutes of EMS patient contact										
% of patients with Suspected STEMI Transported to PCI Center										
% of suspected STEMI patients with EMS activation to Cath Lab intervention time < 90 minutes										

Stroke	Goal	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Current Avg.	Goal
% of suspected Stroke patients correctly identified by EMS										
% of suspected Stroke patients w/BGL measured										
% of suspected Stroke patients w/CSS measured										
% of suspected Stroke patients w/positive CSS scores receiving Los Angeles Motor Score (LAMS) measured										
% of suspected stroke patients with stroke facility notified of suspected stroke within 10 minutes of EMS patient contact										
% of suspected stroke patients w/LAMS scores 4 - 5 transported to Comprehensive Stroke Center										

Trauma	Goal	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Current Avg.	Goal
% of patients meeting Trauma Alert criteria correctly identified by EMS										
% of suspected Trauma Alert patients with trauma facility notified of trauma alert within 10 minutes of EMS patient contact										
% of suspected Trauma Alert patients with scene time < 10 minutes (*in the asbsence of extrication delay*)										

Recommendation: Ulster County, along with community and healthcare stakeholders, should establish an "*EMS System Performance Committee*" to establish, collect and report EMS clinical performance metrics.

FUTURE EMS NEEDS

EMS systems across America are struggling. The staffing and economic crisis in EMS are exceptionally challenging for rural EMS systems. Since 2021, 64 EMS agencies in the United States have closed due to the combination of staffing and funding challenges. Volunteers are becoming especially difficult to find to help provide reliable EMS services and communities are facing difficult decisions regarding ambulance service availability, with many needing to provide additional funding to help ensure essential ambulance service delivery.

Ulster County, its communities and community leaders are at a crossroad. Data examined by CPSM has identified six ambulance agencies in Ulster County which currently respond to less than 70% of their requests for service. While other agencies, especially those that have chosen to hire personnel to fill ambulance staffing needs, are able to maintain response reliability, those agencies are being relied upon more frequently to respond as a mutual aid agency for neighboring communities who are not able to respond to EMS calls in their primary service area.

The extensive use of mutual aid is not an ideal solution to staffing and response challenges for the following reasons:

- It extends ambulance response times.
- It takes resources away from the local community when limited resources are used to provide mutual aid to other communities.
- This is especially challenging when local communities pay for local services using tax funding, but those resources are shared with other communities that are not funding the ambulance response system.

As mentioned earlier in this report, during interviews, town hall meetings, and an online survey, every ambulance agency indicated challenges with staffing and funding for their agency. With the current labor and financial climate, it is unlikely that without significant investment in the EMS system in Ulster County, service delivery challenges will continue, or even get worse in the coming years.

Future EMS Response Volume

Like many rural counties in New York, Ulster County's population has been experiencing a near zero population growth over the past decade. In 2010, the population of Ulster County, according to the Census Bureau, was 182,422. Ulster County's estimated 2022 population was 182,319 with a growth rate of 0.3% in the past year according to the most recent United States census data.

Among six age groups — 0 to 4, 5 to 19, 20 to 34, 35 to 49, 50 to 64, and 65 and older — the 65+ group was the fastest growing between 2010 and 2021 with its population increasing 39.7%. The 35 to 49 age group declined the most dropping 14.4% between 2010 and 2021. The share of the population that is 0 to 4 years old decreased from 4.9% in 2010 to 4.3% in 2021.

The share of the population that is 65 and older increased from 14.9% in 2010 to 20.8% in 2021.

In determining future EMS response volume, we analyzed the current county-wide response volume using a response rate per capita in Ulster County. For 2022, the most relevant year for this analysis, the EMS response rate was 0.1289, or 129 EMS responses per year for every 1,000 population in Ulster County. This was derived by dividing the 2022 countywide EMS response volume (23,492) by the 2022 U.S. Census bureau population data for the County (182,319)[8].

Using this data analysis, we can project the anticipated countywide ambulance response and transport volume in Table 49:

Table 49: Projected EMS Response, Run and Transport Volume 2023-2026

	2023	2024	2025	2026
County Population Served	182,865	183,414	183,964	184,516
EMS Responses - **County-Wide**	23,562	23,633	23,704	23,775
Daily EMS Responses - **County-Wide**	65	65	65	65
EMS Transports - **All County Agencies**	15,103	15,151	15,171	15,240
Daily EMS Transports - **All County Agencies**	41	42	42	42
County-Wide Transport %	64.1%	64.1%	64.1%	64.1%

This analysis predicts a relatively stable EMS response volume in the county, even considering an aging population.

Ambulance Staffing Level

As Ulster County, its communities, leaders, and EMS agencies consider options for future EMS delivery in the county, it's prudent to predict the anticipated EMS response volume (demand) and the likely number of ambulance resources that will likely be needed to effectively service that demand. Working collaboratively, community leaders should ensure appropriate ambulance resources for the residents and visitors of Ulster County.

As mentioned earlier in this report, the population of Ulster County is predicted to remain essentially unchanged for several years. Using population changes anticipated over the next few years, we can derive a recommended total number of ambulances that should be routinely staffed in Ulster County to provide reliable ambulance service coverage for its residents and visitors.

One method for measuring recommended ambulance staffing is Unit Hour Utilization (UHU). UHU is a measure of activity, essentially measuring the amount of on-duty time that an ambulance is assigned to a response.

A Unit Hour is defined as one unit, fully staffed, equipped and available for a response. For example, one unit on-duty, 24 hours per pay, 365 days per year equates to 8,760-unit hours (1 x 24 x 365). The UHU is then derived by dividing the number of responses by the total number of unit hours.

[8] https://www.census.gov/quickfacts/fact/table/ulstercountynewyork/PST045222

Industry best practice is a UHU of 0.300 for ***urban*** agencies, however, rural communities have unique challenges with distance and task times that impact ambulance activity. Most commonly, a UHU 0.175 to 0.200 provides an adequate balance of workload and response time reliability.

Based on anticipated response and transport volume and using a desired UHU of 0.175 for services in Ulster County, we can derive the Unit Hour staffing recommendations illustrated in Table 50.

Table 50: Recommended County-Wide Ambulance Staffing

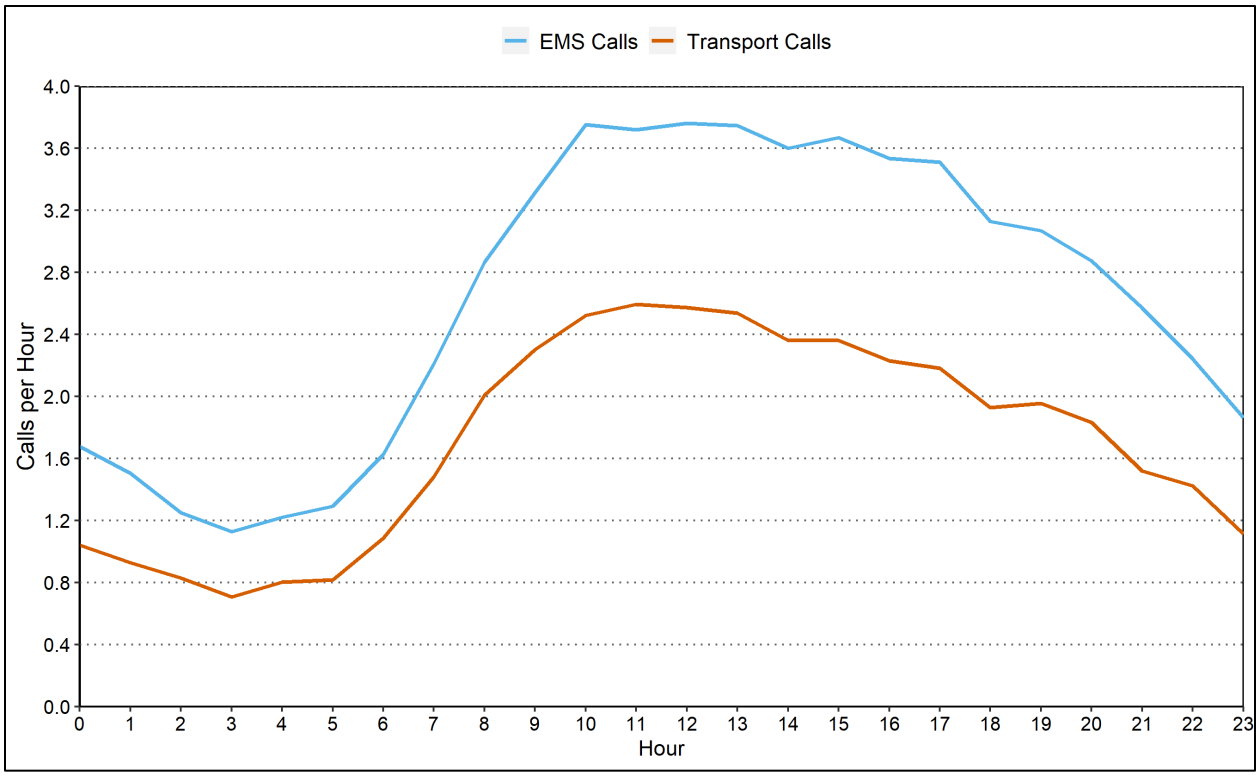
	2023	2024	2025	2026
EMS Transports - All County Agencies	15,316	15,361	15,408	15,454
Average Transport Task Time (Minutes)	76.8	76.8	76.8	76.8
Consumed Annual Unit Minutes	1,809,589	1,815,017	1,820,463	1,825,927
Consumed Annual Unit Hours	30,160	30,250	30,341	30,432
Recommended Unit Hour Utilization	0.175	0.175	0.175	0.175
Recommended Annual Unit Hours Needed	172,342	172,859	173,377	173,898
Recommended Daily Staffed Unit Hours	472.2	473.6	475.0	476.4
Recommended Staffed Ambulanced Needed per Day	19.7	19.7	19.8	19.9

Notes: *Consumed Annual Unit Hours ÷ the Recommended UHU. **Annual Unit Hours ÷ 365 days.
***Recommended Unit hours ÷ 24 hour ambulance shift

Flexible Ambulance Production Strategy

As demonstrated in Table 36 and Figure 14, EMS response volume varies greatly between daytime and nighttime hours. During the study period, EMS responses per hour peaked between noon and 1:00 p.m., averaging 3.8 calls per hour and were lowest between 3:00 a.m. and 4:00 a.m., averaging 1.1 calls per hour.

For this reason, ambulance staffing should follow a similar pattern, with more units staffed during the day than in the evening. For this reason, a reasonable approach to ambulance service delivery should be based on using a flexible ambulance production strategy that results in more ambulances being on duty during daytime hours. The most logical way to achieve this strategy would be to use staggered 12-hour shifts that overlap midday to late afternoon.


EMS Calls
Transport Calls
Calls per Hour
4.0
3.6
3.2
2.8
2.4
2.0
1.6
1.2
0.8
0.4
0.0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Hour

Special Note: Attaining a Municipal Certificate of Need to Operate an Ambulance Service

Options three through seven will require that Ulster County apply for and obtain a Municipal Certificate of Need (CON) to operate an ambulance agency. It is our recommendation that regardless of the option(s) the county feels are most appropriate to meet the future ambulance service needs of Ulster County, the county should apply for and obtain a Municipal CON.

Option 1: Maintain Status Quo

The county could choose to take no action to intervene in the EMS and ambulance delivery system in Ulster County.

However, the current state, and future state, without significant modification, will continue to suffer service failures. Trends like reductions in the volunteer and career EMS workforce are well researched and documented and will likely exacerbate in the years to come.

Based on our review and analysis, given the current state of EMS and ambulance delivery in Ulster County, taking no action is a dangerous option.

