

November 2022

**EMERGENCY MEDICAL SERVICES COMPREHENSIVE STUDY  
BRADFORD COUNTY DEPARTMENT OF PUBLIC SAFETY AND  
BRADFORD COUNTY EMERGENCY MEDICAL SYSTEM ASSOCIATION**



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**CONSULTANT REPORT**

**Bradford County Department of Public Safety and  
Bradford County Emergency Medical System Association  
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# EXECUTIVE SUMMARY

## PROJECT OVERVIEW

In late 2021, the Bradford County Department of Public Safety and the Bradford County Emergency Medical Services Association engaged Fitch & Associates, LLC, (*FITCH*) to assess the County's emergency medical services (EMS) resources and develop future options for a performing, sustainable EMS system. The goal of this study is to provide Bradford County with an evaluation of its existing operations and to work closely with the County's EMS partners, to ensure long-term success, viability, and sustainability of EMS operations. The comprehensive study of the current EMS system assesses whether current operations are in line with generally accepted standards and benchmarks of comparable EMS agencies based on "best practices" for local, community-based EMS systems.

Bradford County is in northern Pennsylvania, borders on New York state and is comprised of 1,151 square miles. US Census data indicates that the population declined over an 11-year period, from 62,622 residents in April 2010, to 59,892 in July 2021. Current population density is 52 persons per square mile.<sup>1</sup>

There are six (6) in county and five (5) out of county EMS agencies and two (2) fire department based QRS units providing 911 response services in Bradford County. Many of these agencies employ a mix of paid and/or volunteer responders. While volunteer hours are diminishing, volunteers remain a critical component of the response capabilities. In June 2022, *FITCH* consultants were on site and observed an EMS system that struggles to cover the service area and call volume with the available EMS assets.

Providing 911 services is costly in that it requires at-the-ready staffed response units, waiting for the next call. Very few EMS agencies can survive financially without some form of direct funding for 911 response. Bradford County agencies receive very little direct funding. They depend heavily on fees from interfacility patient transports that provide a relatively stable revenue source. That said, the number of revenue-producing transports are spread across so many agencies, that there are no opportunities for financial or operational economies of scale.

EMS personnel work for multiple EMS agencies to sustain themselves financially and to maintain ambulance staffing. Bradford County EMS agencies are stretched thin at best and as volunteers leave the system, there is an immediate concern that many agencies are not able to provide basic emergency response to their communities.

County officials and providers recognize the need for a sustainable model for the future. The County recently invested in a new 911 Communications/Emergency Operations Center. Dispatchers are certified in emergency medical dispatch (EMD) which allows them to provide protocol driven medical

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<sup>1</sup> Bradford County, PA, Census Quick Facts, US Census, [www.census.gov](http://www.census.gov), accessed October 2022.

instructions to sick and injured persons prior to responder arrival. Dispatcher EMD certification is a best practice for 911 communication centers.

Moving forward, the health and safety of Bradford residents and visitors depends on EMS leadership to continue collaboration with various partners and take steps to secure a viable countywide EMS *system*.

## **CRITICAL FINDINGS RECOMMENDATIONS**

Overall, EMS in Bradford County is provided by a collection of EMS and fire agencies that respond with limited deployment coordination, no regular reporting of response times, and no transparent clinical oversight. While communities take pride in the local agencies, residents, visitors, and businesses in the County are not well served compared to the common expectations for 911 emergency medical response in the US. Ambulance responses to emergencies approximate 27 minutes which is longer than is clinically desirable. Achieving a 20-minute response time for 90% of 911 calls would bring the community in line with rural community expectations.

### **No Coordination and No Single Entity Is Responsible**

There is no one entity that is responsible to coordinate and provide accountability for the overall system that includes at its core, 911 dispatch, first response, and ambulance transport. The patchwork of EMS agencies barely meets the accepted benchmarks for an EMS system. Attachment A provides a detailed review of 50 benchmarks against which EMS systems are measured. The current and any future system will benefit greatly by the designation of a single individual or entity that establishes countywide response and clinical metrics and monitors performance for the benefit of patients. Funding a designated individual to initiate coordination is a minimal action that the County could take.

### **Hard to Serve Areas and No Response Standards**

Bradford County encompasses 1,151 square miles that form a part of the Allegheny Plateau Region. The prevailing character of the County is that of a very rugged country. Route 6 traverses the county east to west and Route 220 traverses north to south, but there are limited access roads and large wilderness areas.

The area is defined as “rural” whereby “rural is when the number of people per square mile within the county . . . is fewer than 291.”<sup>2</sup> The US Census estimates Bradford’s population as of July 2021 at 59,892 which translates to 52 persons per square mile — significantly less than the definition for “rural”. City-Data.com indicates that 28% of Bradford’s population is centered in urban areas while 72% is in rural defined areas. It is difficult to provide emergency services in an efficient manner to large rural areas with residents spread across many miles. There is little opportunity to leverage economies of scale due to the sheer distance between the communities.

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<sup>2</sup> Rural Urban Definition – Center for Rural Pennsylvania [www.rural.pa.gov](http://www.rural.pa.gov) and census and City-Data.Com Bradford County, PA, accessed October 2022.

The geographic nature combined with sparse population density have resulted in response times to emergencies are longer than clinically desirable. Additionally, there is not a county-wide or regionally accepted EMS unit move-up plan in place to provide timely response when ambulances are on long distance calls and patient transports. Agencies are allowed up to 8 minutes (in two 4-minute tone-outs) to acknowledge a staffed ambulance is enroute. After the 8-minute grace time, another agency is alerted. This practice is not advisable and there are ways to provide more reliability for responses.

EMS agencies spring up to serve their specific communities, but often struggle with staffing and financial support. Based on *FITCH's* experience, it is typical, but not desirable, for this type of service area to have no performance metrics for the system. In fact, the idea of Bradford County having a system — “a set of things working together as parts of a mechanism or an interconnecting network” — is nonexistent.<sup>3</sup> That said, local communities and businesses recognize that the safety and welfare of their residents and visitors depends on efforts to create synergy between agencies and move towards that system definition.

## **Volunteer Agencies Near Collapse**

Many of the all-volunteer EMS agencies have or are on the brink of collapsing. With the increased call volume, decrease in volunteerism, the increased education requirements, increased time commitment, and lack of funding, the volunteer EMS agencies are struggling to maintain staff. Some agencies have personnel that staff for other volunteer agencies to help with their staffing. As has already happened in the County, volunteer EMS agencies have failed to provide service due to the lack of volunteers and have been forced to close or merge. With the continually decreasing number of volunteers who work in their community and that are available to respond to emergency's during the day coupled with limited to no municipal funding, it has created the perfect storm for a continued reduction of volunteers in the Bradford County EMS system.

## **EMS Agencies Struggle to Fund and Maintain Staffing**

There is no robust funding for EMS agencies. *FITCH's* interviews with various agency leaders indicated that most survive on fee for services, grants, and donations with little direct funding from local jurisdictions. There was a sense that many of the agencies operate on a proverbial shoestring with staffing at critically low levels. The effects of COVID on the workforce only intensified the already fragile staffing situation. Several of the agencies stated that the loss of one or two members could cause their agencies to falter.

The agencies report significant struggles with recruitment and retention. It is understood that shortages of health care personnel are experienced throughout the US. Agencies that employ Emergency Medical Technicians (EMT), Advanced Emergency Medical Technicians (AEMT), and Paramedics (EMTP), report difficulty finding new personnel. There are several reasons, but specifically in Bradford County,

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<sup>3</sup> Definitions from Oxford Languages, [www.oxfordlanguages.com](http://www.oxfordlanguages.com), accessed October 2022.

the situation is worsened due to salaries and benefits that are not competitive, compounded by better opportunities in nearby states that provide certification reciprocity.

Local EMS agencies report significant efforts to train entry-level emergency responders in the area. Bradford County struggles with EMS education due primarily to a lack of local educational institutions and low enrollments in the existing institutions. Additionally, EMS educators report low testing rates after completing the course, and below average pass-rates on EMR and EMT National Registry testing.<sup>4</sup>

EMS education has suffered significantly during the COVID-19 pandemic when all forms of education were halted or altered. Although there were some remote learning options available, the full impact on the profession may not have been fully realized.

There is no local advanced level EMS education at the paramedic level in the County or the region. Students must travel at least an hour to obtain training without any financial incentives. Many of the closest paramedic education facilities are in the state of New York and first require students to be certified in the state of New York before seeking reciprocity in Pennsylvania. Obtaining reciprocity is a time and paperwork impediment. While the Pennsylvania Department of Health Bureau of EMS has a defined process, delays and complications deter individuals from completing the process and obtaining reciprocity to practice in Pennsylvania.<sup>5</sup>

Reliable and sufficient funding is needed to attract and maintain response personnel whether paid or volunteer. *FITCH's* financial model indicated that to provide paid personnel and achieve a reasonable response time would require \$1.1 million in funding across the system.

## RECOMMENDATIONS

- Eliminate the wait time for sending an ambulance to a request for service. A staffed ambulance should be immediately dispatched, in conjunction with the first due agency, to ensure, at a minimum, a resource is responding immediately to a citizen's request.
- Implement an EMS Authority as option for Countywide EMS operational deployment, funding, and sustainability.
- Designate and fund a single individual/entity to establish response time and service expectations for all EMS agencies.
- Publish response times by agency to provide transparency regarding system performance. Include incidents of "scratched" when an agency cannot staff an ambulance within a specified time frame. Regular reporting will inform the community and help to set community expectations for emergency services.

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<sup>4</sup> Pennsylvania utilizes the National Registry of EMT's psychomotor and cognitive testing for certification in the Commonwealth. While there is the possibility that psychomotor testing could be eliminated, it is not likely to have a significant impact on EMS education in Bradford County.

<sup>5</sup><https://ems.health.state.pa.us/Registry/Help/JobAids/EMS%20Registry%20Job%20Aid%20for%20Certification%20by%20Endorsement.pdf>.

- Require agencies that do not regularly staff EMS units to mark up or provide real-time staffing status with County 911. Should a unit not have immediate available staffing to respond immediately, a second agency that has available staffing should be part of the initial alert. Either agency can be cancelled should they be closer and have a unit rolling.
- Implement Automatic Vehicle Location (AVL) system on all responding units to facilitate closest unit dispatch.
- Engage with existing workforce training organizations to find solutions to responder educational and staffing issues.<sup>6</sup>
- Develop a countywide funding plan and set parameters and requirements for use of funds. Examples of funding formulas are found in Attachment C.
- Continue to fund emergency medical dispatch certification for County 911 dispatchers.

## **OPTIONS SUMMARY**

Four options are detailed in the Options for Change Section of this report. A summary of the options is provided below.

### **Option Zero — Support Status Quo**

While there are actions that the County can take with little to no cost, supporting the status quo does little to move the system forward. Response efforts will remain uncoordinated and non-uniform across the County. At any given time, sick or injured persons may not receive emergency medical care in a clinically timely manner. There are concerns that volunteer organizations may falter as the trend of declining responder hours continues.

### **Option One — Implement Countywide EMS Oversight and Develop County-wide Funding Plan**

The Bradford County system would benefit by establishing (and funding) a designated entity and/or individual, initially charged with managing the coordination of ambulance response throughout the County. This entity would work with existing providers to establish performance metrics, formalize, and publish response time metrics, and deployment considerations. The entity would seek solutions to mitigate EMS education and staffing challenges and foster system-wide collaboration. Setting up purchasing groups and other efficiency measures are also goals of this option.

Researching and developing a countywide funding plan is an important effort for future sustainability. From both a legal and political perspective, it may take considerable work to determine what funding

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<sup>6</sup> Examples of organizations that may be of assistance are the Northern Tier Regional Planning and Development Commission, Penn State University Continuing Education, Bradford County Action, and PA Career Link, accessed October 2022.

measures can be implemented. Once successful and whatever method is determined, participation by EMS agencies would be dependent upon complete financial transparency.

### **Option Two — Establish an EMS Authority**

The EMS Authority would be designed and implemented to include any number of municipalities within the County agreeing to formalize an effort for the provision of EMS.