Advantages	Disadvantages
Easy to implement	Current system will continue to fail
Requires no action	Places residents and visitors at risk

Option 2: Provide Financial Subsidy to Existing Provider Agencies

Some, but not most of the service delivery challenges within most of the agencies servicing Towns and Villages could be helped with funding from the County.

However, the feedback from many of the agencies is that their primary issue is lack of volunteers. Funding to provide meaningful support for ambulance operations would likely go directly to compensating personnel. This compensation could come in the form of stipends for on-call personnel, pay for covering actual calls, or perhaps paying wages for coverage either during peak times, or times that are difficult to cover with volunteer shifts.

While it is possible that paid and volunteer members of ambulance agencies can co-exist, often, approaches such as these tend to lead to a further decline in volunteerism, as friction is created between those volunteering and those getting paid for their time. Volunteers eventually either stop volunteering, or transition to a paid, or paid on-call position. This leads to further costs and is still a less than optimal solution.

One of the challenges with Ulster County's ambulance system is the number of different agencies, each with very low response and transport volumes. Individually funding these numerous agencies is a very inefficient use of public funding and would not be a reasonable option unless agencies were willing to consolidate services to become more clinically proficient and operationally effective.

Advantages	Disadvantages
May lead to more reliable agency staffing	Funding multiple agencies with low call volumes is not the most economically efficient model.
Uses existing agency infrastructure	May not result in enough incentive to attract additional volunteers or paid staff.
May be less expensive than some other options	Agencies that do not receive county funding may challenge the policy decision and request similar funding.

Option 3: Countywide ALS 'Fly Car' Model

Ulster County could develop and staff a county-based, countywide ALS fly car system, staffing ALS providers in single person response units. Much like the Safety Net ambulance model, the ALS fly car could response as additional support for agencies that currently experience a less than 70% response rate for EMS calls. There are several opportunities and challenges with this potential model.

Advantages	Disadvantages
Assure a resource is responding to provide medical assistance.	Does not resolve the fundamental issue of an *ambulance* response to areas of the county facing staffing and response challenges.
ALS availability will be enhanced.	Little opportunity for revenue/cost recovery generation using the 'paramedic intercept' model as most insurers do not pay for paramedic intercept, but rather, transport to an ED.
Could provide a second provider on scene in the even the local ambulance provider can only muster one personnel to respond to the call – completing an ambulance staffing requirement for transport to a hospital.	If the fly car medic is required to transport a BLS patient to the ED due to limited response from the local ambulance, the ALS resource is not available for other responses.
The cost of operating this system will be about half the cost of providing the full ambulance model.	If the fly car medic is delayed on scene awaiting response from another provider, that medic is not available for other calls in the region/county.

Option 4: Funding to Enhance Response Areas of Ambulance Agencies

Our data analysis reveals that some ambulance agencies in Ulster County, primarily those with paid staff, are delivering reliable service to their communities. And many are also providing mutual aid to neighboring communities. The county, working collaboratively with existing providers, could create ambulance response districts and fund agencies to provide automatic aid beyond their existing official jurisdictional boundaries.

For example, Woodstock FD-EMS has a combination of career and volunteer staffing. Paramedics are paid, and they are augmented with local volunteers to help staff ambulances for calls. Woodstock FD-EMS currently responds to 97.7% of the responses in their primary service area and do provide some mutual aid to surrounding areas. The county could provide funding for Woodstock allowing them to perhaps augment their staffing with a paid EMT around the clock to fully staff an ALS ambulance. A condition of the county funding would be that Woodstock would be automatic aid for all calls in the Hurley and West Hurley response areas.

The combined response volume for Woodstock and West Hurley in 2022 was 1,135 responses. The average time on task for ambulance calls that resulted in a transport was 76 minutes. The response UHU for the Woodstock regional ambulance unit would be 0.130 (1,135 responses ÷ 8,760 staffed Unit Hours), and the time on task UHU would be 0.164 (1,437 committed hours ÷ 8,760 staffed Unit Hours). This projected activity level would be very reasonable but may dramatically enhance the ambulance service availability to the region.

Using the wage rate provided by Ulster County of $28.50/hour for an EMT, the cost of staffing one EMT around the clock would be $135,381, including benefits and overtime. A variation of this model would be using an analysis of response volume trends for the region, as well as volunteer availability, to tailor EMT staffing to cover the busiest hours, or the hours most difficult for volunteers to cover. For example, weekdays from 9a – 9p. Under that staffing model, the number of unit hours funded by the county would be 3,120 (12 hours a day, 5 days a week, 52 weeks a year), or a total cost of $104,437 annually.

Similar regional partnerships could be considered for New Paltz to cover Gardiner, and Modena's response areas.

Advantages	Disadvantages
Potentially enhances ambulance response coverage into areas with low response reliability.	Local agencies and jurisdictions may be resistant to the proposal.
Relatively economically efficient by using existing systems in place.	Could by legally complex establishing service level agreements between the county and the local agencies.
Potentially enhances clinical proficiency of existing providers through increased response volume.	

Option 5: Ulster County as a Regional Ambulance Staffing Resource

This option is a hybrid combination of the county providing the actual safety-net ambulance service but uses only the staffing model and use of existing ambulance resources to provide regional coverage.

An example of this model could be augmented county staffing to serve the southeastern part of the county that seems to be struggling the most responding to ambulance calls. In 2022, the combined primary services area for Gardiner FD-EMS, Modena FD-EMS, and Pine Bush Ambulance on Ulster County's southern area generated 1,224 ambulance responses. Of these, only 687 (56.1%) received a response from the local agencies.

The county could provide ALS staffing with one EMT and one paramedic and use the ambulances from one or all those agencies to provide a dedicated regional resource for those response areas. As part of the arrangement, the local agencies would provide the ambulance, fuel, equipment, and supplies, with the county supplying the staff. This would reduce the cost to the county by not purchasing ambulances and equipment, but the residents in those areas would likely have significantly improved ambulance service reliability.

Like the flexible deployment models described earlier, the county staffing of the regional resources could either be full time or be determined through an analysis of response frequency with volunteer availability.

Advantages	Disadvantages
Helps assure staffing resource to enhance response capability.	Not all areas of the County get the benefit of the service.
If staffed at the ALS level, ALS availability will be enhanced.	EMS Leadership and authorities having jurisdiction may not desire to establish this model.
Under the shared model, the cost of operating this system will be less than providing the full ambulance model, since the infrastructure costs would be covered by the partnering agencies.	Challenges with ALS Operating Certificates on BLS ambulances that are owned by another agency.
Could contract with existing CON holders to provide the services, like in Option 4. Having multiple contracts would better ensure that if one of the agencies cease to exist, the others can fill the void.	Potential fleet maintenance and logistical complexities.
The partnerships would be with community recognized personnel and vehicles.	Not all areas of the County get the benefit of the service.

Table 51: Example County Cost Analysis – 24/7 Deployment Regional Staffing Model

Ambulance Personnel	Rate	#	Reg. Hours	Regular Wages	Overtime Rate	Unsch. Overtime	Training Hours	Overtime Wages	Total Wages	Benefit %	Benefit Expense	Total Expense
A-Shift Ambulance 1 EMT (24/48 Shift)	$28.50	1	2,880	$82,080	$42.75	100	10	$4,703	$86,783	56%	$48,598	$135,381
B-Shift Ambulance 1 EMT (24/48 Shift)	$28.50	1	2,880	$82,080	$42.75	100	10	$4,703	$86,783	56%	$48,598	$135,381
C-Shift Ambulance 1 EMT (24/48 Shift)	$28.50	1	2,880	$82,080	$42.75	100	10	$4,703	$86,783	56%	$48,598	$135,381
A-Shift Ambulance 1 Paramedic (24/48 Shift)	$32.50	1	2,880	$93,600	$48.75	100	20	$5,850	$99,450	56%	$55,692	$155,142
B-Shift Ambulance 1 Paramedic (24/48 Shift)	$32.50	1	2,880	$93,600	$48.75	100	20	$5,850	$99,450	56%	$55,692	$155,142
C-Shift Ambulance 1 Paramedic (24/48 Shift)	$32.50	1	2,880	$93,600	$48.75	100	20	$5,850	$99,450	56%	$55,692	$155,142
Personnel Expense												**$871,568**

Table 52: Example County Cost Analysis – Flexible Deployment Regional Staffing Model

Ambulance Personnel	Rate	#	Reg. Hours	Regular Wages	Overtime Rate	Unsch. Overtime	Training Hours	Overtime Wages	Total Wages	Benefit %	Benefit Expense	Total Expense
A-Shift Ambulance 1 EMT (24/48 Shift)	$28.50	1	2,184	$62,244	$42.75	100	10	$4,703	$66,947	56%	$37,490	$104,437
B-Shift Ambulance 1 EMT (24/48 Shift)	$28.50	1	2,184	$62,244	$42.75	100	10	$4,703	$66,947	56%	$37,490	$104,437
A-Shift Ambulance 1 Paramedic (24/48 Shift)	$32.50	1	2,184	$70,980	$48.75	100	20	$5,850	$76,830	56%	$43,025	$119,855
B-Shift Ambulance 1 Paramedic (24/48 Shift)	$32.50	1	2,184	$70,980	$48.75	100	20	$5,850	$76,830	56%	$43,025	$119,855
Ambulance 1 Personnel Expense												**$ $448,583**

Option 6: Safety-Net Countywide ALS Ambulance Service – Private Provider/Contracted Model

The county could establish a countywide safety-net ambulance provider, either within the county using county employed personnel (discussed in Option 7), or competitively select a private provider through a Request for Proposals (RFP) process.

The most effective use of a countywide safety-net ambulance provider would be simultaneously dispatched to all EMS calls in communities that are served by an ambulance agency that is unable to muster a crew for a response of more than 30% of their responses. If the local agency was able to muster a crew for response, the county unit could be canceled, or, if the responding ambulance crew is a Basic Life Support (BLS) crew, but the call type is such that the patient may require Advanced Life Support (ALS) care, the countywide safety-net ambulance could be requested to continue to the call to provide a paramedic intercept for the BLS crew.

Based on the data analyzed, the County Safety-Net service would likely be simultaneously dispatched to an EMS response in the service areas of Gardiner FD-EMS, Hurley FD-EMS, Modena FD-EMS, Pine Bush Ambulance, Shawangunk Valley FD – EMS and West Hurley FD – EMS. These agencies represent the agencies that are currently responding to fewer than 70% of their dispatched EMS calls.

Table 53: Ambulance Agencies Responding to Less Than 70% of EMS Dispatched Calls

Service Area	Staffing Configuration	Calls in Area	Agency Responded	% Responded	Agency Arrived	% Arrived
Gardiner FD – EMS	Volunteer	477	290	60.8	280	58.7
Hurley FD – EMS	Volunteer	236	155	65.7	153	64.8
Modena FD – EMS	Volunteer	451	297	65.9	291	64.5
Pine Bush Ambulance**	Volunteer	296	100	33.8	94	31.8
Shawangunk Valley FD – EMS	Volunteer	140	97	69.3	92	65.7
West Hurley FD – EMS	Volunteer	273	188	68.9	184	67.4

Based on the 2022 response data, simultaneous dispatches in these service areas would result in 1,873 dispatched EMS responses, with the countywide ALS safety-net resource likely arriving first on 746 (40%) of the EMS responses.

A countywide ALS safety-net resource could also be dispatched to any call in the county in which the primary provider has not responded within a defined activation period. For example, if "Agency A" is dispatched to a call, but after 3 minutes has not indicated a response, a county unit could be dispatched to help ensure an ambulance is responding to the call. If "Agency A" is able to respond prior to the county arriving, the county unit could be canceled, or continue, if there is the potential need for ALS care at the scene and "Agency A" has a BLS crew.