This Option offers a solid opportunity for improvements with a minimal amount of disruption. EMS agencies with substantial local support can thrive while all agencies can seek savings through group purchasing contracts and other efficiencies. The Option also allows a *systems* approach to evolve with higher levels of coordination. At some point, agencies may understand that they are more likely to survive by working together to provide coordinated emergency services in support of community well-being. *FITCH's* research indicates that at least eight EMS authorities currently operate within Pennsylvania.

### **Option Three — A Single Provider System**

A single provider system provides the opportunity for efficiencies on multiple levels. Staffing to demand within an organization can provide more efficient geographic and temporal coverage. Services can be contracted to a single entity (whether independent, not-for-profit, or healthcare system based) or provided by the County. The single provider option provides economies of scale and eliminates redundant expenditures. This option provides opportunities to create a system that can create and fund solutions to many of the problems that plague the current system.



## METHODOLOGY

*FITCH* collected data using multiple resources and methods to analyze historical call volume, organizational data, and other information as provided by agencies serving Bradford County. Bi-weekly meetings were initiated at the onset of the consultancy. Data counts were provided by the Bradford County Department of Public Safety 911 computer-aided dispatch (CAD) system. Throughout the project there were various stages of involvement from most of the EMS agencies in the County.

Prior to the site visit, *FITCH* collected, processed, and validated data for EMS responses. Consultants worked to obtain data for the completion of the Information Data Request (IDR) from each EMS agency.

Not all EMS agencies participated in a timely fashion which caused a delay in receipt, review, and analysis of data. Many of the responses to *FITCH's* Information Data Request (IDR) were incomplete. Based on the limited information provided, *FITCH* verified information with the Project Steering Committee so that the project could move forward.

The data utilized for this report focused specifically on call volume. Each event is treated as an individual call for service without consideration of the number of units responding. Audits of the data files were first conducted to reduce duplication of events and to identify anomalies in the base data that would impact analysis. It should be noted that no data values were changed or modified in the cleanup process. Some spelling and abbreviation differences were adjusted in the names of towns and jurisdictions, only where it was obvious and necessary to provide the most accurate counts aggregated by geographic region.

Datasets that contained geographic coordinates were modified to latitude/longitude format. Datasets that did not contain coordinates were geocoded using an online service. Since this geocoding process is not 100% reliable, addresses that could not be reliably geocoded were dropped from the datasets.

Once an official dataset was established and agreed on, we completed our analysis steps and provided the output for consideration in this final report.

*FITCH* evaluated response time performance for each EMS agency in Bradford County or out of County agencies with primary coverage area within the County. Travel times of 10-minute, 15-minute, 20-minute, and 30-minute intervals were modeled. Once response time performance was determined, analysis was performed to strategically match supply with demand and ensure the appropriate number of locations are utilized for ambulance deployment, to meet a prescribed response objective. The primary objective is to ensure that geographical deployment and demand are staffed appropriately with the correct level of resources.

Over the project timeline, *FITCH* and Bradford County representatives met virtually to discuss findings and options for results-based solutions.

## CURRENT SYSTEM DESCRIPTION

Bradford County, as part of the EMS system in the Commonwealth of Pennsylvania, reports to, or is part of one of 13 EMS regions. These regional organizations are contracted by the Pennsylvania Department of Health, Bureau of EMS, to provide regulatory oversight to specific regions within the Commonwealth. Bradford County is associated with EMS of Northeastern Pennsylvania Inc<sup>7</sup>. The organization is located in Jenkins Township and provides oversight for seven counties: Bradford, Lackawanna, Luzerne, Pike, Susquehanna, Wayne and Wyoming. The organization's primary focus is to provide regional EMS regulatory, compliance, education, certification, and protocol distribution as a contracted entity from the Pennsylvania Department of Health Bureau of EMS.

EMS agencies in Bradford County are organized and respond based on jurisdictional boundaries. Operating in this manner means that the jurisdictional boundaries often hinder responses and the closest EMS unit may not be sent to an emergency due to municipal resolutions. Additionally, Bradford County 911 does not deploy with an Automatic Vehicle Locator (AVL) system which can ensure that the closest EMS unit is sent to an emergency call, either in a primary or secondary capacity.

## CAREER AND VOLUNTEER EMS AGENCIES

Bradford County 911 Communications Center reports that they dispatch 25 volunteer fire departments that may or may not provide medical first response services. The 911 Center also dispatches for three (3) Advanced Life Support (ALS) and seven (7) Basic Life Support (BLS) ambulance services, not including the fire departments and police agencies within the County.<sup>8</sup> Each of these agencies providers mutually agreed upon coverage are with specific municipalities/townships within Bradford County that is established by municipal resolution. They are fee-for-service based and may receive direct or indirect funding from their jurisdiction. They are organized as either not for profit or healthcare-based entities.

The volunteer and mixed paid and volunteer EMS organizations are all stand-alone 501(c)(3) organizations that are independent of any jurisdiction and function as their own entity. These organizations rely heavily on the community they serve for funding beyond any fees collected from transport activity. All of the EMS organizations in Bradford County are fee-for-service based and additionally offer a subscription service to residents. Figure 1 below is a list of the EMS agencies that provide ALS and BLS services.

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<sup>7</sup> <https://www.emsnp.org/index.html>

<sup>8</sup> 911 Communications Services, Bradford County Public Safety Department, Official Website, public-safety-bradfordcogis.hub.arcgis.com, accessed October 2022.

**Figure 1. EMS Agencies Serving Bradford County**

<b>EMS Agency</b>	<b>Service Level License<sup>9</sup></b>	<b>Located In or Out of County</b>	<b>Personnel</b>
Greater Valley EMS	ALS, BLS	In County	Combination
Western Alliance EMS	ALS, BLS	In County	Paid
Guthrie EMS	ALS, AEMT, BLS	In County	Paid
Tri-Township EMS	BLS	In County	Volunteer
South Creek EMS	BLS	In County	Volunteer
HOPS EMS	BLS	In County	Volunteer
Little Meadows EMS	BLS	Out of County	Volunteer
Dushore EMS	BLS	Out of County	Combination
Meshoppen EMS	BLS	Out of County	Volunteer
Commonwealth EMS	ALS	Out of County	Paid
Erway Ambulance	ALS	Out of County	Paid

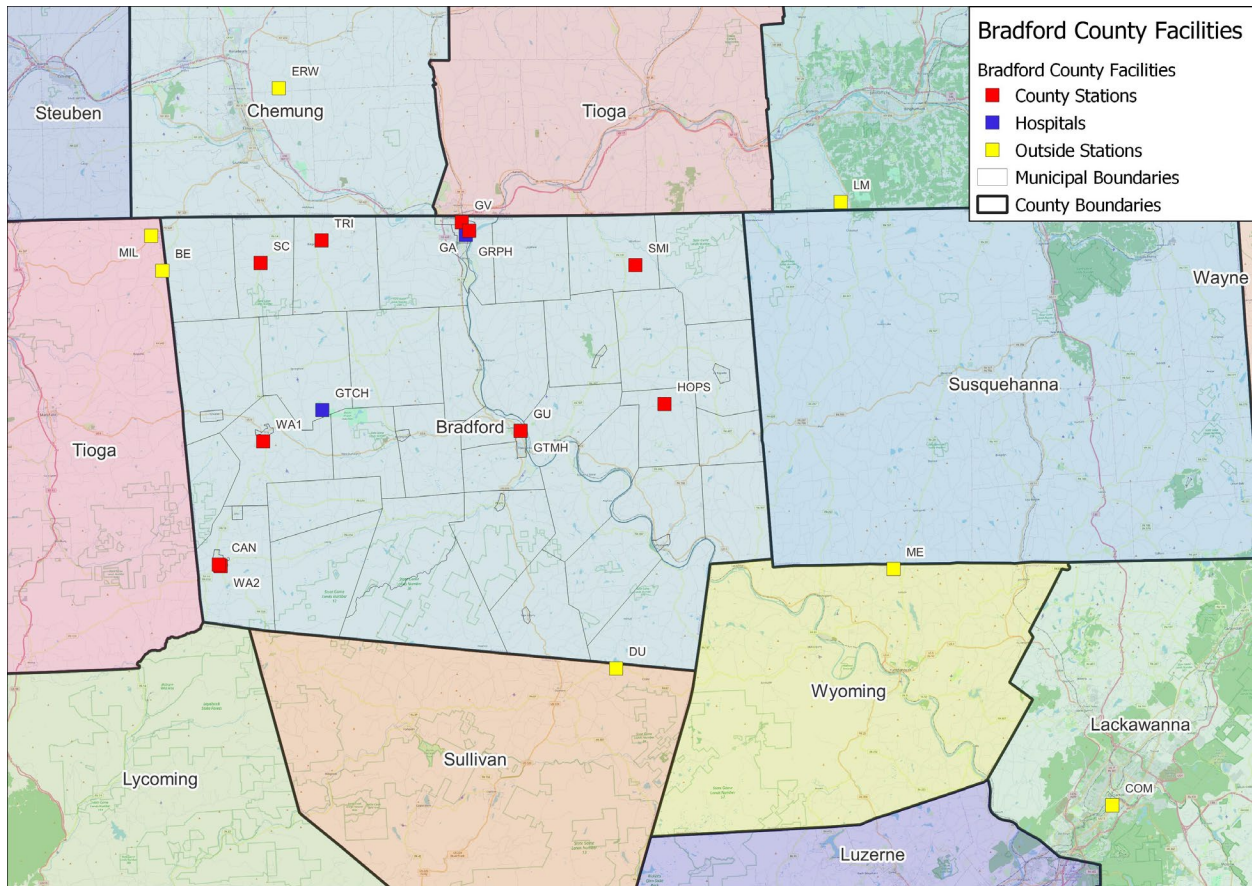
Four additional agencies provide Quick Response services at the Emergency Medical Responder (EMR) or Basic Life Support (BLS) levels: Canton Fire, Smithfield Fire, Big Elm and Millerton. The area is also served by Guthrie Air, critical-care helicopter services.

There are three hospitals located in the County, providing varying levels of medical care. Figure 2 below indicates the hospital locations. All three hospitals are part of the Guthrie Health system that serve northern and southern Pennsylvania and central New York. The largest of the three hospitals in Bradford is the Robert Packer Hospital, located in the Borough of Sayre, directly bordering on the northern county and state border. Figure 2 below indicates hospital locations and the in-county and out of county EMS agency station locations.

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<sup>9</sup> Advanced Life Support (ALS), Basic Life Support (BLS)

**Figure 2. Hospitals and EMS Stations<sup>10</sup>**



Effective September 1, 2022, the EMS Association, the Fire Chiefs Association, and the County published changes to EMS responses that would no longer require EMS responses to a subset of fire related 911 calls. This change will eliminate some number of unnecessary EMS responses and maintain readiness for more critical responses. The policy change is referenced in Bradford County Office of Public Safety 9-1-1, Personnel Policy and Procedure, Policy number 2022-02. The change will be evaluated once there is sufficient data for review.

## **FIRE DEPARTMENT QUICK RESPONSE SERVICES**

Currently, Bradford County is serviced by four fire department agencies that provide Quick Response Services (QRS) at the Emergency Medical Responder (EMR) or Basic Life Support (BLS) levels: Canton Fire, Smithfield Fire, Big Elm, and Millerton. These agencies are certified by the Pennsylvania Department of Health Bureau of EMS and required to meet certain regulations for licensure just as any other licensed EMS agency. These agencies are required to meet all standards set forth in the EMS regulations. These agencies provide medical first response service based on best effort and are

<sup>10</sup> Guthrie EMS agency is in the same location as Guthrie-Towanda Hospital. The red station square obscures the hospital location.

primarily utilized to decrease the time it takes for a licensed emergency medical provider to arrive on location. There is no delineation for response request where the QRS agency is dispatched to high acuity calls only. The QRS agency's all primarily provide fire/rescue services and are all comprised of volunteers to provide the coverage. Due to the QRS agency's being fire department based they all receive some form of tax support to aid them financially.

*FITCH* did not evaluate whether adding additional QRS services would benefit the EMS system within Bradford County. The staff and resources from the QRS agencies were not added into any of the staffing to demand analysis as medical first response and QRS is maintained on a best effort mentality. *FITCH* recommends that no changes be made to the existing QRS services, other than ensuring that they meet the regulations and standards as set forth by the Pennsylvania Department of Health Bureau of EMS. *FITCH* believes that medical first response could benefit the community. However, if the Fire Departments want to expand this service, they will need to ensure it fits into its current funding and does not fall over to the county. Furthermore, they would need to ensure the organization and personnel meet the state requirements for service. Lastly, the medical first response agencies should only be dispatched to the most critical calls. Medical first response should not be overtaxed on low-acuity calls that do not require a specific intervention.

## **COMMUNITY DEMAND**

EMS call volume for all agencies responding into Bradford County has remained somewhat flat over the three-year period for CY2019 through CY2021 with minor declines in CY2021. Most EMS systems experienced a decline in calls for service during CY2021 corresponding with COVID-19 pandemic. CY2021 data indicates there were 10,812 EMS responses county-wide or an average of 29.6 responses per day. Figure 3 below indicates the totals for all agencies in the Bradford County (All) line, as well as the information for each reporting agency. Call volumes include both 911 and interfacility transport request for services. County 911 does not consistently record 911 versus interfacility calls. Improved documentation of the call type will be important to better understand staffing needs going forward.

Smithfield Ambulance and Ulster Ambulance were 100% volunteer organizations and were not able to maintain staffing. The two entities merged into Tri-Township EMS.

**Figure 3. Call Volume by Agency and Priority**

Agency	Reporting Period	Number of Calls	Number of Responses	Number Arrived on Scene	Average Responses per Call	Average Calls Per Day	Average Responses per Day	90% Response Time
BRADFORD COUNTY (ALL)	2019	12491	11479	10042	1.09	34.22	31.45	0:27:53
	2020	12479	11559	10123	1.08	34.10	31.58	0:27:35
	2021	11953	10812	9405	1.11	32.75	29.62	0:27:35
DUSHORE FIRE/EMS	2019	115	101	89	1.00	0.32	0.28	0:27:22
	2020	108	102	86	1.00	0.30	0.28	0:31:10
	2021	145	137	111	1.00	0.40	0.38	0:27:52
GREATER VALLEY EMS	2019	4842	5243	4771	1.18	13.27	14.36	0:21:20
	2020	4864	5336	4842	1.18	13.29	14.58	0:21:06
	2021	4686	5042	4610	1.20	12.84	13.81	0:22:54
HOPS AMBULANCE	2019	199	203	172	1.26	0.55	0.56	0:38:55
	2020	179	176	165	1.23	0.49	0.48	0:37:14
	2021	180	176	157	1.18	0.49	0.48	0:34:01
LITTLE MEADOWS	2019	80	81	65	1.19	0.22	0.22	0:23:04
	2020	84	78	72	1.20	0.23	0.21	0:23:58
	2021	86	82	57	1.15	0.24	0.22	0:29:29
GUTHRIE EMS	2019	2868	2963	2461	1.10	7.86	8.12	0:34:32
	2020	3122	3281	2697	1.12	8.53	8.96	0:33:01
	2021	2976	3042	2478	1.12	8.15	8.33	0:34:44
RIDGEBURY AMBULANCE	2019	167	157	156	1.07	0.46	0.43	0:26:03
	2020	226	197	198	1.02	0.62	0.54	0:27:23
	2021	165	148	148	1.04	0.45	0.41	0:25:40
SMITHFIELD AMBULANCE	2019	188	161	150	1.10	0.52	0.44	0:26:03
	2020	139	128	127	1.08	0.38	0.35	0:30:14
	2021	8	6	6	1.13	0.02	0.02	0:31:16
SOUTH CREEK AMBULANCE	2019	89	74	76	1.17	0.24	0.20	0:33:23
	2020	80	72	70	1.13	0.22	0.20	0:23:25
	2021	108	108	100	1.12	0.30	0.30	0:25:47
ULSTER AMBULANCE	2019	222	199	162	1.09	0.61	0.55	0:25:33
	2020	145	140	118	1.07	0.40	0.38	0:28:29
	2021	57	56	46	1.11	0.16	0.15	0:23:17
WESTERN AMBULANCE	2019	2007	2297	1940	1.22	5.50	6.29	0:27:53
	2020	1784	2049	1748	1.22	4.87	5.60	0:28:05
	2021	1830	2015	1692	1.19	5.01	5.52	0:28:20

CY2021 response times at the 90% percentile (nine times out of ten) indicate a 27-minute 35 second response time across all entities countywide. Responses by individual agencies range from a low of 22 minutes 54 seconds to a high of 34 minutes 44 seconds. From a clinical perspective, sick or injured patients are experiencing longer response times than are advised for emergency situations.

The attached Data Report offers more in-depth analysis of responses by day, week, time of day, month, and various call types.<sup>11</sup> Figure 4 provides information related to the total number of calls per day and the average number of calls per day by agency, by month. There is an individual breakdown for each agency included in the Data Report. At the time of data collection, processing the data set for 2021 was not complete and this is reflected in the months of November and December. Of note, for 2020 and

<sup>11</sup> EMS response data was collected from the: Bradford County Department of Public Safety 911 Center.

2021, the busiest month is October. It is unknown if this is connected to COVID-19 pandemic surge in patient volumes or some other reason, such as the seasonal influx of visitors, or some other illness. Following and tracking surges annually can help to determine the best way to meet demand by upstaffing additional resources. It should be noted that collaboration of resources for staffing amongst EMS agencies does not occur currently among the agencies.

**Figure 4. Number of Calls, Average Number Call per Day by Agency, Reporting Period & Month**

Agency	Metric	Reporting Period	January	February	March	April	May	June	July	August	September	October	November	December
BRADFORD COUNTY	Number of Calls	2019	887	852	949	845	865	980	925	960	937	886	819	872
		2020	871	828	801	721	835	831	1015	944	889	1059	913	1024
		2021	1050	878	977	902	1017	1032	1061	1083	1058	1076	107	
	Average Number of Calls per Day	2019	28.61	30.43	30.61	28.17	27.90	32.67	29.84	30.97	31.23	28.58	27.30	28.13
		2020	28.10	28.55	25.84	24.03	26.94	27.70	32.74	30.45	29.63	34.16	30.43	33.03
		2021	33.87	31.36	31.52	30.07	32.81	34.40	34.23	34.94	35.27	34.71	3.57	

<sup>1</sup>Reporting period 2020 contained 366 days due to inclusion of leap year date February 29. All other reporting periods contained 365 days. Data from 2021 appears to have no data for November and December.

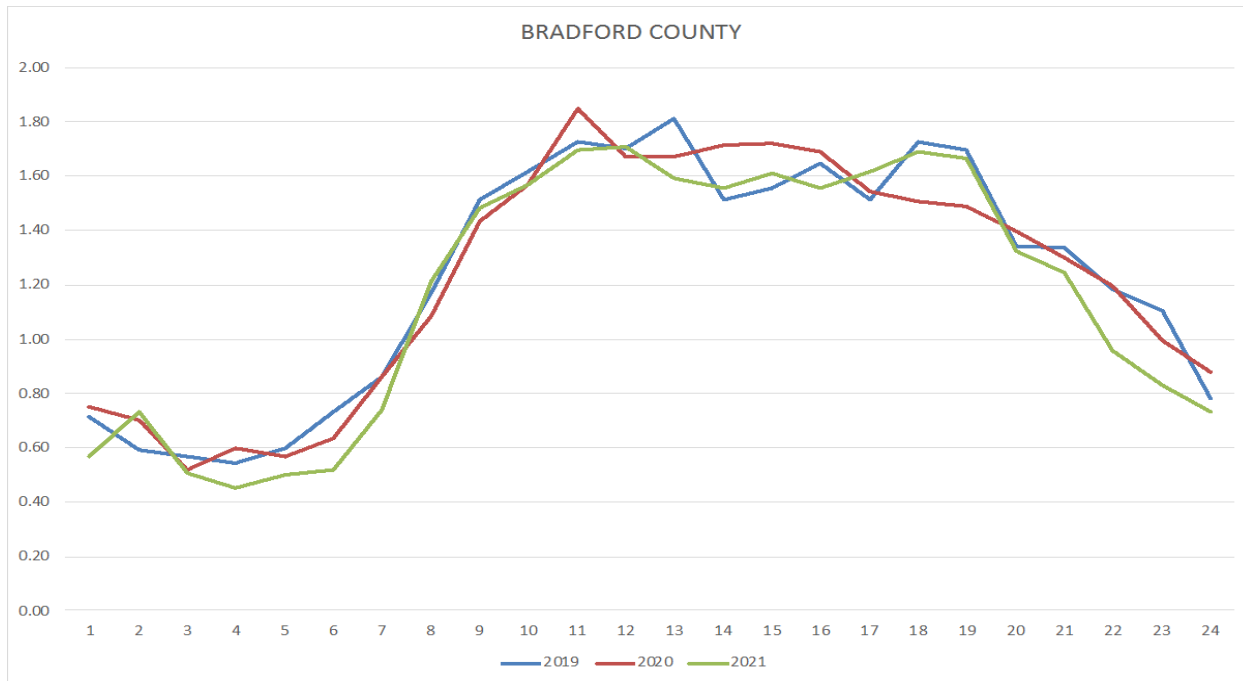
Figure 5 below reflects the call volume per day of week for the reporting period that was analyzed. In 2019 and 2021 the busiest day of the week is Friday, followed by Monday.

**Figure 5. Number of Calls for All Agencies, Reporting Period, and Day of Week**

Agency	Metric	Reporting Period	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
BRADFORD COUNTY	Number of Calls	2019	1401	1572	1506	1536	1500	1727	1535
		2020	1437	1591	1500	1521	1550	1588	1544
		2021	1368	1473	1503	1411	1439	1657	1390
	Average Number of Calls per Day	2019	26.94	30.23	28.42	29.54	28.85	33.21	29.52
		2020	27.63	30.60	28.85	28.70	29.25	30.54	29.69
		2021	26.31	28.33	28.90	27.13	27.67	31.26	26.73

Figure 6 below reflects the call volume by hour of day for the reporting period that was analyzed. In all years evaluated, the trends seem to closely mimic the year prior. Although there were some slight spikes throughout the hours of the day that do not match the year prior or forward, there are not any notable spikes that do not correlate.

**Figure 6. Number of Calls by Hour of Day by Reporting Period**

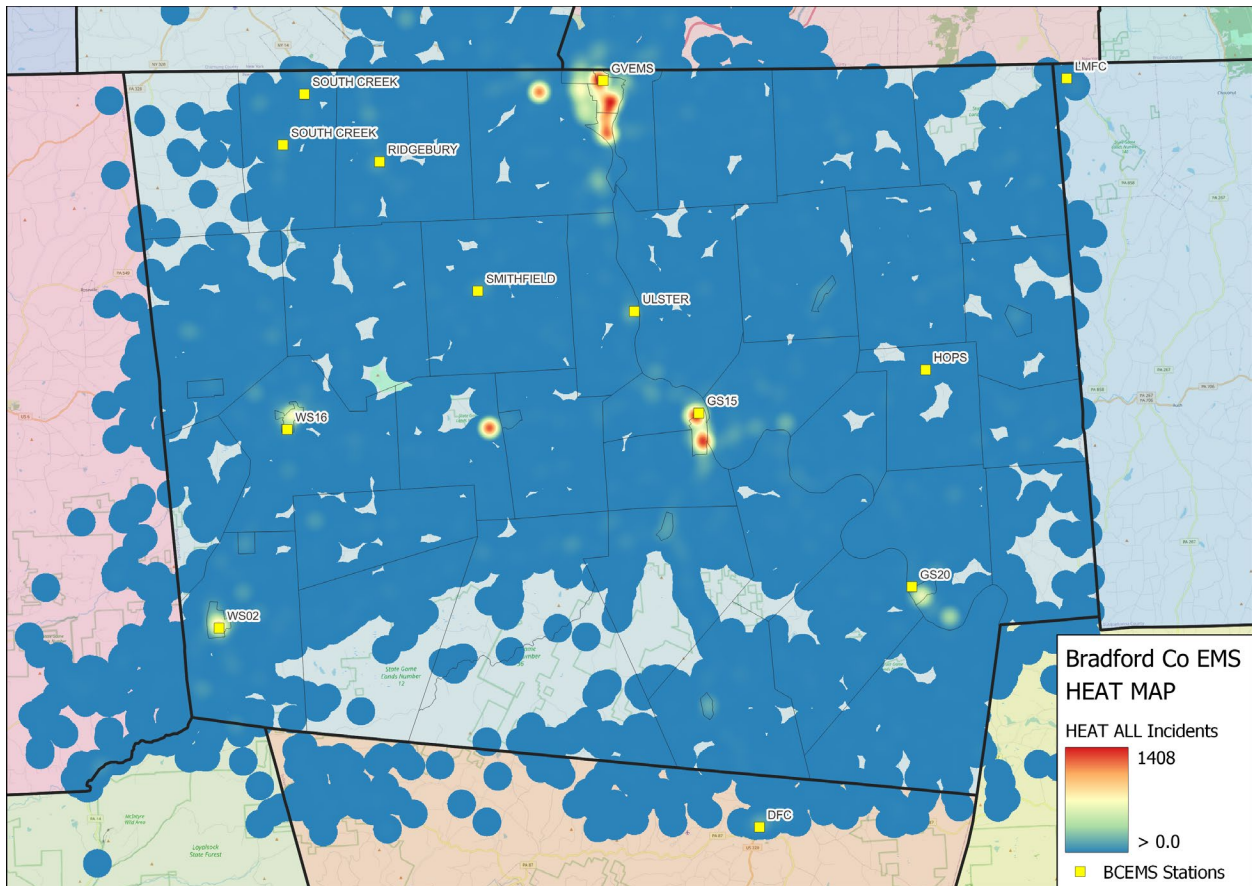


To evaluate the current density levels for responses, *FITCH* utilized heat mapping to evaluate all emergency 911 calls for service. To ensure proper unit deployment, an understanding of where the highest level of risks or volume is required. This model allows for informed decisions to be made on performance levels of response.