It is very likely that a contracted safety-net provider would require a public subsidy, since the revenue generated from fees for services will not cover the costs for the necessary ambulance unit hours required to provide reliable safety net ambulance service (**see Tables 54 – 57**). A subsidy amount in excess of $500,000 annually would likely be required.

An advantage to selecting a provider through an RFP process is that regional ambulance providers may be able to offer the service at a slightly lower fee due to the synergies associated with providing other services in the region. Also, in most cases, personnel costs, which account for the majority of service delivery costs, may be lower for a private service, compared to a public agency.

We would caution that the private ambulance industry is suffering even greater economic and staffing challenges than government-based providers and may have difficulty recruiting and retaining staff for this model. Challenges exist with the sustainability of such arrangements.

However, the potential economic risk to the county would be lower in a contracted model, at least in the short-term.

Advantages	Disadvantages
Provides significant response capacity enhancement countywide, specifically to communities with low response reliability.	Services would likely operate with a deficit of at least $600,000 that would require public subsidy.
Establishes county-based service that could potentially be expanded as communities desire to join the county system.	May pull staff from existing providers in Ulster, exacerbating staffing challenges for other providers.
A contracted provider could likely operate at a lower cost than a county-operated model.	Commercial ambulance providers are at greater risk of market volatility and service delivery challenges.

Option 7: Safety-Net Countywide ALS Ambulance Service – County Operated Model

The county could establish a countywide safety-net ambulance provider using county employed personnel.

As described in Option 6, the most effective use of a Countywide provider would be simultaneously dispatched to all EMS calls in communities that are served by an ambulance agency that is unable to muster a crew for a response of more than 30% of their responses. If the local agency was able to muster a crew for response, the county unit could be canceled, or, if the responding ambulance crew is a Basic Life Support (BLS) crew, but the call type is such that the patient may require Advanced Life Support (ALS) care, the County ALS unit could be requested to continue to the call to provide a paramedic intercept for the BLS crew.

The County ALS Safety-Net resource could also be dispatched to any call in the county in which the primary provider has not responded within a defined activation period. For example, if "Agency A" is dispatched to a call, but after 3 minutes has not indicated a response, a county unit could be dispatched to help ensure an ambulance is responding to the call. If "Agency A" is able to respond prior to the county arriving, the county unit could be canceled, or continue, if there is the potential need for ALS care at the scene and "Agency A" has a BLS crew.

It is very likely that a county-operated safety-net provider would operate at a financial loss, since the revenue generated from fees for services will not cover the costs for the necessary ambulance unit hours required to provide reliable safety net ambulance service (**see Tables 54 – 57**). A deficit in excess of $800,000 annually would likely result.

Countywide ALS Safety-Net Service Economic Model

The costliest component of ambulance service delivery is the cost of readiness, that is, staffing units that are not on a call, to be available, to respond in a reasonable time. This option will require the county to staff, or contract for, a single ALS ambulance 24 hours/day, 365 days a year. It is typical in rural EMS systems that the potential revenue generated from user fees will be less than the cost of staffing the ambulance, which would require funding from non-user fees to sustain the safety net model. However, there are operational efficiencies in economies of scale where larger areas are covered by that one unit.

An example economic model is illustrated below.

Table 54: Personnel Expense – County ALS Safety Net Ambulance

Ulster County, NY

Ambulance Staffing/Personnel Expense

2024

Ambulance Personnel	Rate	#	Reg. Hours	Regular Wages	Overtime Rate	Unsch. Overtime	Training Hours	Overtime Wages	Total Wages	Benefit %	Benefit Expense	Total Expense
A-Shift Ambulance 1 EMT (24/48 Shift)	$28.50	1	2,880	$82,080	$42.75	100	10	$4,703	$86,783	56%	$48,598	$135,381
B-Shift Ambulance 1 EMT (24/48 Shift)	$28.50	1	2,880	$82,080	$42.75	100	10	$4,703	$86,783	56%	$48,598	$135,381
C-Shift Ambulance 1 EMT (24/48 Shift)	$28.50	1	2,880	$82,080	$42.75	100	10	$4,703	$86,783	56%	$48,598	$135,381
A-Shift Ambulance 1 Paramedic (24/48 Shift)	$32.50	1	2,880	$93,600	$48.75	100	20	$5,850	$99,450	56%	$55,692	$155,142
B-Shift Ambulance 1 Paramedic (24/48 Shift)	$32.50	1	2,880	$93,600	$48.75	100	20	$5,850	$99,450	56%	$55,692	$155,142
C-Shift Ambulance 1 Paramedic (24/48 Shift)	$32.50	1	2,880	$93,600	$48.75	100	20	$5,850	$99,450	56%	$55,692	$155,142
EMS Coordinator (P/T = 1/2 FTE)	$40.00	1	1,040	$41,600	$40.00		20	$800	$42,400	0%	$0	$42,400
Ambulance 1 Personnel Expense												**$913,968**

In addition to the personnel expense, the costs for daily operations, including capital, equipment, supplies, fuel, maintenance and other expenses would be incurred. An example of these expenses is illustrated below:

Table 55: Operational Expenses – County ALS Safety Net Ambulance

Ulster County, NY

Ambulance Operations Expense

Item	Capital Expense	Number Needed	Capital Outlay	Useful Life (Years)	Annual Expense
Ambulance	$325,000	2	$650,000	5	$130,000
Cardiac Monitor	$45,000	2	$90,000	5	$18,000
Auto-Load/Power Cot	$35,000	2	$70,000	5	$14,000
Vehicle & Portable Radios	$1,500	4	$6,000	4	$1,500
Mobile Computers	$1,750	3	$3,500	3	$1,167
Annual Depreciation Expense			**$819,500**		**$ 164,667**

Annual Responses	746
Annual Transports	597

Category	Annual Miles	Miles Per Gallon	Gallons	Price	Total
Fuel	29,840	5	5,968	$4.25	$25,364

	Annual Miles	Cost per Mile	Total
Maintenance/Tires	29,840	$0.41	$12,234

	Per Response	Responses	Total
Medical Supplies	$21.00	746	$15,666
Equipment Maintenance	$3.50	746	$2,611

Total Annual Operations Expense	**$ 55,875**

Combining the personnel expenses with operations expenses reveals the following costs for one staffed ambulance.

Table 52: Operational Expenses – County ALS Safety Net Ambulance

Expense	2024
Personnel	$913,968
Vehicles/Equipment	$164,667
Operations	$55,875
Sub-Total	**$1,134,510**
Billing Fees @ 4.5% collected Revenue	$15,657
Total Expenses	**$1,150,167**
Staffed Unit Hours	8,760
Expense Per Staffed Unit Hour	**$108.55**
Transports	597
Cost per Transport	**$1,592.78**

Fee For Service Revenue

The County ALS ambulance would be eligible to charge fees for the service provided. Revenue Cycle Management for ambulance service delivery is complex. Revenue from ambulance service is generally based on four factors: ambulance fee schedule, payer mix, transport volume and loaded mileage, and service mix (ALS/BLS, emergency/non-emergency).

The County would establish a schedule of ambulance fees and those fees can have an impact on revenue collected per transport. Generally, the higher the fee, the higher the net revenue collected from services provided. Some communities become concerned about the financial impact to local residents, but the reality of ambulance fee schedules is that they have very little impact on the majority of patients serviced by the EMS system, as will be explained more fully in the Payer Mix section of this report.

Medicaid is a state government payer that also reimburses ambulance providers based on a state fee schedule. Like Medicare, Medicaid patients cannot be 'balance billed' for amounts different than the Medicaid fee schedule.

Patients without insurance coverage generally do not pay their ambulance bill, and most ambulance providers report a less than 5% collection rate for patients without insurance.

An additional expense to the County for ALS service is the cost for the billing contractor. Billing agencies are generally paid based on a percentage of the fees collected. While it would be permissible to account for this cost as a reduction in revenue collected, it is more transparent to show this expense as a cost-of-service delivery. An estimate of the likely billing fees is depicted above in Table 53.

The regional average service fees for the Ulster County region are indicated below in Table 55.

Table 53: Ambulance Service Regional Fees – Ulster County

2023 Fees:	Region
ALS -E	$1,445
BLS – E	$874
ALS -2	$1,694
ALS - Non-Emergency	$941
BLS - Non-Emergency	$696
Mileage	$22

Source: Quick Med Claims Billing Agency

Payer mix is defined as the percentage of patients who are covered by major payer categories. *Medicare* pays a fixed amount, based on the 'allowable' fee determined regionally by the Centers for Medicare and Medicaid Services (CMS). The allowable amounts are revised annually in January. As a condition of receiving Medicare payments, providers are prohibited from 'balance billing' patients for the difference between the provider's published fee, and the 'Medicare Allowable' fee, with the exception of any deductibles or co-insurance, but only up to the actual regional allowable Medicare fee. Therefore, patients covered by Medicare have little to no out of pocket expense for ambulance service. Unfortunately, the Medicare allowed amount is generally less than the cost of providing the service, and that is the case in Ulster County. The average Medicare reimbursement for an ambulance transport, including mileage reimbursement is $441.21, while the county's cost per transport is $567.79. Historically, Medicare increases their ambulance reimbursement amount by 1% - 2%, depending on inflation and other medical market factors. In 2023, Medicare increased allowable payments to ambulance agencies by 4.3%, which is a large increase in terms of historical increases, however, with current consumer price indexes climbing at rates of 6% - 7%, the net impact on ambulance rates is negative.

Medicaid also pays a fixed amount based on rates determined by the State Medicaid office. Agencies cannot generally balance bill Medicaid patients the difference between the Medicaid rate and the agency's fee. The Medicaid allowed amount is also generally less than the cost of providing the service, as is that is the case in Ulster County. The average Medicaid reimbursement for an ambulance transport, including mileage reimbursement is $150.27, while again, the county's cost per transport is $567.79.

Commercial insurers generally pay a percentage of what's referred to as the "Usual and Customary Rate", or UCR for services provided in regional geographic areas. The challenge with commercial insurance reimbursement is that the insurance companies often make their own determination of what they consider to be the UCR, which often is based on regional Medicare, or even the Medicaid rate. When insurers under-pay an ambulance claim, the ambulance provider, like other healthcare professionals, are able to balance bill the patient, up to the provider's billed fee. Unfortunately, this often places the patient in the middle of a dispute between the provider and the payer, with the payer claiming the provider's fees are too high, and the provider contending that the insurance reimbursement is too low. This has led to federal legislation that creates a special committee to evaluate reimbursement models for ground ambulance services. This Congressionally established committee is meeting now, with recommendations due to Congress within the next 120 days. The recommendations of this committee, and the subsequent Congressional action, could have a significant impact on ambulance commercial insurance reimbursement.

Further, commercial insurers often provide reimbursement for ambulance services to the patient, despite the patient signing a directive to the insurer to pay the provider directly. Insurers often ignore these directives and pay the patient directly, which then makes the patient responsible for paying for the ambulance service. It is often difficult to collect.

For our revenue analysis, CPSM used the regional payer mix for Ulster County ambulance providers. A summary of the first year's payer mix, with average payment per service for each type of payer and overall revenue projected is provided in Table 56.

Table 54: Ambulance Revenue Projections for Ulster County

Summary Payer Mix	Trips	%	Average Patient Charge (1)	Billed Revenue	Net Collected per Transport	Net Collections
Medicare	202	33.8%	$1,865.60	$376,117.41	$746.24	$150,447
Medicare HMO	103	17.2%	$1,865.60	$191,928.23	$727.58	$74,852
Medicaid	88	14.7%	$1,865.60	$164,067.68	$391.78	$34,454
Medicaid HMO	10	1.6%	$1,865.60	$18,057.76	$373.12	$3,612
Misc. Government	11	1.9%	$1,865.60	$21,153.38	$466.40	$5,288
Commercial	76	12.8%	$1,865.60	$142,398.36	$1,212.64	$92,559
Other	6	1.0%	$1,865.60	$10,834.66	$652.96	$3,792
Self-Pay	101	16.9%	$1,865.60	$188,316.67	$93.28	$9,416
Overall	**597**	**100.0%**	**$1,865.60**	**$1,113,390.08**	**$583.00**	**$347,934**

Combining the cost of service delivery with the anticipated FFS revenue generated from ambulance transports reveals the following economic analysis for a countywide ALS safety net ambulance system.