Color coding indicates various levels of responses within the County. In Figure 7 below, the areas in red indicate a “hot spot” of greater than 1,408 responses in that year. Blue areas are predominately rural and indicate a mostly rural response of greater than one call and less than 1,408 calls in that year. Areas absent of color received no calls or requests for service in that year.

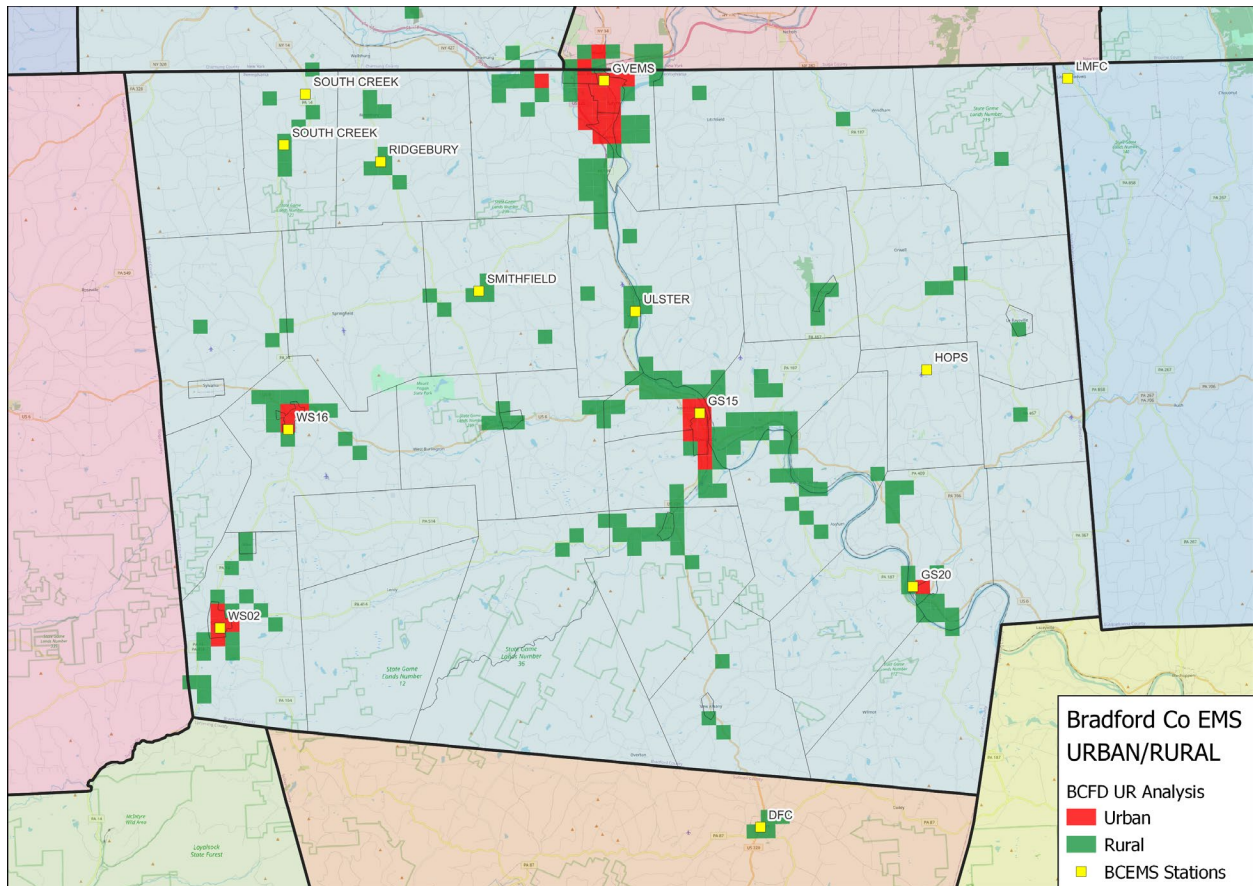


Figure 7. Urban/ Rural Heat Map



To evaluate Urban/Rural density levels for response zones, *FITCH* utilized a commensurate risk mapping to evaluate call activity. This model allows for informed decisions to be made on performance levels of response. Areas designated with a commensurate risk mapping as urban response density (in red) represent two calls per month within the one-kilometer cell and greater than or equal to four calls per month in the eight adjoining cells. Rural designated areas are coded in green and represent .25 calls within the one-kilometer cell and one call greater or equal to per month total in the eight adjoining cells. Where there is no color, these areas do not meet either of the above criteria and would be considered wilderness response density zones. Figure 8 below presents the commensurate mapping results.

**Figure 8. Urban/Rural Analysis Based on Call Volume**



As usual, city centers and the more urban areas correlate to the hot spots on the heat map.

## **BEST PRACTICE BENCHMARKING**

EMS systems exhibit eight components each of which is comprised of multiple benchmarks. *FITCH* reviewed the Bradford County system against these benchmarks. For example, Medical First Response benchmarks focus on a coordinated response supervised by a single system medical director, transparent reporting of response times at the 90<sup>th</sup> percentile, automatic defibrillator access and smooth transition of patient care. The detail of the components and benchmarks are provided in Attachment A. The EMS system components benchmarked are as follows:

1. Communications
2. Medical First Response
3. Medical Transportation
4. Medical Accountability
5. Customer/Community Accountability
6. Prevention & Community Education
7. Prevention & Community Education
8. Ensuring Optimal System Value

Overall, EMS in Bradford County is not coordinated on many levels. County 911 services are the sole area of the Bradford entities that operates with a level of coordination not witnessed in the other system components. Accountability and transparency may exist on an agency-by-agency basis, but it is not exhibited beyond jurisdictional boundaries. Since multiple agencies operate across the County with sparse population, there are inefficiencies in the form of redundant facilities, supply stocks, and management overhead. Opportunities for group purchasing and did not appear to be practiced. Due to these issues and even without complete financial disclosures, *FITCH* believes that the agencies are not providing optimal system value.

## 911 DISPATCH CENTER

Bradford County Department of Public Safety – 911 Communication Center provides dispatch services across 14 boroughs and three townships within the County boundaries. The Center dispatches for area fire departments, police agencies, EMS agencies both ALS and BLS, the Sheriff's Department, and six other County Departments. The County recently made a significant investment in the 911 Dispatch Center. This investment will allow for strategic planning efforts as data is collected in a meaningful way and help EMS to evolve and be managing in a coordinated manner.

Dispatchers are certified in emergency medical dispatch (EMD) and provide pre-arrival instructions to callers. EMD certification is considered a standard of care in the United States.

The Bradford County 911 Communications Center is the sole Public Safety Answering Point (PSAP) for the County and maintains interoperability with surrounding counties in both Pennsylvania and New York. Recently, the County changed 911 system vendors from ProQa - Priority Dispatch to Powerphone.

Bradford County dispatchers are hampered by several specific issues in the 911 Center:

- Dispatchers have no visual on available unit locations, which would enable closest unit dispatching. This is currently a manual process that is tracked on a spreadsheet and is displayed on a monitor in the dispatch center.
- Agencies do not have an automatic vehicle locator (AVL) system in place that allows for the dispatchers to verify an EMS unit's location and to locate the closest available EMS unit to respond to an emergency.
- There is no process in place to indicate a volunteer EMS agency's staffing availability for a guaranteed response to emergencies.<sup>12</sup>
- There is no coordinated medical direction between EMS agencies to ensure continuity of care throughout all EMS coverage areas.

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<sup>12</sup> Volunteers typically communicate via phone/internet. *FITCH* was advised that they use Facebook messenger to communicate who will respond on a call-by call-basis. Few volunteers are in station to take calls while others respond at will. Dispatchers do not know staffing of many of the EMS units in the county.

## STAFFING TO DEMAND ANALYSIS

To create response times that will better serve Bradford County, *FITCH* created a community baseline response for which all EMS agencies should be held accountable. The response times are based on standards from the Commission on Fire Accreditation International (CFAI) guidelines and a review of historical risk. CFAI provides guidance to emergency service agencies regarding performance measurements and establishing a benchmark for purposes of evaluating response times. The standards are determined in two parts: 1) determining the population density zones City/Township and 2) determining the right level of response times for the community.

The components of response that are typically measured are as follows:

- Dispatch Time — the time interval from initial call from the requestor until the first dispatch notification for a unit to respond.
- Turnout Time — the time interval from when response personnel receive the dispatch notification until there is a staffed ambulance responding.
- Travel Time — the time interval from the staffed ambulance initiates response until it arrives at the scene of the incident.
- Dispatch to First Unit Arrival – is a cumulative time for the time components of Turnout and Travel times. This is the time controlled only by the responding resources and not the Communications Center.
- Hello-to-Hello Time — the cumulative time for the components above that represents a call received in the Communications Center until response personnel arrive on scene with the patient. From the caller/patient’s perspective, this is the most important time interval.
- Time-on-Task – the time interval from initial dispatch of a response to the time the unit becomes available for another response. A unit may become available following a transport to the hospital, treat and release on on-scene, canceled, etc.

The EMS agency’s response time begins when they receive a request for response from the Bradford County 911 Center, where both a full address and call type have been determined. Then the “clock begins” for the EMS agency. The clock stops when the unit arrives on scene of an incident or is in staging awaiting another public safety official due to an unsafe scene. Figure 9 below indicates the CFAI response time baseline times for alarm handling, turnout time and travel time.

**Figure 9. Response Times Baseline**

***Creating Community Baselines***

For the purposes of definition and the need to establish a common benchmark for purposes of evaluating response time accreditation criteria, the following times should be made available and used in defining base line norms for a candidate agency:

Aggregate (Total) Response time -

A. Alarm handling: 60-second/90% benchmark  
90-second/90% baseline

B. Turnout time: 80-second/90% benchmark (Fire & Special Operations response)  
60 Seconds/90% benchmark (EMS response)  
90-second/90% baseline

C. Travel time: Based on criteria for the different risk categories and within guidelines provided for service area and/or population density. See chart to follow.

Total response time: A+B+C

The EMS agency will be held responsible for the Turnout times and Travel times. Turnout times are based on the baseline performance of 90 seconds, 90% of the time. For travel time, methodology in the above figure is used.

**Figure 10. Response Times Baseline (continued)**

**Metropolitan** – an incorporated or unincorporated area with a population of over 200,000 people and/or a population density over 3,000 people per square mile.

Metropolitan	1st Unit	2nd Unit	Effective Response Force
<b>Benchmark</b>	4 minutes	8 minutes	8 minutes
<b>Baseline</b>	5:12 minutes	10:24 minutes	10:24 minutes

**Urban** – an incorporated or unincorporated area with a population of over 30,000 people and/or a population density over 2,000 people per square mile.

Urban	1st Unit	2nd Unit	Effective Response Force
<b>Benchmark</b>	4 minutes	8 minutes	8 minutes
<b>Baseline</b>	5:12 minutes	10:24 minutes	10:24 minutes

**Suburban** – an incorporated or unincorporated area with a population of 10,000 to 29,999 and/or any area with a population density of 1,000 to 2,000 people per square mile.

Suburban	1st Unit	2nd Unit	Effective Response Force
<b>Benchmark</b>	4 minutes	8 minutes	10 minutes
<b>Baseline</b>	5:12 minutes	10:24 minutes	13 minutes

**Rural** – an incorporated or unincorporated area with total population less than 10,000 people, or with a population density of less than 1,000 people per square mile.

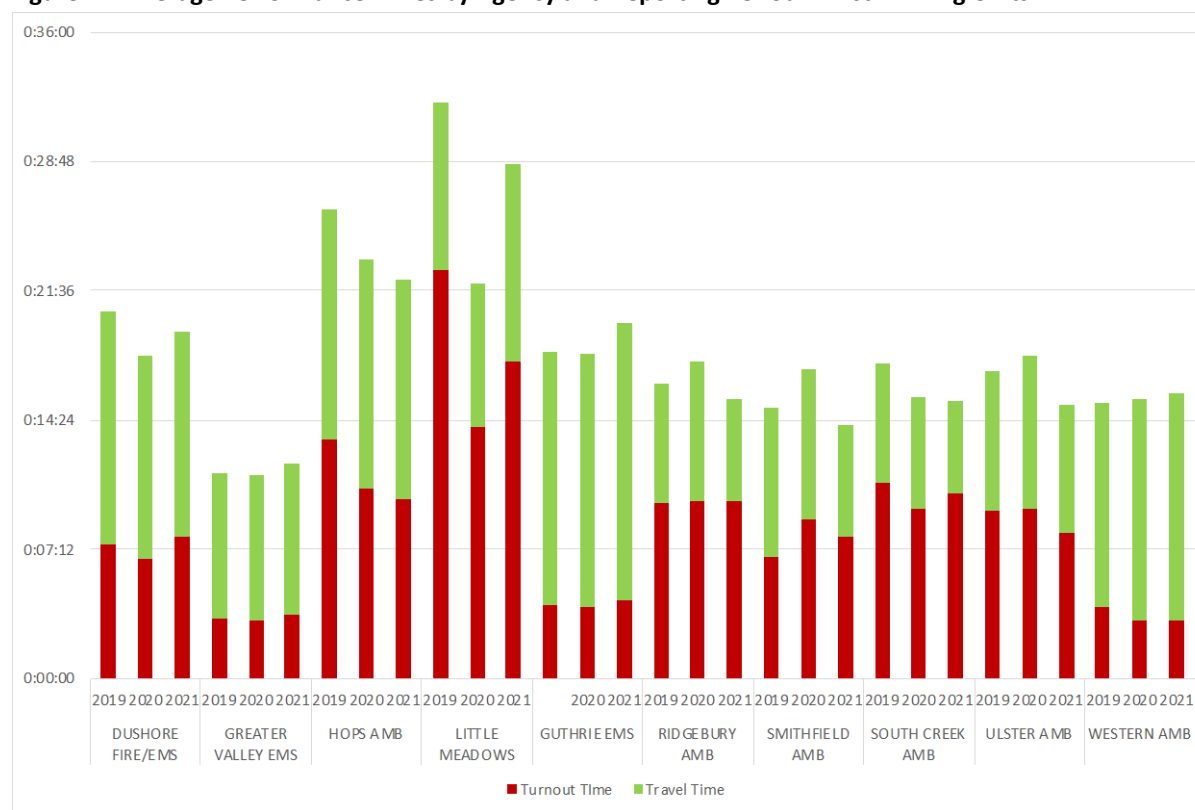
Rural	1st Unit	2nd Unit	Effective Response Force
<b>Benchmark</b>	10 minutes	14 minutes	14 minutes
<b>Baseline</b>	13 minutes	18:12 minutes	18:12 minutes

**Wilderness** – any rural area not readily accessible by public or private maintained road. Due to the large disparity between communities that protect wilderness areas, recommended travel times are not provided for this level of service.

Reviewing both the commensurate risk mapping and the CFAI standards allowed *FITCH* to determine that Bradford County is classified in the Rural and Wilderness zones/areas. This is based on Bradford County having 1151 miles<sup>2</sup> and a population of 59,892 which equates to 52 people per mile<sup>2</sup>. This is helpful in determining appropriate response time expectations for each area of the County.

Figure 11 below indicates the current response times for each EMS agency that provides primary response in Bradford County. The chart shows both red and green bars, red represents “turnout time” and the green represents “travel time.” Adding both the turnout time and the travel time equate to the total response time for an EMS agency. None of the EMS agencies in Bradford County are currently meeting the CFAI standards for turnout time. *FITCH* recommends that all EMS agencies evaluate their turnout time and determine methods to improve on these times. Turnout times can be longer of the policy of allowing two alerts, each with a four-minute wait time for an agency to confirm or not that a staffed ambulance is available.

**Figure 11. Average Performance Times by Agency and Reporting Period – First Arriving Units**



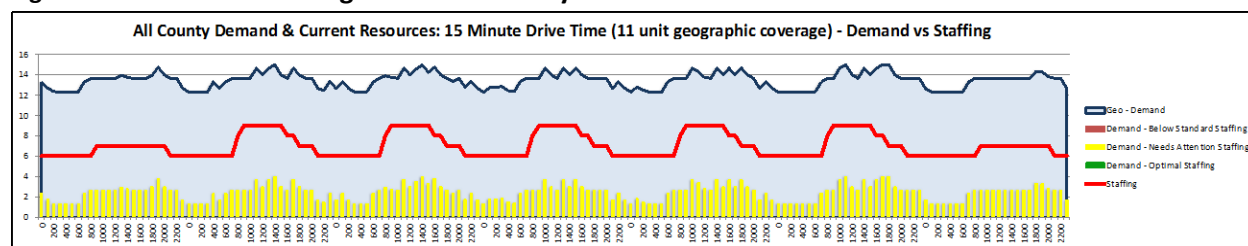
To service 911 emergency volume, geographic coverage plus normalized hourly demand provides the total number of staffed ambulances required per hour. The figures that follow indicate staffing to demand for all EMS units in Bradford County. The figures read left to right, Sunday to Saturday, reviewing each hour’s average demand and then normalized for the estimated time on task for the County.

Volume was determined using the most recent 52 weeks. The light blue area indicates how many units are required, per the marginal resources required to capture the prescribed geographic response time. The bar lines indicate the average hourly demand and change colors depending on whether the current staffing line (red line) is above or below the dark blue geographic plus the average demand line. If the staffing line is above the dark blue line and there is “space” between the lines that indicates there is capacity within the system. If the staffing line falls below the geographic plus demand line (dark blue), this indicates that there are either not enough resources during that hour and the bar lines will change colors.

The figures below reflect coverage for the entire county, including out of county EMS units that provide primary coverage in Bradford County. *FITCH* provided three response time models that Bradford County, the local municipalities, and the EMS Association can evaluate for use. These include:

- 15-minute drive time with 11 geographic units
- 20-minute drive time with 6 geographic units
- 30-minute drive time with 3 geographic units

**Figure 12. 15-minute Staffing to Demand Analysis**

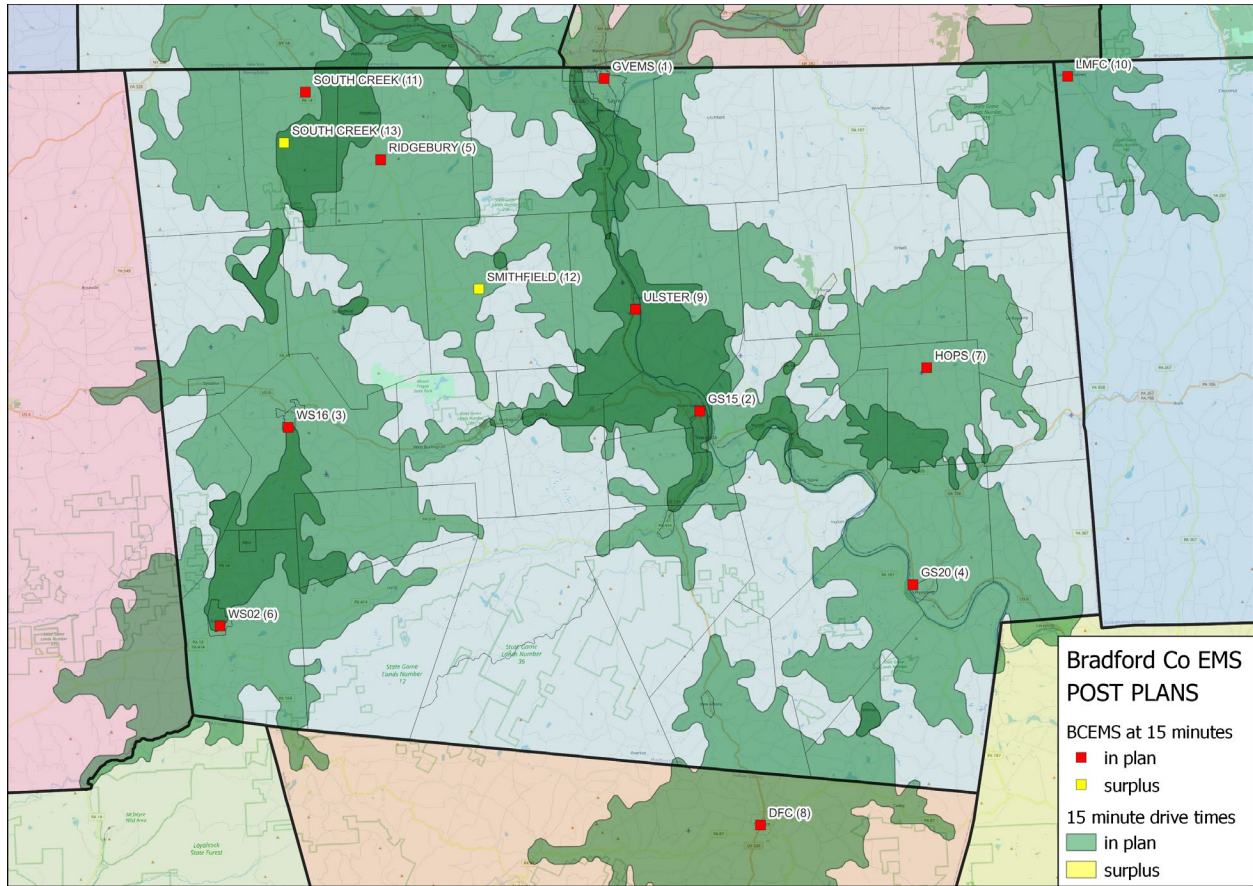


The 15-minute drive time model would require 11 geographic units, which would require 58,799 annual unit hours to cover the geographic demand. This model indicates that to have a transporting EMS unit on location at an emergency incident within 15 minutes, there would need to be 11 ambulances fully staffed and ready to respond. These 11 units would be able to capture 90% of the historical 911 volume in the system within Bradford County. The map in Figure 13 below reflects 15-minute drive times from each of the stations in red, the stations highlighted in yellow are surplus or not needed in the 15-minute drive analysis. This analysis requires 11 ambulances to provide coverage to the areas shaded in green. The areas that are not green would not receive an ambulance within 15 minutes due to geography. The goal of the geographic unit placement is to capture 90% of the historical call volume with the least number of units. As the number of units increases, the amount of total capture of calls decreases, which is clearly depicted in the units ranked in the 10<sup>th</sup> and 11<sup>th</sup> spot.

In Figure 12, *FITCH* noted that the current staffing (red line) is well below the geographic line (dark blue line), which indicates it would take significant investment by the County to bolster staffing to meet this level of performance.