Table 55: Ambulance Operations Revenue and Expense Analysis

Responses	746
Transports	597
Staffed Unit Hours	8,760
Expenses	$1,150,167
Revenue	$347,934
Retained Earnings	**($802,233)**

It is not surprising that the cost of service delivery exceeds the revenue generated from the service. Based on the service model outlined in Option 1, we estimate that the financial loss to the county would be $602,957 for the first year.

Options for potentially funding this loss will be discussed in a subsequent section of this report.

Advantages	Disadvantages
Provides significant response capacity enhancement countywide, specifically to communities with low response reliability.	Operating deficit of just over $800,000 that would need funding in addition to patient service revenue.
Establishes county-based service that could potentially be expanded as communities desire to join the county system.	May pull staff from existing providers in Ulster, exacerbating staffing challenges for other providers.
A county-based provider will likely attract personnel due to payrates and county benefits.	

Funding Options

County General Revenue Funding

The County could subsidize the estimated costs for any of the service delivery options adopted. Due to the tax cap imposed on the county, it is unlikely that they would be able to alter the tax millage rate to increase revenues, without a special election of the residents to fund the enhanced services. If the county were to simply fund the enhancements without additional tax revenue increases, it would likely mean re-allocating funds from other funding projects. If the county were to pursue a voter approved tax levy increase, they should provide significant education to the county residents to prove the value of a safety net ambulance system to help success of the voter initiative.

Several of the communities within the county already have ambulance or fire districts that help fund local services. County and local leaders should collaborate on the most appropriate way to assure residents are not dually taxed for both local and county levies that augment EMS services.

Create a County-Wide Public Ambulance Authority and Special Taxing District

The state of New York allows counties to establish special districts to fund essential services. Subdivision 16 of section 102 of the Real Property Tax Law (RPTL) defines that "a town or county improvement district, district corporation or another district established for the purpose of carrying on, performing, or financing one or more improvements or services intended to benefit the health, welfare, safety, or convenience of the inhabitants of such. district, and in which real property is subject to special ad valorem levies or special. assessments for the purposes for which such district was established." The types of districts included in the definition are school districts, fire districts, fire alarm districts, fire protection districts, joint fire districts, town improvement districts, county districts, business improvement districts, and districts created by Special Act of the State Legislature, including special district public libraries.[9]

A framework for creating a special district could be through the formation of an "Ulster County Ambulance Authority", like a Public Utility Model (PUM) EMS system. Under this model, the county could establish a public authority and *special taxing district* to not only fund the County enhanced service, but also provide financial support for local ambulance agencies. The Authority could be governed by an independent board, with members of the board appointed by the participating jurisdictions on a per capita basis. The Authority Board would adopt a budget based on costs of service delivery for desired service level, including approved financial support to local ambulance agencies, and the anticipated revenue generated through the combination of fee for service and ad valorem revenue.

For example, if the Board determined that the cost of enhanced service delivery by the County service is $951,000, and the revenue generated by the system is $350,000, the deficit balance of $601,000 would be assessed to the 85,375 county tax parcels[10] resulting in a $7.04 special district tax levy per parcel. If the District Board additionally approved $500,000 in financial support to local ambulance agencies, their tax levy would increase to $1,101,000, or $12.90 annually per tax parcel.

[9] https://www.assembly.state.ny.us/comm/StateLocal/20070823/specialdist.pdf
[10] https://ulstercountyny.gov/sites/default/files/2022-Real-Property-Data-Report.pdf

If the county and its jurisdictions were to pursue this option, it would likely make sense to include all existing ambulance providers and districts, including the city and town of Kingston, as well as other local ambulance agencies, into the county Authority. Unifying ambulance coverage into a seamless delivery model, incorporating the concepts of closest unit response, and consolidating fee for service revenue, would augment service delivery in the county. For example, should Kingston Fire Department establish ambulance service, it would become an integral part of the Authority and be partially or fully funded by the Authority. The fees for service revenue generated from Kinston Fire Department ambulance would contribute to the revenue of the District, thereby potentially reducing the amount of funding necessary from ad valorem sources.

The County should work with the NYS Association of Counties in supporting legislation for the development of EMS systems without implication on the 2% Tax Cap.

Community Assessment Model

Under this option, the county could use a community assessment model, much like the State of New York allows for a shared workers compensation pool arrangement. The County would audit the revenue, expenses, and operating margin annually for any of the potential models, and either assess a fee to each jurisdiction based on their per capita contribution to the loss or distribute the excess revenues for service delivery.

In many respects, this would financially function similarly to the PUM/Authority model, however, there would likely not be a shared governance and global budgeting component. The County would govern the operations of the service, with a mutual agreement of how financial losses or excess revenue is distributed.

A potential advantage of this arrangement is that it could be tailored to the specific communities benefiting from the enhancement.

For example, using the county-funded enhanced staffing for Woodstock and West Hurley of 3,120 unit hours funded by the county would be $116,314 annually. This annual cost could be assessed on a per capita basis using the combined population of 7,873 (Woodstock = 6,287 and West Hurley = 1,586). The per capita assessment would be $14.77, with the residents of Woodstock paying $92,859 and the residents of West Hurley paying $23,425.

APPENDIX 1: COUNTYWIDE ALS AMBULANCE SERVICE

For illustrative purposes, CPSM conducted an illustrative analysis of an option in which ambulance service provision were to be consolidated into one, county-wide ambulance provider.

We are cognizant that the achievement of a single, county-wide EMS system would likely have significant hurdles to implementation, however, we feel it is prudent to share the economic modeling of what such a system would cost, compared to what ambulance service currently costs in some communities in Ulster County.

This model assumes that a single, county-wide ambulance provider would be responsible for ***all*** emergency ambulance services in Ulster County.

As mentioned earlier in this report, the economic modeling for this option assumes that the county operates the ambulance service. The county could also opt for a single, county-wide ambulance contract through a formal RFP process.

Expense and Revenue Basis – 2024

- Annual Responses 23,633
- Annual Transports 15,361
- Anticipated UHU-R 0.200
- Staffed Unit Hours Needed 118,165
- Staffed Ambulance Unit Hours Per Day 323.7
- Staffed Ambulances Per Day 13.5

Ulster County, NY	
Full Ambulance Operations Expense - County	
	2024
Responses	23,633
Transports	15,361
Staffed Unit Hours	118,165
Net Revenue	**$8,955,740**
Expense	2024
Personnel	$12,328,678
Vehicles/Equipment	$1,504,971
Operations	$1,770,115
Sub-Total	**$15,603,764**
Billing Fees @ 4.5% collected Revenue	$403,008
Total Expenses	**$16,006,772**
Retained Earnings	**($7,051,032)**
Staffed Unit Hours	118,165
Expense	
Expense Per Staffed Unit Hour	$135.46
Expense Per Response	$677.30
Expense per Transport	$1,042.01
Expense Per Capita	**$87.27**
Revenue	$8,955,740
Revenue Per Staffed Unit Hour	$75.79
Revenue Per Response	$378.95
Revenue Per Transport	$583.00
Revenue Per Capita	**$48.83**
Retained Earnings	
Retained Earnings Per Staffed Unit Hour	($59.67)
Retained Earnings Per Response	($298.35)
Retained Earnings Per Transport	($459.01)
Net Cost Per Capita	**($38.44)**

Current Town/Village Costs per Capita for Ambulance Service

Town-Village	Provider	Total Cost	Population	Cost per Capita
Town of Marbletown	Marbletown First Aid - Paid (1) BLS 24/7 Service	$383,500.00	5,640	$68.00
Town of Marlboro	Ambulunz -Commercial - Paid (1) ALS 24/7	$550,000.00	8,800	$62.50
Town of Esopus	Esopus Volunteer - Volunteer 24/7	$40,000.00	9,600	$4.17
Town of Lloyd	New Paltz Rescue Squad - Paid ALS 24/7 - Paid BLS 12/7	$600,000.00	10,850	$55.30
Town of New Paltz	New Paltz Rescue Squad	$239,000.00	22,000	$10.86
Town of Olive	Olive First Aid Rescue - Paid (1) BLS 24/7	$387,000.00	4,240	$91.27
Town of Rochester	Kerhonkson Volunteer Ambulance - Paid (1) BLS Varying days/times	$190,500.00	7,360	$25.88
Town of Shandaken	Shandaken - Paid (1) ALS 24/7 Ambulance - Paid (1) ALS 24/7 Fly car	$668,350.00	2,760	$242.16
Town of Woodstock	Woodstock Fire Department	$300,000.00	6,300	$47.62
		$3,358,350.00	**77,550**	**$67.53**

Summary & Conclusions

EMS in Ulster County is at a crossroads. This report outlines the many challenges faced by ambulance agencies within the county, and the service delivery failures that are occurring as a result of the challenges.

Ulster County and local officials need to take significant steps to assure that when residents and visitors are in need of emergency ambulance service, someone will be able to reliably answer their call for help.

ATTACHMENTS

ATTACHMENT I: DEMOGRAPHICS BRIEF

Table 56: 2021 Demographic Data for Ulster County Communities

Municipality	Approximate Population	Total Area (sq. miles)
City of Kingston	23,900	8.8
Town of Denning	480	105.3
Town of Esopus	9,600	41.94
Town of Gardiner	930	44.9
Town of Hardenburgh	210	81.5
Town of Hurley	6,200	36.0
Town of Kingston	930	7.8
Town of Lloyd	10,850	33.3
Town of Marbletown	5,640	54.9
Town of Marlborough	8,800	26.5
Town of New Paltz	14,600	34.3
Town of Olive	4,240	65.1
Town of Plattekill	1,300	35.7
Town of Rochester	7,360	88.8
Town of Rosendale	5,800	20.0
Town of Saugerties	18,600	68.0
Town of Shandaken	2,760	119.8
Town of Shawangunk	13,630	56.5
Town of Ulster	12,730	28.9
Town of Wawarsing	12,800	130.5
Town of Woodstock	6,300	67.8
Village of Ellenville	4,230	8.8
Village of New Paltz	7,400	1.8
Village of Saugerties	3,760	2.3

Note: As of July 1, 2021. Reference: https://www.census.gov/quickfacts/.

ATTACHMENT II: ADDITIONAL PERSONNEL

Table 61 shows the workload of administrative units broken down by agency.

Table 57: Workload of Administrative EMS and First Responder Units

Agency	Annual Hours	Annual Runs
Ellenville Ambulance	72.5	79
Esopus Ambulance	285.8	499
Kerhonkson-Accord First Aid Squad	18.1	23
Marbletown First Aid Unit	47.6	64
Modena FD - EMS	17.2	27
New Paltz Rescue Squad	5.6	10
Olive First Aid Unit	8.3	8
Plattekill FD - EMS	2.8	5
Shandaken Ambulance	10.6	20
Ulster County EMS Coordinator	0.5	1
Wallkill Ambulance	61.9	100
EMS Agency Subtotal	**530.9**	**836**
Bloomington FD	149.0	290
Centerville - Cedar Grove FD	244.6	363
Clintondale FD	61.7	78
Cottekill FD	4.7	9
Cragsmoor FD	43.1	25
East Kingston FD	129.8	299
Esopus FD	139.9	216
Glasco FD	77.7	148
Kingston FD	192.4	303
Kripplebush FD	38.8	53
Lomontville FD	4.7	8
Mt Marion FD	35.8	59
Rifton FD	55.5	72
Rosendale FD	22.2	48
Ruby FD	66.1	125
Saugerties Village FD	39.3	70
Sawkill FD	46.7	67
Spring Lake FD	36.0	95
Stone Ridge FD	55.1	84
Tillson FD	23.9	38
Ulster Hose Co #5 FD	329.5	910
Walker Valley FD	209.7	269
First Responder Subtotal	**2,006.2**	**3,629**
Total	**2,537.1**	**4,465**

ATTACHMENT III: OUT OF COUNTY AID RECEIVED RESPONSE AND WORKLOAD

We received records of aid received into Ulster County by All Medivacs, Ambulnz, EMStar, Mobile Medic, and other out-of-county EMS services. Between January 1, 2022, and December 31, 2022, these external agencies responded to 391 calls in Ulster County, of which 118 calls were responded to by external agencies independently, and 273 calls were responded to by an agency from within Ulster County and external agencies jointly (Table 3). Table 61 shows the number of calls by call type, average calls per day, and the percentage of calls that fall into each call type category for the 12 months studied. Table 62 summarizes the total runs and deployed hours of the out-of-county EMS agencies.