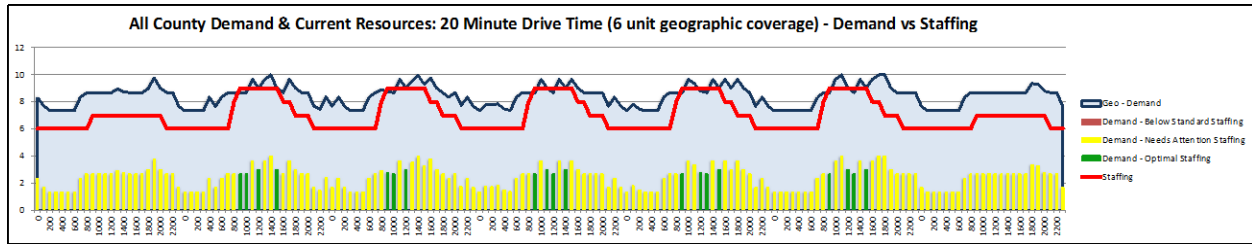
**Figure 13. 15-Minute Drive Time Map**



Rank	Post Number	Drive Time	Latitude	Longitude	Class	Post Capture	Total Capture	Percent Capture
1	GVEMS	15	41.992937	-76.523747	U	13376	13376	36.16%
2	GS15	15	41.783621	-76.447458	U	7182	20558	55.58%
3	WS16	15	41.776808	-76.792471	U	5232	25790	69.72%
4	GS20	15	41.672652	-76.271413	U	2286	28076	75.90%
5	RIDGEBURY	15	41.94385	-76.712418	U	1306	29382	79.43%
6	WS02	15	41.65267	-76.851321	U	1294	30676	82.93%
7	HOPS	15	41.8085	-76.25676	U	826	31502	85.16%
8	DFC	15	41.523586	-76.402022	U	786	32288	87.29%
9	ULSTER	15	41.848045	-76.500252	U	480	32768	88.59%
10	LMFC	15	41.989461	-76.134008	U	297	33065	89.39%
11	SOUTH CREEK	15	41.986773	-76.774999	U	292	33357	90.18%



**Figure 14. 20-minute Drive Time**

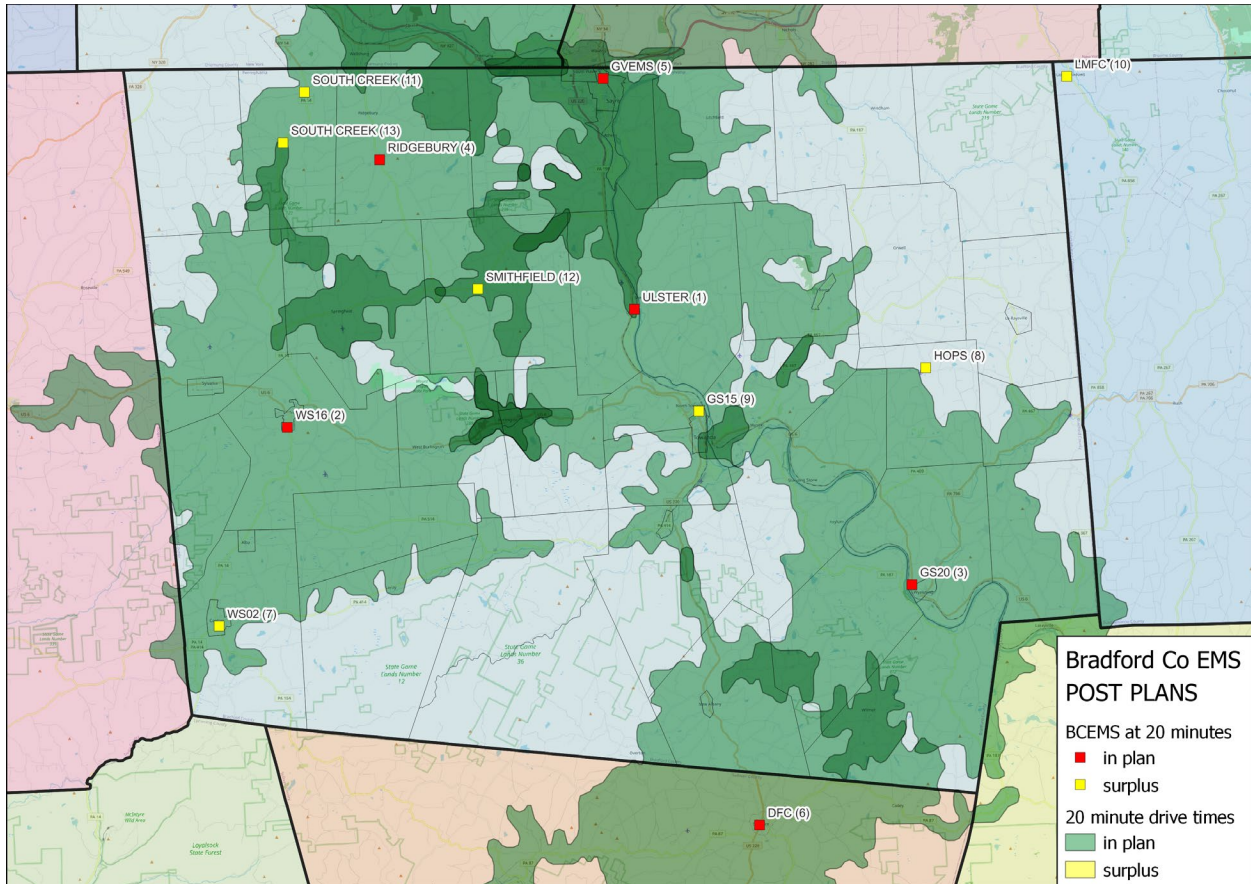


The 20-minute drive time model would require six geographic units, which would require 36,959 annual unit hours to cover the geographic demand. This model indicates that to have a transporting EMS unit on location at an emergency incident within 20 minutes there would need to be six ambulances fully staffed and ready to respond. These six units would be able to capture 90% of the historical 911 volume in the system within Bradford County. The map in Figure 15 below reflects 20-minute drive times from each of the stations in red, the stations highlighted in yellow are surplus or not needed in the 20-minute drive analysis.

This analysis requires six ambulances to provide coverage to the areas shaded in green. The areas that are not green would not receive an ambulance within 20 minutes due to geography. The goal of the geographic unit placement is to capture 90% of the historical call volume with the least number of units. As the number of units increases the amount of total capture of calls decreases. This model provides a significant increase in geographic coverage area for the entire County and even extends to areas outside of the County.

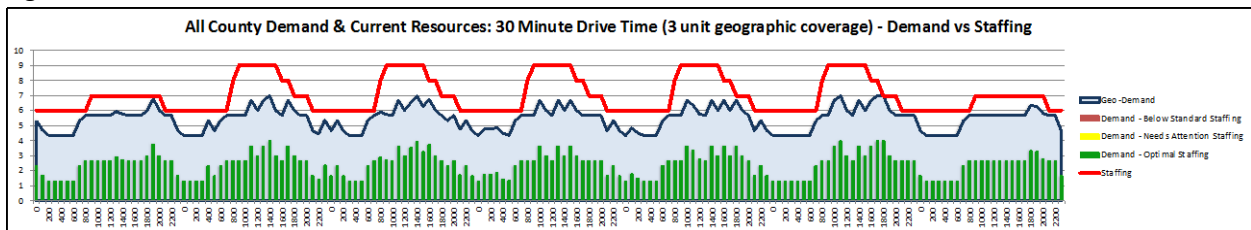
In Figure 14, *FITCH* noted that the current staffing (red line) more closely aligns with the geographic line (dark blue line), which indicates it would take some investment by the County to better align system performance with CFAI standards.

Figure 15. 20-Minute Drive Time Map



Rank	Post Number	Drive Time	Latitude	Longitude	Class	Post Capture	Total Capture	Percent Capture
1	ULSTER	20	41.848045	-76.500252	U	21437	21437	57.95%
2	WS16	20	41.776808	-76.792471	U	5365	26802	72.46%
3	GS20	20	41.672652	-76.271413	U	3572	30374	82.11%
4	RIDGEBURY	20	41.94385	-76.712418	U	1573	31947	86.37%
5	GVEMS	20	41.992937	-76.523747	U	887	32834	88.76%
6	DFC	20	41.523586	-76.402022	U	868	33702	91.11%

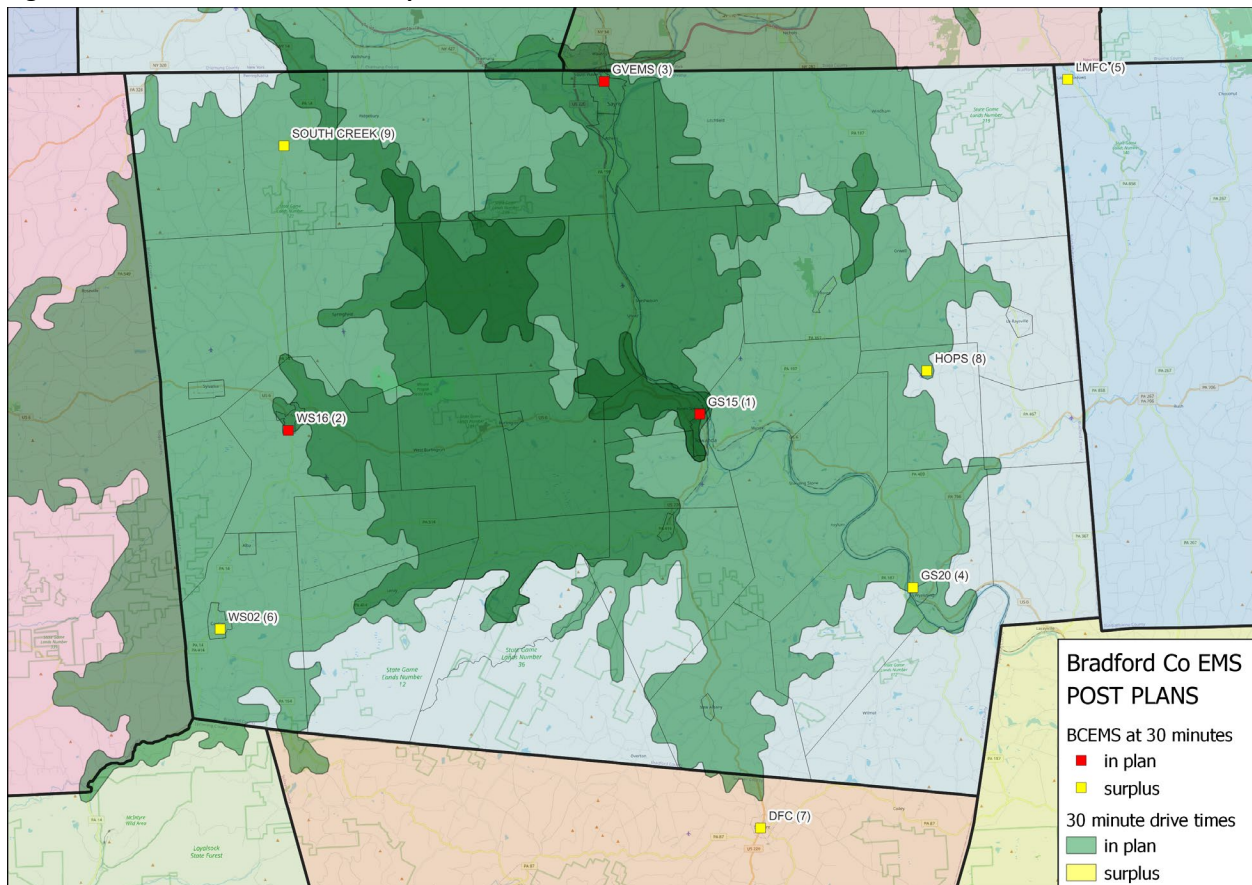
Figure 16. 30-minute Drive Time



The 30-minute drive time model would require three geographic units, which would require 23,855 annual unit hours to cover the geographic demand. This model indicates that to have a transporting EMS unit on location at an emergency incident within 30 minutes, there would need to be 3 ambulances fully staffed and ready to respond. These three units would be able to capture 90% of the historical 911 volume in the system within Bradford County as well provide a significant amount of geographic coverage to the majority of Bradford County and counties in New York and Tioga County, Pennsylvania to the west.

In Figure 16, *FITCH* noted that the current staffing (red line) is greater than the geographic line (dark blue line), which closely aligns with the current system performance as noted in the data report.

**Figure 17. 30-Minute Drive Time Map**



Rank	Post Number	Drive Time	Latitude	Longitude	Class	Post Capture	Total Capture	Percent Capture
1	GS15	30	41.783621	-76.447458	U	28161	28161	76.13%
2	WS16	30	41.776808	-76.792471	U	4776	32937	89.04%
3	GVEMS	30	41.992937	-76.523747	U	1958	34895	94.34%

Ultimately, the County and the local municipalities will need to determine how much they can afford in order to provide an equitable response and baseline level of service. Beyond the current funding and staffing challenges is that of achieving a uniform level of service across the county for all persons who live, work or visit Bradford County.

## **SYSTEM FINANCES**

### **Revenue Collections**

Revenue performance analysis and predictions were based on several of the current EMS agencies' financials as provided. The predictive information is an estimation based on a 12-month annualization of the data. The data analysis and revenue estimates are based on the following: current EMS agencies' services mix, average mileage, payor mix calculated from both the Activity Summary and CAD data, published Medicare and Medicaid Fee Schedule rates for the service area, and payor performance surmised from information that was provided. *FITCH* evaluated the current EMS agencies' revenue per transport based on their actual performance and used their revenue per transport to estimate future income.

### **Transport Volume & Percentage**

To determine the future income for either of the 15, 20 and 30 minute-drive time models presented, *FITCH* reviewed the total responses for the entire County including and excluding non-emergency interfacility transports. We evaluated one year of volume for the entire County. The CAD data provided to *FITCH* did not show the responses that had a corresponding transport. *FITCH* reviewed the data and utilized data that was provided by the busiest EMS agency and where there was an 87% transport rate for that agency. *FITCH* utilized this transport rate to calculate additional assumptions for estimated revenue. Figure 18 below indicates the actual calls and estimated transports for four of the EMS agencies.

**Figure 18. Estimated Transports vs. Actual Calls**

Agency	Actual Calls	Estimated Transports
Greater Valley	4,610	4,024
Guthrie	2,478	2,163
Western	1,692	1,477
All Others	625	546
Total	9,405	8,209

For each of the agencies above and overall, 87.3% of calls resulted in a transport.

### Payor & Service Mix and Trends

Payor mix and service mix are important elements in the evaluation of future opportunities, as well as challenges. *FITCH* was unable to validate this data in its entirety since not all the EMS entities provided financial information.

Based on the information that *FITCH* did receive, we evaluated the aggregated information from the other agencies and applied it to the entire County. Both payor mix and service mix were then evaluated in two categories, with and without inter-facility (non-emergency transports). In Figure 19 below, the service level mix is depicted both with and without interfacility transports. This provides a clear understanding of what level of service is provided and ultimately provides a guide for financial modeling for the estimated total revenue that is available within the system.

**Figure 19. Service Level Mix (With and Without Interfacility Transports)**

Service Level Mix	911 Calls with IFT	Volume	911 calls without IFT	Volume
ALSE	56.0%	4597	62.0%	4632
ALSNE	4.5%	369	0.0%	0
ALS2	1.0%	82	0.0%	0
BLSE	34.0%	2791	38.0%	2838
BLSNE	4.0%	328	0.0%	0
SCT	0.5%	41	0.0%	0
Wheelchair	0.0%	0	0.0%	0
ALSER ASSESSMENT	0.0%		0.0%	
ALSE TOTAL	56.0%	4597	62.0%	4632
Non-Transport w/o treatment	0%	0	0%	0

Non-Transport w/ treatment	0%	0	0%	0
<b>Total</b>	<b>100.00%</b>	8208	<b>100.00%</b>	7470

In Figure 20 below, the breakdown of payor mix is reflected as a percentage of the total call volume and the types of insurance coverage the patient did or did not have. When evaluating the system for financial modeling it is important to be aware of the payor level mix as this will directly impact revenues.

**Figure 20. Payor Level Mix**

Payor Mix	Percentage
Medicare	37.0%
Medicare HMO	20.0%
Medicaid	9.0%
Medicaid HMO	9.0%
Commercial	11.0%
Facility Contract	7.0%
Private Pay	7.0%

The data indicates a relatively low rate of private pay patients.

### Estimated Revenue per Transport

In *FITCH's* review of the data provided it was determined that the current revenue per transport rate is \$427.92. *FITCH* then independently analyzed what the potential revenue per transport should be based *FITCH's* experience and estimated that \$446.02 per transport including Interfacility transports and \$451.51 per transport excluding interfacility transports. This allowed *FITCH* to estimate the total income that would be collected by all EMS agencies in the County.

### Financial Sustainability

To determine the system's sustainability, *FITCH* independently projected the County's potential cost per unit hour. In *FITCH's* experience, direct labor and 25% fringe benefit costs are around 50% of the total cost of direct material and overhead of an ambulance program. Due to the recent inflationary cost increases, *FITCH* estimated direct materials and overhead costs at a total of 75%.

Assumptions were used to create two different costs per unit hour. This allowed *FITCH* to show the impact of any system enhancements recommended such as using a 100% ALS level response system or a 50% ALS and 50% BLS response system. This would allow for the right resource to be used at the right time, while being cognizant of cost. The County made significant investment in the 911 Communications Center allowing for this call triaging and ensuring the right resource could be deployed at the right time.



The salary rates for personnel adjusted higher than the current rates to ensure they County is understands cost for competitive wages.

*FITCH* then evaluated the total number of unit hours needed to deploy to cover the entire County based off the four models discussed. For evaluation purposes, *FITCH* used the last 365-day CAD data to determine the total number of transports for 911 calls and non-emergency transports within the County. *FITCH* then utilized the average revenue against the total number of transports, to determine the total NET Revenue.

*FITCH* created three different response models with the total number of unit hours needed to cover described areas. Below outlines each model, required number of unit hours and resource type/s.

To understand the costing for these models, *FITCH* obtained data, through our information data request, to determine the overall value of the EMS system. *FITCH* was not able to obtain information from all of the EMS agencies in the County. There was one in-county EMS agency that did not provide financial information for analysis or review. Due to the absence of an entire set of financials, *FITCH* utilized the financial information provided and then created an assumption based off the financial information received from the EMS agencies that participated. This resulted in an estimated average revenue per transport to be \$446.02 with interfacility non-emergency transports and \$451.51 without the inclusion of non-emergency transports.

*FITCH* then estimated, using a range of values for the cost to provide EMS service, by vehicle type, per hour. For an ALS unit, *FITCH* estimated a range of \$90 to \$100 and for a BLS Unit \$80 to \$90 dollars per hour. These ranges consider the current market pressures and increased Consumer Price Index increases. Of note, the per unit cost is relatively low as a number of volunteer EMS agencies provide BLS service in the County.

In review of the provided financial data, if the EMS agencies were not receiving donations from the community or grants, none of the agencies would make a profit. Agencies are working to find creative ways to sustain the bottom line such as renting space. *FITCH* removed all grants as donations as this source of funding is not sustainable for the survivability of EMS in the County.

In *FITCH's* independent financial analysis and modeling there are several options that Bradford County can select. A tiered EMS response system allows for the most appropriate EMS resource to be dispatched to and sent to the correct patient. In a tiered EMS response system, a Basic Life Support (BLS) ambulance with at least one Emergency Medical Technician (EMT) and currently a non-certified driver can be dispatched instead of always dispatching an ALS unit on every call. Should the patient require a higher level of care, a paramedic intercept vehicle staffed with one paramedic can be dispatched. This method preserves scarce paramedic resources for patients that require more acute level care.

In Figure 21, *FITCH* estimates the cost to the County for each model. *FITCH* utilized the annual unit hours against the cost per unit hour, to determine the total operating expense. For each model in Figure 21, *FITCH* estimated the annual operating cost. The model designs include a mixed 50% ALS and 50% BLS units both with and without interfacility transports and a 100% ALS system with and without interfacility transports. As is depicted in the figures below the blended system presents the best options for deployment within Bradford County.

**Figure 21. *FITCH* Estimated Operating Expenses: 50/50 ALS/BLS With Interfacility Transports**

50% ALS / 50% BLS Units							
Models with Interfacility Transports Continued							
		15 Min Response		20 Min Response		30 Min Response	
		Current Providers	FITCH Estimates	Current Providers	FITCH Estimates	Current Providers	FITCH Estimates
Transport Income							
	Volume	8209	8209	8209	8209	8209	8209
	Revenue/Transport	\$ 427.92	\$ 446.02	\$ 427.92	\$ 446.02	\$ 427.92	\$ 446.02
	Total System Transport Revenue	\$ 3,513,027	\$ 3,661,613	\$ 3,513,027	\$ 3,661,613	\$ 3,513,027	\$ 3,661,613
Expenses							
	Direct Labor	\$ 2,933,573	\$ 2,933,573	\$ 1,843,949	\$ 1,843,949	\$ 1,190,174	\$ 1,190,174
	Direct Materials/Overhead/Depreciation	\$ 4,646,589	\$ 4,646,589	\$ 2,920,669	\$ 2,920,669	\$ 1,885,117	\$ 1,885,117
	Total Transport Expenses	\$ 7,580,162	\$ 7,580,162	\$ 4,764,618	\$ 4,764,618	\$ 3,075,291	\$ 3,075,291
<b>Total System Transport Income (Loss)</b>		<b>(\$4,067,136)</b>	<b>(\$3,918,549)</b>	<b>(\$1,251,591)</b>	<b>(\$1,103,005)</b>	<b>\$437,735</b>	<b>\$586,322</b>

This model is only financially sustainable when a 30-minute drive time response is implemented. The more acceptable 20-minute drive time response would require a subsidy of approximately \$1.1 million system-wide. It should be noted that a 20-minute drive time does not include the time to dispatch the call and turnout time so that 20 minutes is understated from the patient's viewpoint.

**Figure 22. *FITCH* Estimated Operating Expenses: 50/50 ALS/BLS Without Interfacility Transports**

50% ALS / 50% BLS Units							
Models without Interfacility Transports Continued							
		15 Min Response		20 Min Response		30 Min Response	
		Current Providers	FITCH Estimates	Current Providers	FITCH Estimates	Current Providers	FITCH Estimates
Transport Income							
	Volume	7471	7471	7471	7471	7471	7471
	Revenue/Transport	\$ 451.51	\$ 451.51	\$ 451.51	\$ 451.51	\$ 451.51	\$ 451.51
	Total System Transport Revenue	\$ 3,373,255	\$ 3,373,255	\$ 3,373,255	\$ 3,373,255	\$ 3,373,255	\$ 3,373,255
Expenses							
	Direct Labor	\$ 2,933,573	\$ 2,933,573	\$ 1,843,949	\$ 1,843,949	\$ 1,190,174	\$ 1,190,174
	Direct Materials/Overhead/Depreciation	\$ 4,646,589	\$ 4,646,589	\$ 2,920,669	\$ 2,920,669	\$ 1,885,117	\$ 1,885,117
	Total Transport Expenses	\$ 7,580,162	\$ 7,580,162	\$ 4,764,618	\$ 4,764,618	\$ 3,075,291	\$ 3,075,291
<b>Total System Transport Income (Loss)</b>		<b>(\$4,206,907)</b>	<b>(\$4,206,907)</b>	<b>(\$1,391,363)</b>	<b>(\$1,391,363)</b>	<b>\$297,964</b>	<b>\$297,964</b>