Table 58: Calls Responded to by Out-of-County Agencies, by Type

Call Type	Number of Calls	Calls per Day	Call Percentage
Breathing difficulty	53	0.1	13.6
Cardiac and stroke	46	0.1	11.8
Fall and injury	71	0.2	18.2
Illness and other	59	0.2	15.1
Medical alarm	2	0.0	0.5
Medical transport	31	0.1	7.9
MVA	52	0.1	13.3
Overdose and psychiatric	10	0.0	2.6
Seizure and unconsciousness	41	0.1	10.5
EMS Subtotal	**365**	**1.0**	**93.4**
Non-EMS	**26**	**0.1**	**6.6**
Total	**391**	**1.1**	**100.0**

Table 59: Summary of the Total Annual Workload by Out-of-County Agency

Agency	Annual Runs	Runs per Day	Minutes per Run	Annual Hours	Minutes per Day	Percent of Hours
All Medivacs	153	0.4	63.9	162.9	26.9	42.2
Ambulnz	34	0.1	45.4	25.7	4.3	6.7
EMStar	16	0.0	38.2	10.2	1.7	2.6
Margaretville Ambulance	3	0.0	54.0	2.7	0.4	0.7
Mobile Medic	1	0.0	35.9	0.6	0.1	0.2
Other Agencies	211	0.6	52.0	182.8	30.2	47.4
Total	**418**	**1.2**	**55.3**	**385.0**	**63.6**	**100.0**

Observations:

- Out-of-county EMS agencies responded to 391 calls, an average of 1.1 calls per day.
- There were 418 runs for the year. The daily average was 1.2 runs.
- The total deployed time for the year was 385.0 hours. The daily average deployed time was 63.6 minutes for all units combined.

ATTACHMENT IV: CALL TYPE IDENTIFICATION

We used a method based on recorded incident types and call descriptions to identify call types. For the 23,552 total calls (Table 3 excluding the 60 aid given calls):

- We primarily identified call types based on the "incident type" recorded in the CAD data. Table 47 shows how incident types were used.
- Some calls recorded generic incident types such as "ALS evaluation/assist", "assist EMS", "critical", "stable", and "unstable." In these instances, we used the "call nature" recorded in the CAD data. Many call types in Table 47 include a final row for calls classified by call nature.

Table 60: EMS Call Type by CAD Incident Type

Call Type	Incident Type	Calls
Breathing Difficulty	choking	75
	difficulty breathing	2,724
	breathing difficulty call natures	96
Cardiac and Stroke	cardiac arrest - no transport/DOA/unattended	204
	cardiac arrest – transported	73
	cardiac-related emergency	1,759
	stroke	452
	cardiac and stroke call natures	75
Fall and Injury	aircraft emergency	2
	assault	9
	bleeding	447
	burn	24
	drowning	1
	fall	3,142
	fight	1
	head injury	289
	railroad accident or fire	5
	shots fired	1
	trauma	865
	water emergency	12
	fall and injury call natures	252
Illness and Other	abdominal/back pain	985
	accidental poisoning	5
	allergic reaction	204
	animal bite	19
	cellar pump	9
	childbirth	38
	diabetic emergency	294
	environmental emergency	33
	gynecological emergency	18

Call Type	Incident Type	Calls
	sick/unknown medical emergency	3,069
	illness and other call natures	640
Medical Alarm	medical alarm	810
Medical Transport	medivac	23
	mental health law transport or pickup order	2
	transport	754
MVA	accident personal injury	1,458
Overdose and Psychiatric	overdose	375
	psychiatric emergency	759
	substance abuse	230
	suicide or attempted suicide	5
	overdose and psychiatric related	27
Seizure and Unconsciousness	fainting/dizziness	1353
	seizure/convulsions	652
	unconscious/unresponsive	651
	seizure and unconsciousness call natures	132
EMS Subtotal		**23,053**
Non - EMS	assist fire	1
	fire alarm	2
	hazardous material related	2
	identity theft	1
	mutual aid	14
	police public service	1
	public service	64
	standby	412
	structure fire	1
	traffic stop	1
Non-EMS Subtotal		**499**
Total		**23,552**

APPENDIX 1: EXAMPLE MEDIA ACCOUNTS OF RURAL EMS CHALLENGES

What if the ambulance doesn't come?

Rural America faces a broken emergency medical system
Nada Hassanein
June 26, 2023

https://www.usatoday.com/story/news/health/2023/06/26/no-ambulances-closing-hospitals-the-crisis-facing-rural-america/70342027007/

Melissa Peddie, EMS director and paramedic, drives the single ambulance that serves Liberty County in rural north Florida.

During any shift, there are just two full-time paramedics driving the lone truck around the 1,176-square-mile sparsely populated county.

Just a couple of weeks ago, Peddie and her husband, the local fire chief, drove their own car to stabilize an older man who fell and was unable to get up – the ambulance was on another call. The couple waited with the patient and his family until an ambulance from a county 30 minutes away could come to take him an hour east to Tallahassee, the state capital and home to the nearest trauma center hospital.

"We've done that quite often," she said. "Jump in my car and go to the scene and stabilize, maintain until a crew or somebody can get there."

Often, she must call two or three neighboring counties to find an ambulance for mutual aid.

Nearly 4.5 million people across the U.S. live in an "ambulance desert" – 25 minutes or more from an ambulance station – and more than half of those are residents of rural counties, according to a new national study by the Maine Rural Health Research Center and the Rural Health Research Centers.

As rural hospitals shutter across the nation, dwindling emergency medical services also must travel far to the nearest hospital or trauma center. Experts and those in the field say EMS needs a more systematic funding model to support rural and poorer urban communities.

"This is a really extreme problem, and we need to figure out solutions. People think that when you call 911, that someone's coming in," said lead author Yvonne Jonk, deputy director of the Maine Rural Health Research Center. "Most people don't realize that their communities don't actually have adequate coverage."

'In crisis mode'
About 15% of the U.S. population lives in rural areas like Peddie's Liberty County, where poverty and mortality rates are higher than in urban areas.

Four of 5 counties across the nation have at least one ambulance desert, according to Jonk's analysis of 41 states and data from 2021 and 2022.

Some regions are more underserved than others: States in the South and the West have the most rural residents living in ambulance deserts.

Eight states − Nevada, Wyoming, Montana, Utah, New Mexico, Idaho, South Dakota and North Dakota − have fewer than three ambulances covering every 1,000 square miles of land area.

In North Dakota, more than 31,000 people, about 4% of the total state population, live in ambulance deserts, according to the analysis.

PJ Ringdahl, regional adviser for the North Dakota EMS Association and paramedic, advocates for EMS stations across the state and holds listening sessions with other paramedic and emergency medical technicians.

"We're all in crisis mode. We're all short-staffed. And we really have to try to figure out an appropriate model to be able to deliver health care to those communities," Ringdahl said.

Throughout the West, many of those communities are underserved American Indian reservations.

In 2015, a Colorado-based emergency medicine physician and his wife used their retirement money to fund two ambulance stations in a North Dakota ambulance desert, the Fort Berthold Indian Reservation, where trucks would have to rush to emergencies from at least a half-hour away.

Meanwhile, the Fort McDermitt Paiute-Shoshone Tribe awaits help. The reservation stretches along the Nevada-Oregon border near Idaho and has no ambulance or hospital. Nevada has just 55 ambulance stations across the state, according to the analysis, and about 33% of the ambulance desert population is in rural areas.

Tribal chairwoman Maxine Redstar said the community used to have an ambulance service, but it couldn't afford to keep it going.

"When you call an ambulance, it comes from Winnemucca," she said, "which is an hour away."

Weather, wildlife and long, dark winding gravel roads make getting to the scene difficult.

That's the case on the Duckwater Shoshone Tribe Reservation in the central Nevada desert valley, which doesn't have an ambulance, and the nearest one is an hour away. Tribal members take matters into their own hands. Janey Blackeye Bryan, 60, started first aid training as a teenager and became certified in community emergency response, then volunteered as an advanced EMT for years. Her daughter and son-in-law are volunteer EMTs, and her husband is a volunteer firefighter.

"We've got medical issues here. You got to move somebody, you got to get them someplace really quick," Bryan said. But "we're located about 75 miles away from an emergency room. ... There is no golden hour."

Inconsistent funding models jeopardize lifesaving services
Few states designate EMS as essential services. In the U.S., EMS are mainly funded by local governments, and not all states allocate supplemental funds toward the services. In communities like Peddie's, for example, the county's general revenue budget must pay the bill, because supplemental state funding falls short. In addition, an EMS agency typically doesn't receive reimbursements by insurance companies unless a patient is taken to an emergency room.

"There's no systematic way to go about funding," Jonk said. "It varies state to state as to how much funding they have at their disposal to throw at ambulance services."

Amid patchwork funding, communities rely on varied revenue sources to fund ambulance services, said Lindsey Narloch, project manager at Rural EMS Counts, a North Dakota EMS improvement project. That often doesn't cover expensive equipment, medication and staff salaries. Counties end up having to pay most of the cost.

"It's kind of a hodgepodge of a little reimbursements, some tax funds, some grants, volunteer labor," she said.

Poorer communities end up taking the brunt. High-income areas with larger proportions of white patients had shorter response times compared to poorer areas, according to one study of cardiac arrest emergencies and ambulance response.

Unpaid volunteers often fill gaps. But that workforce is under threat as volunteers age and recruitment for new volunteers becomes more difficult.

Recently, Gary Wingrove, president of The Paramedic Foundation, a Minnesota-based nonprofit, gave a presentation to policymakers and shared the story of a Wyoming-based volunteer EMT who drives to a community 300 miles away to fill in as a paramedic for one week a month.

"One major problem we have is the payment system does not support full-time ambulance personnel," Wingrove told USA TODAY. Funding needs to be sustainable and prevent volunteers from "having to drive 300 miles to do a full-time job and instead get paid" to serve their local communities.

Critical access hospitals, which are medical centers in rural, underserved communities often with a high number of uninsured residents, are paid more than other hospitals if their care delivery cost is higher than the standard Medicare payment, he said.

Amid rural hospital closures and reliance on volunteerism, "we need something similar for rural ambulance services," he said. "We have to take a hard look at our financing of rural ambulance services. And to me, it just makes a lot of sense if we create a system like the critical access hospitals have for the rural ambulance services."

More:Half of ambulance rides yield surprise medical bills. What's being done to protect people?

'Forgotten about'
EMS professionals are first responders but also health care providers, Ringdahl said, adding she wishes to see the service more supported within the U.S. health care delivery system.

“The EMS profession needs a home,” she said. “EMS kind of sits on two sides. … So, when you don't have a home, sometimes you just get left behind. On a federal level, I'd like to see some initiative to maybe get us a little bit more rooted into that health care system.”

On top of delivering critical health services, in rural areas EMS workers often must navigate rough terrain.

“For a long time, we've done this on the backs of volunteers,” Narloch said. “There has to be a recognition that this is something that has to be paid for, and you have to pay people well to do. It's a big job.”

Working a call recently, Peddie was in an accident that totaled her ambulance. The county now uses an older backup truck that Peddie fears will break down. A new vehicle would set the county back up to $300,000, she estimated. Manufacturers estimate a single vehicle can cost anywhere from $120,000 to $325,000.

“We’re already in a major deficit,” she said. “You hope that your equipment stays intact and works.”

Peddie said her profession is overlooked as a critical service.

“We're forgotten about,” she said. “The moment someone needs us, they think about us. But after that, it's just a fading thought.”

EMS shortage hits crisis level

By Roxanne Lambert
Jul 29, 2023

https://www.lebanondemocrat.com/hartsville/ems-shortage-hits-crisis-level/article_6c6507eb-3187-5f3a-b12e-8e35230d2d77.html

The shortage of Emergency Medical Services (EMS) workers across the nation has hit a critical level, which has added to the existing healthcare crisis.

Unfortunately, the issue is hitting smaller rural areas harder than larger cities, and Tennessee is no exception.

"For us in Middle Tennessee, what drives the market is Metro Nashville," said Randall Kirby with the Tennessee Department of Health's division of emergency medical services. "They are adding 12 new ambulances this fiscal year. That's, at least, 36 people.

"First, they do a hiring from the surrounding area. Then, they'll go to the next layer out, which is Trousdale and Macon counties, and will recruit more people. So, the more rural your county is, the more it can affect you. The metropolitan areas just have too much clout."

For the past several years, Tennessee has been losing an enormous amount of EMS personnel as many have left the profession.

"Four years ago, we noticed that there were issues in finding people to work," said Kirby. "I went to the licensing agent and said, 'Let's just run a report and see how many people didn't renew their license.' She ran the report, and there were 800 that did not renew their license. So, there were 800 that left in one year in Tennessee. Then, we looked back at the past couple of years, and there were 800 (each year). It was clear then why there was a shortage.

"This doesn't count the people who still hold a license and now don't do anything but teach, or those who hold a license but went to work for a hospital or some other healthcare entity where they are on a safety team. It quickly became evident that we were losing people. On top of that, we noticed that we were not getting as many people coming into the profession from the schools. So, we went into crisis mode at that time."

According to Trousdale County EMS Director Matt Batey, nationwide, patient outcomes can be negatively affected as the result of the critical shortage.

"The biggest impact of the shortage is the lack of paramedics, which are the second highest level of licensure that the state of Tennessee recognizes," said Batey. "That's what gives us the advanced life support (ALS) capabilities. Currently, this nationwide shortage of paramedics is beginning to have a negative effect everywhere. Patient outcomes can be affected because of it."

To meet the need for EMS workers head on, an emergency medical technician (EMT) training class is being offered at the Hartsville-Trousdale County Fire Hall. The class is open to all interested people in any of the surrounding counties, including Trousdale, Macon, Smith, and Wilson, as well as other areas.

"With the classes, we are trying to generate interest here locally," said Batey. "In our last basic class, we had more students from Macon County than we did Trousdale County, because it was

open to everyone. Our primary goal is to get people who live here to take the class and maybe progress on to being a paramedic at some point. That would be a long-term solution. It certainly is not going to correct the issue in the next few months, or even in the next couple of years. But, it's a start.

For residents of Macon County, the county is offering to pay for training, and according to Batey, there is also grant money available to those enrolled in training programs.

"We are short about five paramedics, and we're short EMTs as well," said Macon County Mayor Steve Jones. "We are taking applications at this time. It's a good opportunity. Right now, there is funding available to take the class. We will pay for classes for EMTs and paramedics. It a great opportunity to become employed in Macon County. We will fund your education."

"There are jobs available. You can start brand new with no experience. We provide full benefits, 100% insurance and a retirement program."

Trousdale County Mayor Jack McCall hopes that high schools will one-day offer EMS training, which will allow students to begin employment upon graduation.

"Trousdale County has a slower pace, so it's hard to compete with the larger markets," said McCall. "Where we probably failed in the last 10 or 15 years is that we haven't homegrown our EMTs and paramedics, so it's been a constant struggle to fill those spots. If we started an EMT class in high school, it would be great. As soon as the students graduate, they'd be ready to go to work. I think we are going to have to work in our schools to grow a crop of these young men and women who can stay in Trousdale County and be a part of the community."

Batey added, "We really would like people to become more interested in doing pre-hospital medicine. We would like to get into the schools for when they do their career days. We are also looking at doing dual enrollment. So, there may be an option for students who are interested in this line of work to do part of their training while they are in high school, and when they graduate, go on and finish at whatever college they choose that offers these programs."

The next training class for EMTs will begin in August. For individuals interested in the class, they can contact Randall Kirby at 615-888-6657.

What if you call 911 and no one comes?

Inside the collapse of America's emergency medical services.

By Erika Edwards

Oct. 22 2019

NEWS

https://www.nbcnews.com/health/health-care/there-s-shortage-volunteer-ems-workers-ambulances-rural-america-n1068556

The night of June 15, 2016, was perfect for a softball game in Hebron, North Dakota. The temperature had reached almost 80 degrees that day, and even though Jerrid Soupir had been feeling pretty lousy — like maybe he was catching a summer cold — he was itching to get out on the field.

It was a doubleheader that night. Soupir, then 46, was playing shortstop in the second game. He remembers helping his teammates make a double play, getting two players out.

He turned to walk back to his position, went limp and fell straight to the ground.
Soupir had gone into cardiac arrest, meaning his heart stopped working suddenly. It's often fatal if the victim doesn't get help quickly.

There is no hospital in Hebron. In fact, when someone calls 911, there isn't even a law that requires anyone in Hebron to answer the phone. Like so many other low-income, rural communities across the country, the small town's ambulance runs on altruism alone.

And those ambulance services are closing in record numbers, putting around 60 million Americans at risk of being stranded in a medical emergency. Because so many emergency medical services (EMS) agencies have been struggling financially, some states are stepping in with funding. But emergency medical experts say it's not enough to cure the dire situation.

Organizing and providing emergency medical care is left to the people living in Hebron, which has a population of 677. Luckily for Soupir, the softball field was the right place to be when he collapsed.

At the game that night were not one, but two people who worked with the local ambulance service. A third player had a CPR kit in his car. A fourth emergency worker happened to be out on her evening walk by the park.

The softball team turned makeshift emergency department got Soupir to the hospital in Bismarck — 60 miles away — and saved his life that night. "If there had been no ambulance, and people wouldn't have acted the way they did," Soupir said, "I wouldn't be alive."

Like so many other small towns in America, Hebron relies almost exclusively on volunteers, making it difficult to keep its EMS going.
"We struggle getting enough staff to cover every shift, 24 hours a day, seven days a week," Steven Maershbecker, squad leader of the Hebron ambulance service, said.

Maershbecker, 54, also owns the town grocery store, called Jack & Jill Grocery, on Main Street. Working full time and donating any extra time to the community is just what people in towns like Hebron do.

"The way I was brought up, you give it your all. You give 120 percent all the time," Maershbecker said.

Two hours to the southwest of Hebron, close to the state's border with Montana, the EMS situation in the tiny town of Marmarth, North Dakota, (population 143) is so dire that it's at risk of shutting down.

"We are literally one person away from closing," said Erick Hartse, a volunteer paramedic with the Marmarth ambulance service.

There are 12 EMS personnel in Marmarth, and they each take 12-hour shifts. Two people must be on call at the same time: usually one to drive the ambulance and another to administer more advanced medical care. All 12 donate their time, without compensation of any kind. That means they must also work a full-time job to support their families.

"We've been relying on volunteers to be the backbone in EMS for a long time, and unfortunately, that needs to change," Hartse, 30, said. "Could you imagine being a volunteer doctor? It's unfathomable."

Still, Hartse, a third-generation paramedic, can't imagine any other way of life.

"It was something that was ingrained in me at a very young age," he said. "It's a strong sense of community and a strong sense of being willing to help other people. You take a little bit of time out of your day to help somebody else that's having the worst day of their lives."

Shrinking, aging populations

The situations in Hebron and Marmarth aren't isolated; they come at a time when demand for health care in rural America far exceeds the supply of people necessary to provide that care.

According to the U.S. Census Bureau, in 1900, 60 percent of the population was considered "rural." By 2010, that percentage had fallen to 19.3 percent. (The Census Bureau defines a rural community as one with a population of less than 2,500.) However, the vast majority of land in the U.S. — more than 95 percent — is rural.

Younger, healthier members of the community often leave small towns for urban areas, leaving behind aging, often poor, older adults who tend to be the ones calling 911 with heart attacks, strokes and other health emergencies.

That leaves few people available — and willing — to volunteer as emergency medical personnel.

"As the population in these communities shrinks, you've got a finite pool of people who are willing to volunteer," said Wayne Denny, chief of Idaho's Bureau of Emergency Medical Services and Preparedness.

EMS volunteer work requires hours of initial training that costs hundreds of dollars, even at the most basic levels. In North Dakota, for example, emergency medical responders need 50 to 60 hours of training to learn how to drive an ambulance and assist with basic CPR and first aid. Those classes can cost at least $600, which must be shouldered by the unpaid volunteer.

Training commitment hours and costs rise steadily as the volunteers become more skilled, climbing the ranks from basic emergency medical technician to advanced emergency medical technician to paramedic. And every two years, volunteers need continuing education.

Maershbecker, of Hebron, is an emergency medical responder, or EMR. That role requires 16 hours of additional training every two years. Emergency medical technicians, or EMTs, need at least 40 hours.

"We only need 16, but all of us are taking 40-plus because we want to be able to assist our EMTs as fully as we possibly can," Maershbecker said. "The more we know, the more we can help them."

"The more we know, the more we can help them," Maershbecker said. (Ackerman + Gruber / for NBC News)
In many shrinking rural communities, agencies like the ones in Hebron and Marmarth are "hanging on by the skin of their teeth," said Andy Gienapp, head of the Office of Emergency Medical Services for the Wyoming Department of Health.

"The reason that they're managing to hang on is that some of the volunteers just look around and say, 'Well, good grief, if I don't continue to do this, who will?'" Gienapp said.

Hartse in Marmarth, North Dakota, agrees. "Can you imagine sitting in a place and dialing 911 and not having anybody show up?" he asked. "That's very difficult for me to sit back and try to accept."

When one EMS agency closes, even temporarily, it puts a tremendous strain on surrounding services that must travel farther to help those in need.

"In Idaho, like other western states, it's not like there's a neighboring community five miles up the road. It might be 30 miles. It might be 50 miles," Denny said.
Adding to the strain, a report from the University of North Carolina Cecil G. Sheps Center for Health Services Research found that 118 rural hospitals across the country have closed since 2010, though that number does not take into account small facilities that had to shut their doors temporarily and then reopened. Many of those hospitals are in states that did not expand Medicaid under the Affordable Care Act.

"We've never had this many hospitals close this fast in this country," said Nikki King, a member of the National Rural Health Association, a nonprofit organization that advocates for rural health issues.

Fewer rural hospitals mean ambulances need to travel even farther distances, often in rough terrain or on unmarked roads.

"You're talking about an older, sicker, poorer population that's more likely to rely on EMS that is now farther and farther away from health care," King said.

What's more, most EMS programs get paid by each emergency call they go on, through reimbursements from Medicare, Medicaid or private payers. Longer drives mean fewer calls, and consequently, less money.

And EMS services respond to calls regardless of patients' ability to pay.

"Mixed in with those patients who have private insurance, or the financial means to pay an ambulance bill, is a fair amount of underinsured or those who have no insurance whatsoever," Gienapp explained.

Very often, EMS funding cannot cover the cost of having a working ambulance and crew on standby, waiting for an emergency call. Some calls end up with no patient to bill: the call could be canceled; the person may refuse to go to the hospital; or the patient may die before going to the hospital.

Other funding can come from a variety of sources, but usually not the state legislature. A majority of states do not consider local emergency medical services "essential" by law, as they do for fire and police.

Sometimes money comes from local taxes, a well that's drying up with the shrinking rural population. In Idaho, for example, there is a 25 cent fee on motor vehicle registrations that's allocated for EMS in each county.

"But in these smaller counties that are very rural, the number of motor vehicle registrations they have every year is small," Denny said.

King said communities are forced to support their EMS agencies in any way possible.

"We have critical care emergency services being funded by fish fries and spaghetti dinners."

How did we get here?
In the 1950s, it was funeral homes that actually provided many of the country's ambulance services because they had vehicles — namely, hearses — that could accommodate a person who needed to lie down. It was an ominous predictor of what was to happen over the next decade.

As the U.S. highway system modernized and flourished, motor vehicle fatalities increased. By 1962, tens of thousands of people were dying in car accidents.

Four years later, the National Academy of Sciences published what is now considered to be a landmark report, called "Accidental Death and Disability: The Neglected Disease of Modern Society."

It laid the groundwork for a system of pre-hospital medical care by spotlighting unnecessary deaths and disability from accidental injuries — in particular, motor vehicle accidents. Lives could be saved, the report concluded, if injured drivers and their passengers could get to a hospital quickly.

"All ambulance services really began with the concept: how do we get somebody off the highway from a motor vehicle crash and get them to a hospital?" Gienapp, of the Wyoming Department of Health, said.

But in 1960, just a handful of states had developed standardized courses for emergency rescuers, and fewer than half of all EMS personnel had even minimal first aid training.

Over the following years, the system evolved to transport people who have had other medical emergencies, such as heart attacks and strokes. As a result, EMS fell under the National Highway Traffic Safety Administration, not the Department of Health and Human Services.

EMS "grew up overnight," Gienapp said. "In rural America, it was very easy. If you wanted an ambulance service, you just got two or three of your friends together and went out and got a truck." Dorothy Baron did just that.

In 1977, Baron and a few other residents in her hometown of Moorcroft, Wyoming, (population 1,009) saw a gap in emergency health care, and took it upon themselves to take the necessary training courses and then start their own volunteer ambulance service.

Their first "ambulance" was a used Chevy Suburban with a board in the back that acted as a gurney. It stuck so far out of the vehicle's backend that Baron's crew couldn't get the door closed.

As emergency medicine technology evolved, so did Baron. Over time, she became an advanced EMT, and her EMS agency was able to purchase real ambulances.

She did this in addition to raising seven children. "It was just something I could do to contribute to the community," Baron explained.

Baron, who turns 82 this month, continues her volunteer EMS work to this day. She had to cut her interview for this story short; a call about a car accident demanded her attention.

Pensions for the unpaid

Recruiting and holding on to people like Baron who spend decades serving their community can be difficult.

There is no 401K that comes with volunteer work, no big payout at the end of service, and very often, no benefits other than the satisfaction of helping neighbors in need. Gienapp estimates that nearly three-quarters of the EMS workers in his home state of Wyoming are either grossly undercompensated, or receive no pay whatsoever.

"Really, what we're talking about is that 70 percent to 74 percent of the emergency medical services are provided by people for whom that is not their full-time job," he said.

Some communities try to offset the compensation gap by offering volunteers modest stipends or breaks on property taxes. Others utilize what are called Length of Service Award Programs. These are like pensions, but under the current tax code, contributions from an employer for retirement plans can't be higher than compensation. That's a problem if your compensation is zero.

A bipartisan bill before the U.S. Senate aims to change that, so Length of Service Award Programs can function like traditional employer retirement plans.

The Volunteer Emergency Services Recruitment and Retention Act, sponsored by Sens. Susan Collins (R-Maine) and Ben Cardin (D-Maryland), would allow higher contributions and make those contributions into the program tax deferred, guaranteed and eligible for rollover to a different plan.

"If you're serving your community through volunteer service as either an emergency medical person or firefighter," Cardin said, "you want to make sure that your family is protected later in life because you're giving up some of your ability to put resources away with a traditional employer."

"We gotta make it easier for volunteers to serve," he said.

Pride versus profit
Still, it's unclear whether bills like this one are enough to solve the problem.

Gienapp and other rural health experts say a system that relies exclusively on the goodwill of people is simply unsustainable. EMS agencies need money to recruit and retain qualified workers, and for upkeep of the equipment.

When they don't have sufficient funding, they close.

Solutions to a broken rural health care system require sensitivity in communities that have deep emotional ties to their volunteer EMS workers. The idea of folding or contracting ambulance services from other towns or companies is often met with resistance, because the services don't feel "hometown" anymore, Gienapp said.

So, rural EMS agencies need to get creative. One immediate option is to seek out work that's sure to result in payment.
That's how the EMS system serving Campbell County Memorial Hospital in Gillette, Wyoming, went from losing money to turning a profit within the past three years.

"We started partnering with different departments in the hospital to either help them deliver their service line or do it more effectively, more efficiently," said Christopher Beltz, EMS director for Campbell County Health. This includes transporting patients between facilities if they require specialty care, such as patients with kidney disease who must travel for dialysis treatments.

But this is not a salve for all rural EMS systems. The agency in Gillette is affiliated with a major hospital, and is able to pay its staff a modest salary. Even then, Beltz said it's difficult to compete with higher-paying jobs.

"As a rural EMS agency, it's hard to get people just to walk in the door and apply for a job," he said. "We are in the heart of coal country here in Wyoming and people can make a lot more money per hour working in the coal mines."

Serving their own
Rebecca Bumgardner helps support her family by working 40 hours a week at a motel in Baker, Montana. She and her husband also volunteer with their local fire department. And they have a two-year-old daughter who goes to work with Bumgardner at the motel.

"I've got a few irons in the fire," she joked.

But every Tuesday, Bumgardner leaves her family and her day job to work the night shift — 6 p.m. to 6 a.m. — as a volunteer EMT in Marmarth, North Dakota, the town in danger of losing its ambulance services.

"I'm spread thin. But it's something that matters to me," said Bumgardner, 26. "So even if it's only one night a week, I make it work."

The thought of Marmarth's EMS service closing is unacceptable to Bumgardner. She knows the town well; as a young girl, her family often traveled to Marmarth to look for dinosaur bones.

The thought of Marmarth's EMS agency closing is unacceptable to Bumgardner. (Ackerman + Gruber / for NBC News)

A strong connection to community is illustrative of another element of rural EMS agencies that sets them apart from many others in the country.

"Almost every time this ambulance leaves," Hartse, the volunteer Marmarth paramedic, said, "we know the person we're gonna go help."

It gets to the root of Hartse's biggest fear about losing the local emergency medical service.

"What happens if my family's the one that needs the ambulance, and there's nobody here?"

Rural ambulance crews are running out of money and volunteers. In some places, the fallout could be nobody responding to a 911 call

By Lucy Kafanov, CNN

Sat May 22, 2021

https://www.cnn.com/2021/05/22/us/wyoming-pandemic-ems-shortage/index.html

Worland, Wyoming (CNN) America's rural ambulance services, often sustained by volunteers, are fighting for their survival -- a crisis hastened by the impact of Covid-19.

More than one-third of all rural EMS are in danger of closing, according to Alan Morgan, CEO of the National Rural Health Association. "The pandemic has further stretched the resources of our nation's rural EMS."

In Wyoming, the problem is especially dire. It may have the smallest population in America, but when it comes to land, Wyoming is the ninth-largest.

In Washakie County, which lies in Wyoming's southern Bighorn Basin, it means a tradeoff for the nearly 8,000 residents living here: While there is vast open space, the nearest major trauma hospital is more than 2.5 hours away.

On a recent drive from Cody -- the closest town with an airport -- the land stretched endlessly while cattle and wildlife outnumbered people. The sole reminders of civilization were the occasional oil rigs pumping silently in the distance.

But for the residents, speedy access to emergency medical services -- paramedics and an ambulance -- can be a matter of survival.

It's a fact Luke Sypherd knows all too well. For the past three years, he has overseen Washakie County's volunteer ambulance service. But on May 1, the organization was forced to dissolve. "We just saw that we didn't have the personnel to continue," Sypherd said. "It was an ongoing problem made worse by Covid with fewer people interested in volunteering with EMS during a pandemic and patients afraid of getting taken to a hospital."

A nearby hospital system, Cody Regional Health, has agreed to provide ambulance service for Washakie County, averting a crisis. But it's a problem playing out across rural America: Ambulance crews are running out of money and volunteers.

Phillip Franklin, the EMS Director for Cody Regional Health, said the crisis is a result of several problems.

"The majority of the ambulance service staff are not paid so if you don't have your volunteers, they can't run calls," Franklin said. "Another problem is that there's simply just not enough volume to keep ambulance service afloat and in the state of Wyoming, EMS is not essential, which means there's nobody responsible to fund these entities."

Sypherd said the funding model for EMS is fundamentally flawed, with most service providers reimbursed only if they take patients to a hospital or clinic. In rural areas like Washakie County, smaller populations mean fewer calls, and consequently, less money.

"You're reimbursed based on the number of patients that you transport to a hospital so you could get called 1,000 times a year and only transport 750 patients -- those other 250 calls you made no money on," Sypherd said.

Plea for federal assistance

The American Ambulance Association sent a letter earlier this month to the US Department of Health and Human Services asking the agency to earmark $1.425 billion in federal aid for its members, warning that emergency medical systems across the US are "on the brink of collapse." "It is critical that we not let the financial hardship caused by the pandemic to permanently deteriorate our EMS systems, especially in rural areas where an ambulance service may be the only emergency medical service provider, and ensure that all Americans continue to have access to vital emergency 9-1-1 and medically necessary non-emergency ground ambulance services," the letter said.

According to the National Association of State EMS Officials, just eight states consider local emergency medical services "essential" by law, as they do for fire and police.

"That mandate means that somebody has to consciously think and plan and ensure that EMS is available," Sypherd said. "If you're in one of the states that doesn't mandate EMS as an essential service and your local ambulance provider shuts down because they lost funding or there weren't enough volunteers -- that means if you call 911 it might be that nobody shows up."

"When you look at what's happening here (in Washakie County, it) is just the tip of the iceberg," said Franklin. "There's other services throughout the state that are just one bad year away from closure."

'A matter of life and death'

One of those is Fremont County -- home to the Wind River Indian Reservation. Fremont is roughly the size of the state of Vermont. An economic downturn and budget cuts prompted the county to privatize its ambulance service in 2016. But the private company, American Medical Response, says it can't afford to keep going after losing $1.5 million in revenue last year. AMR announced it won't renew its contract when it runs out on June 30. No others have bid.

"We just couldn't renew that current contract because it was set up for a financial failure," said Matt Strauss, Regional Director for AMR parent company, Global Medical Response.

One of the problems, according to Fremont County Commissioner Larry Allen, is the so-called payer mix. Many of the county's residents rely on Medicare, Medicaid and Indian Health Services, which reimburse ambulance providers at a lower rate. And without state or federal designation of EMS as an essential service, Allen said "there's no source of revenue to operate an ambulance."

"Because of the distance and the ruralness of this county, we just don't have people standing in line wanting to provide ambulance service," Allen said.

The Wind River Indian Reservation stretches across more than 2 million acres and is shared by two Native American tribes, the Eastern Shoshone and the Northern Arapaho. It has three tiny clinics but no ambulance services and relies on Fremont County for EMS.
"Right now the response time is pretty slow and it's going to be nonexistent," said Northern Arapaho tribal member Juan Willow. His grandfather struggled with health problems and Willow said there were many times when the family couldn't wait for an ambulance and had to find other ways of getting to the hospital. "Not everyone here has a car," he said.

It's a concern shared by Jordan Dresser, the chairman of the Northern Arapaho Tribe.

"I think if we didn't have access to ambulances, death rates would be higher," said Dresser, adding that many tribal members don't have working vehicles and therefore can't take themselves to the hospital or clinics. "It's a matter of life and death for us."

Rural Ambulance Crews Have Run Out of Money and Volunteers

Strained by pandemic-era budget cuts, stress and a lack of revenue, at least 10 ambulance companies in Wyoming are in danger of shuttering — some imminently.

By Ali Watkins
April 29, 2021

The New York Times

https://www.nytimes.com/2021/04/25/us/rural-ambulance-coronavirus.html

WORLAND, Wyo. — For three years, Luke Sypherd has run the small volunteer ambulance crew that services Washakie County, Wyo., caring for the county's 7,800 residents and, when necessary, transporting them 162 miles north to the nearest major trauma center, in Billings, Mont.

In May, though, the volunteer Washakie County Ambulance Service will be no more.

"It's just steadily going downhill," Mr. Sypherd said. The work is hard, demanding and almost entirely volunteer-based, and the meager revenue from bringing patients in small cities like Worland to medical centers was steeply eroded during much of 2020 when all but the sickest coronavirus patients avoided hospitals.

Washakie County's conundrum is reflective of a troubling trend in Wyoming and states like it: The ambulance crews that service much of rural America have run out of money and volunteers, a crisis exacerbated by the demands of the pandemic and a neglected, patchwork 911 system. The problem transcends geography: In rural, upstate New York, crews are struggling to pay bills. In Wisconsin, older volunteers are retiring, and no one is taking their place.

The situation is particularly acute in Wyoming, where nearly half of the population lives in territory so empty it is still considered the frontier. At least 10 localities in the state are in danger of losing ambulance service, some imminently, according to an analysis reviewed by The New York Times.

Many of the disappearing ambulances are staffed by volunteers, and some are for-profit ambulance providers that say they are losing money. Still others are local contractors hired by municipalities that, strained by the budget crisis of the pandemic, can no longer afford to pay them. Thousands of Wyoming residents could soon be in a position where there is no one nearby to answer a call for help.

"Nobody can figure out a solution," said Andy Gienapp, the recent administrator for emergency medical services at the Wyoming Department of Health. "Communities are faced with confronting the very real crisis of, 'We don't know how we're going to do this tomorrow, because nobody's doing it for free.'"

'Nobody wants to pay for it'

About 230 miles southwest of Washakie County, Ron Gatti is preparing to close up Sweetwater Medics, a small ambulance provider in Sweetwater County, where 42,000 people are spread across 10,000 square miles. Facing a budget crisis, the county is expected to end its contract with Mr. Gatti's ambulance service in June.

The situation is a direct result of the pandemic, Mr. Gatti and county officials said. Rock Springs, the town that Sweetwater Medics serves, was looking for budget cuts; the ambulance contract was one of them. Mr. Gatti's company proposed transitioning to a public, tax-supported service, funded by the county, he said, but the money was not there.

"Everybody wants it and nobody wants to pay for it," said Jeff Smith, a commissioner in Sweetwater County.

Instead, after June 30, the regional hospital will have to respond on its own to emergency calls.

Mr. Sypherd, who is also president of the Wyoming E.M.S. Association, keeps a list in his head of ambulance companies, large and small, in imminent danger of closing. There is Sweetwater Medics, which could be gone by autumn. Sublette County's service was recently saved after voters approved a small tax increase, which will fund a new hospital and the affiliated ambulance. Albin, near Cheyenne, no longer has enough volunteers to fill its crew.

"The ambulance at Albin is fiscally healthy. There's just nobody to give it to," said Carrie Deselms, who helps direct the program.

Fremont County, home to the state's Wind River Indian Reservation, is set to lose its only ambulance service, American Medical Response, a national for-profit company that merged recently with the company that has handled the county's ambulance service since 2016.

Now, American Medical Response says its profit margins cannot justify remaining there. The company has informed county officials that it will not rebid when its contract runs out this summer.

"The call volume in Fremont County plummeted, making it impossible to cover increasing operational costs without a subsidy" said Randy Lyman, the Northwest regional president for Global Medical Response, the parent company of American Medical Response. "The revenue alone simply wasn't sufficient."

An unsustainable model, strained further

There is a misconception, fueled by stories of astronomical bills and post facto charges, that ambulance service is a sustainable — even lucrative — business model. The truth, medical professionals say, is that those bills are rarely paid in full, by Medicare, private insurance or otherwise. Even in New York City, which operates ambulance services alongside its Fire Department, ambulances do not make enough money on their own to survive.

"Revenue does not come close to covering the full cost of operating E.M.S.," said Frank Dwyer, a Fire Department spokesman.

For years, paramedics and emergency technicians have warned that these unreliable revenue streams put the country's emergency medical systems in danger of collapse. The current crisis in rural service, experts say, was almost certain to arrive at some point, but the pandemic expedited it.

"It is a universal issue," said Tristan North, a senior vice president with the American Ambulance Association, which represents crews in rural and urban areas. "If you have a pretty steady volume, then you can get some efficiencies of scale and have a better idea as far as budgeting, whereas in a rural area, it's far less predictable because you have a smaller population."

Critical to an ambulance's survival is its ability to transport patients to hospitals, which allows it to bill for a transport. That limited revenue stream dried up during the pandemic, according to workers across the country, when crews were discouraged from transporting all but the sickest of patients.

Instead of transporting patients to hospitals, crews were being directed to provide care on scene, Mr. Gienapp, of the Wyoming health department, said. "E.M.S. doesn't get paid for any of that," he said.

At the same time, many of the standard sorts of medical emergencies that helped keep ambulances afloat disappeared, either because people were moving around less, or were fearful of going to a hospital and exposing themselves to the coronavirus.

"There is not sufficient E.M.S. volume in this entire service area to make this a profitable, break-even venture," Mr. Gatti, of Rock Springs, said. "This is an essential service that doesn't pay for itself."

In dense urban areas like New York or Los Angeles, there are enough people and everyday maladies that an ambulance service can come closer to sustaining itself, and enough of a tax base that cities can support it. But in places like Wyoming, the least populous state and one notoriously averse to tax increases, each missed transport in 2020 was critically lost revenue.

Unlike fire and police departments, many states do not consider ambulances to be "essential services." Only a handful of states require local governments to provide them.

For most of the country, access to an ambulance is a lottery. Some municipalities provide them as a public service, funded by taxpayers, while some contract with for-profit ambulance companies. Most rely on the willingness of volunteer companies, like Mr. Sypherd's in Washakie County, which are buoyed by a patchwork system of public and private funding streams.

But across the country, E.M.S. professionals say fewer and fewer people are willing to volunteer for the job, a phenomenon accelerated by the stress of the pandemic. Many municipalities expect volunteers to take time away from work, something few people can now afford to do.

"The donated labor is not there anymore," Mr. Gienapp said.

Same job, new patch
On May 1, Mr. Sypherd will put on a new uniform.

For more than a year, he had known Washakie County's system was unsustainable. In an effort to ensure an ambulance remained in Worland, Mr. Sypherd reached out to Cody Regional Health, a hospital system based near Yellowstone National Park, and began exploring whether the agency would take over his ambulance company.

It is a trend that is gaining traction in rural states like Wyoming: In the absence of volunteer ambulance crews or sustainable funding from local governments, some struggling ambulance services are accepting takeovers from local hospitals and health care systems.

The system is not ideal, experts acknowledge, and it could leave large swaths of rural America disconcertingly far from ambulance service. Still, faced with the alternative, many crews like Mr. Sypherd's are grudgingly accepting the help. In May, Washakie County Ambulance Service will become a Cody Regional Health ambulance company, and will keep many of Mr. Sypherd's original crew on staff.

"It's the right thing to do," said Phillip Franklin, the director of Cody Regional Health's ambulance program.

So far, Mr. Franklin and his team have taken over two struggling ambulance companies in northwest Wyoming, and they are trying to help others with their workload.

The reality, he says, is that without help from systems like Cody's, many of the ambulances in rural Wyoming will fail.

"Someone is always going to have to subsidize rural America," he said.

Emergency meeting called over ambulances

Benjamin Joe |, Lockport Union-Sun & Journal, N.Y.
December 16, 2022

https://finance.yahoo.com/news/emergency-meeting-called-over-ambulances-132000038.html?guccounter=1

Dec. 16—On mid-morning Thursday, 10 calls from Lockport were dispatched to volunteer fire companies around the area requesting assistance in the city. Three of those calls, according to South Lockport Fire Chief Chris McClune, were within an hour of each other and all of them left their companies' traditional territory wide open.

This was not a new occurrence. In front of the Lockport Common Council Wednesday, McClune had summed up the situation, backed by at least 80 first-responders in a tumultuous meeting.

"The volunteer agencies that surround the city cannot continue to be used as a primary answer to the city's EMS ambulance issues," McClune said. "As I have said before, the volunteer staffing locally, as well as regionally, and even nationally are at an all-time low."

The room-filling issue had been boiling for months and came to a head when Twin City Ambulance said they would no longer make calls from the City of Lockport a priority after Jan. 31 unless the city outfitted their ambulances and got them back into "the ambulance business."

Common Council President Paul Beakman, upon hearing of the situation on the roads — which included freezing rain and a thin coat of ice on the ground — decided that what an Emergency Common Council meeting was warranted.

"Half of Niagara County was left vulnerable," Beakman said. "Because of a problem created by the City of Lockport and it needs to be fixed by the City of Lockport."

The Emergency Common Council meeting is set for 6:30 p.m. Monday.

The meeting had previously been scheduled as a special workshop to discuss the Freed Maxick analysis. The report shows figures on the fiscal feasibility of the fire department transporting individuals to hospitals.

However, now the meeting has turned into more than a discussion and action is expected. Whether the city will contract with a commercial company, or put its own ambulances on the road, after Monday the landscape of the city's services will be changed.

5th Ward Alderwoman Kristin Barnard said she knew that a meeting was coming, but hadn't expected it to be so soon. On Wednesday she had asked for more discussion between all stakeholders, including the fire union. On Thursday, Beakman said he would invite a representative of the union to the personnel and workshop before voting in the emergency meeting. If it passes, his resolution will bring ambulance service back to the fire department.

"I do want to sit down with all parties," Barnard said Wednesday night. "I want chief there, I want Common Council there, I want all the experts and anyone who has to do with this decision to sit down and have a conversation."

Barnard said on Thursday evening that she was on the verge of pushing ambulance service forward, but wanted the agreement ironclad, in writing and to last at least two years.

"There's just a couple of things I want to clarify, because I've been doing my homework," she said.

Barnard has presented a second resolution which would have the city contract with a commercial ambulance company, but if everything is going well, she'll withdraw that resolution, she said. Otherwise it was however the council members voted.

Lockport Fire Chief Luca Quagliano said that while a weather event doesn't always occur and drive up calls, he also doesn't want to say that it was unheard of.

"It doesn't happen every day where there's three-calls at the same time," Quagliano said. "But it happens enough."

Quagliano said he was in favor of the resolution put forth by Beakman to put the two ambulances owned by fire department back into action, however, that two ambulances were not enough. He recommended a third resolution to have the LFD run ambulances and to contract for another basic life support ambulance from a commercial ambulance company, which his paramedics would ride on when needed.

As the Common Council is comprised of five Republican officials and himself, a Democratic official, Beakman said he feared that a block of Republican council members will outvote his convictions.

"This is an emergency, and I am begging everyone to support this urgent resolution," Beakman said.