**Figure 23. FITCH Estimated Operating Expenses: 100% ALS/BLS With Interfacility Transports**

100% ALS / 0% BLS Units							
Models with Interfacility Transports Continued							
		15 Min Response		20 Min Response		30 Min Response	
		Current Providers	FITCH Estimates	Current Providers	FITCH Estimates	Current Providers	FITCH Estimates
Transport Income							
	Volume	8209	8209	8209	8209	8209	8209
	Revenue/Transport	\$ 427.92	\$ 446.02	\$ 427.92	\$ 446.02	\$ 427.92	\$ 446.02
	Total System Transport Revenue	\$ 3,513,027	\$ 3,661,613	\$ 3,513,027	\$ 3,661,613	\$ 3,513,027	\$ 3,661,613
Expenses							
	Direct Labor	\$ 5,749,506	\$ 5,749,506	\$ 3,613,937	\$ 3,613,937	\$ 2,332,596	\$ 2,332,596
	Direct Materials/Overhead/Depreciation	\$ 4,887,042	\$ 4,887,042	\$ 3,071,809	\$ 3,071,809	\$ 1,982,669	\$ 1,982,669
	Total Transport Expenses	\$ 10,636,548	\$ 10,636,548	\$ 6,685,746	\$ 6,685,746	\$ 4,315,264	\$ 4,315,264
	<b>Total System Transport Income (Loss)</b>	<b>(\$7,123,521)</b>	<b>(\$6,974,935)</b>	<b>(\$3,172,719)</b>	<b>(\$3,024,133)</b>	<b>(\$802,238)</b>	<b>(\$653,651)</b>

**Figure 24. FITCH Estimated Operating Expenses: 100% ALS/BLS Without Interfacility Transport**

100% ALS / 0% BLS Units							
Models without Interfacility Transports Continued							
		15 Min Response		20 Min Response		30 Min Response	
		Current Providers	FITCH Estimates	Current Providers	FITCH Estimates	Current Providers	FITCH Estimates
Transport Income							
	Volume	7471	7471	7471	7471	7471	7471
	Revenue/Transport	\$ 451.51	\$ 451.51	\$ 451.51	\$ 451.51	\$ 451.51	\$ 451.51
	Total System Transport Revenue	\$ 3,373,255	\$ 3,373,255	\$ 3,373,255	\$ 3,373,255	\$ 3,373,255	\$ 3,373,255
Expenses							
	Direct Labor	\$ 5,749,506	\$ 5,749,506	\$ 3,613,937	\$ 3,613,937	\$ 2,332,596	\$ 2,332,596
	Direct Materials/Overhead/Depreciation	\$ 4,887,042	\$ 4,887,042	\$ 3,071,809	\$ 3,071,809	\$ 1,982,669	\$ 1,982,669
	Total Transport Expenses	\$ 10,636,548	\$ 10,636,548	\$ 6,685,746	\$ 6,685,746	\$ 4,315,264	\$ 4,315,264
	<b>Total System Transport Income (Loss)</b>	<b>(\$7,263,293)</b>	<b>(\$7,263,293)</b>	<b>(\$3,312,490)</b>	<b>(\$3,312,490)</b>	<b>(\$942,009)</b>	<b>(\$942,009)</b>

The financial models underscore that Interfacility transports contribute significantly (an estimated \$330, *The local healthcare system manages most non-emergency transport. Utilization of other services occurs from time to time. Recommend the local healthcare system establish contracts and payor-of-last-resort contracts for all local EMS agencies interested in participating in transports.*000 annually) to the overall financial sustainability of the system and that an all-ALS system is likely beyond the funding capability of this system.

## **PATHWAY FORWARD**

*FITCH's* goal is to present Bradford County and the EMS organizations within it, options for sustainability and longevity. *FITCH* has developed four options that can be selected singularly or in total to provide a pathway for the future for EMS in Bradford County. It should be noted that at no time is *FITCH* recommending the disbanding or dissolving of any of the volunteer emergency service agencies within or that support Bradford County.

### **OPTION ZERO – SUPPORT STATUS QUO**

In this Option, EMS agencies would continue to operate as they do currently. Response efforts will remain uncoordinated and non-uniform across the County. At any given time, sick or injured persons may not receive the needed or deserved emergency medical care in a clinically timely manner. There are concerns that volunteer organizations may falter as the trend of declining responder hours continues.

Actions that the County can take to further support the status quo are outlined below.

- Change dispatch policy to dispatch a staffed ambulance upon immediate request for service, thereby eliminating delays while waiting for agencies to gather personnel to staff the ambulance. Dispatch services should simultaneously dispatch the primary agency and a staffed ambulance.
- Establish dispatch agreements between each agency and County 911 that the agencies will provide mutual aid of the next closest unit.
- Require that staffed EMS unit's mark-up or communicate their status with the Bradford County 911 Center at the beginning and end of each shift.
- Implement Automatic Vehicle Locaters (AVL) for all EMS resources so units can be tracked and deployed based on the closest EMS unit available. Agreement and cooperation of all transporting EMS agencies would need to be achieved.
- Develop group purchase contracts available to all agencies for items such as fuel, medical supplies/equipment, medical and dental insurance, fleet purchases, and maintenance, etc.
- Develop a dedicated EMS revenue stream that provides support to agencies for large purchases and other system wide improvements. The County and the EMS Association could manage the funds and seek recommendations through the EMS Association for necessary purchases and group benefits.

The estimated cost for Option Zero is the cost of providing AVL for all resources. The cost estimate is approximately \$45 per month/per unit and would require installation of software in the County 911 Center. Some AVL vendors may require an initial installation and setup fee which is not included in the estimate above.

It is understood that some of Bradford’s EMS agencies are better positioned to provide stable, dedicated emergency medical responses. Other agencies will continue to struggle. It is also expected that some EMS agencies may fail to secure consistent staffing and funding. The County can expect that some agencies may cease operations thereby leaving territory without dedicated EMS coverage.

## **OPTION ONE —IMPLEMENT COUNTYWIDE EMS OVERSIGHT AND DEVELOP COUNTYWIDE FUNDING PLAN**

This option should include all the options and recommendations from the Status Quo Option. In this option, the Bradford County system would benefit by establishing a designated entity and/or individual, initially charged with managing the coordination of ambulance response throughout the County. This entity would work with existing providers to establish performance metrics, formalize response time metrics, deployment considerations, EMS education, and system-wide collaboration.

Bradford County Commissioners, other local elected officials and the EMS Association should decide on how to best determine a single coordinating entity. Currently, there is legislation in Pennsylvania to allow for the formation of EMS Authority. The EMS Authority allows for multiple municipalities to collectively come together to provide for EMS throughout a jurisdictional area. This is an area for further consideration.

To facilitate the above actions, the County should establish an EMS Coordinator whose mission is to achieve the following objectives:

- Work with existing public safety entities to develop specific recommendations for governance, funding, oversight, and EMS with the objective of enhancing coordination and cooperation between these service providers.
- Publish monthly response time statistics by agency.
- Enhance EMS service delivery by working with existing providers.
- Be involved in direct service delivery only to the extent necessary, as determined by the EMS Association and/or the Bradford County Commissioners.
- Manage all County initiated funding; if an agency receives county funding, they will sign an operating agreement to operate in a manner that the County expects and provide monthly financial reports.
- Ensure all EMS agencies are operating as per their license to include staffing and response guidelines set forth by the Pennsylvania Department of Health, Bureau of EMS.

## **OPTION TWO — ESTABLISH AN EMS AUTHORITY**

In this Option, the County would work collaboratively to establish an EMS Authority or similar entity. The EMS Authority would be designed and implemented to include any number of municipalities within the County agreeing to formalize an effort for the provision of EMS.

This Option offers a solid opportunity for improvements with a minimal amount of disruption. EMS agencies with substantial local support can thrive while all agencies can seek savings through group purchasing contracts and other efficiencies. The Option also allows a *systems* approach to evolve with higher levels of coordination. At some point, agencies may understand that they are more likely to survive by working together to provide coordinated emergency services in support of community well-being.

Currently, there are several established and functional EMS Authorities in Pennsylvania. The creation of an EMS Authority will address the challenges that jeopardize emergency services in Bradford County and will aid in fulfilling the statutory requirement for municipalities to provide EMS services with more fiscal stability. The bottom line — the new EMS authority would ensure that EMS services continue to be available in the community 24/7/365. As a collaboration among multiple municipalities, the EMS Authority will provide EMS and administrative support to member and contracted municipalities throughout its service area. Founding municipalities will each have representation on the EMS Authority's board.

EMS Authority should advertise and hold public hearings on proposed services and rates. The community will continue to have a voice in the EMS Authority, even after the Authority is formed. The EMS Authority will charge a reasonable and uniform annual fee to property owners or the municipality (depending on the municipality's arrangement with the authority). The fee would replace and municipal contributions that may have been occurring and membership subscription.

Under the current Municipal Authorities Act of 1945 there have been several municipal authorities providing EMS services in Pennsylvania:

- Valley Ambulance Authority
- Quaker Valley Ambulance Authority
- McCandless/Franklin Park Ambulance Authority
- Ross/ West View EMS Authority
- AMED Authority (Altoona)
- Medical Rescue Team South Authority
- McKeesport Ambulance Authority
- Huntington Ambulance Authority

The Pennsylvania Municipal Authorities Association has resources available to aid areas investigating the formation of an EMS Authority.<sup>13</sup> Currently, Pennsylvania House Bill 2537 and Senate Bill 698<sup>14</sup> remain in Veterans Affairs Committee awaiting passage to ensure additional measures for the creation of EMS and Fire Authorities.

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<sup>13</sup> <https://www.municipalauthorities.org/>

<sup>14</sup> <https://www.legis.state.pa.us/CFDOCS/Legis/PN/Public/btCheck.cfm?txtType=PDF&sessYr=2021&sessInd=0&billBody=S&billType=B&billNbr=0698&pn=0782>

## **OPTION THREE — A SINGLE PROVIDER SYSTEM**

Over time, a single provider system may evolve out of necessity. Without substantial financial support and ongoing staffing challenges, EMS agencies may cease or further curtail operations. Continuing changes in insurance and Medicare/Medicaid transport reimbursements *and* operational policies may well force market changes and the demise of local EMS agencies. Any economic downturn could change the ability of communities within the County to support EMS.

A single provider system provides the opportunity for efficiencies on multiple levels. Staffing to demand in a larger system can provide more efficient geographic, as well as temporal coverage. Services can be contracted to not-for-profit entity (whether independent or healthcare system based) or provided by the County. As is evident, there is concern for the future of Bradford County's EMS system. It is likely that a natural progression will occur whereby either one or more of the agencies are not able to meet the demand for service. There is need to continually evaluate and monitor the financial and operational health of each EMS agency. The collapse of just one EMS unit can dramatically change the already strained EMS system and negatively alter coverage. The loss of volunteer entities is a natural progression occurring around the US and a single provider system will become the likely option for implementation.

The single provider option provides economies of scale and eliminates redundant expenditures. This option provides opportunities to create a system that can fund solutions to many of the problems that plague the current system.

## CONCLUSION

Bradford County officials recognize that establishing reliable emergency medical service across the County is important for both the public safety and welfare of the public and to support future economic development. A new system design should focus on:

- Achieving consensus among provider partners regarding service levels,
- Establishing system clinical and operational oversight,
- Developing financial transparency and providing adequate support,
- Working together to solve education, staffing and other issues.
- Establishment of an EMS Authority and implementation of a County EMS Coordinator to aid in facilitation of EMS throughout the County

Options for the future provide the County with the strategic ability to decide the level of commitment needed from the County, local officials and the current EMS agencies. Ultimately, the County and the local municipalities must determine what they can afford to ensure an equitable response and baseline level of service.

# ATTACHMENT A

**50 BENCHMARKS**

# System Component Benchmarks Overview

EMS managers often ask: “How do I measure up? “or “Are we a quality operation?”. This can be a difficult question to objectively answer. No industry standards are universal, existing system and clinical research does not provide conclusive guidance, and each system’s local factors influence its individual design and operations. What does exist in the literature and what can be drawn from decades of system review and design consulting experience is a host of general benchmarks. These fifty (50) benchmarks offer a window into assessing your system.

Upon review of your EMS system, *FITCH* evaluated each of the 50 benchmarks and rated them to determine if a benchmark was Documented and satisfactory, Partially Documented and had specific areas of needed improvement, Not Documented and was an area that is not fully operational or even in operation, and Not Applicable, which would not apply to your EMS system. Agencies can use these benchmarks to continuously reevaluate their system.

The below table summarizes *FITCH*’s findings.

<b>Summary —</b>
<i>Documented - 11</i>
<i>Partially Documented - 17</i>
<i>Not Documented- 18</i>
<i>N/A- Not Applicable - 4</i>

*KEY: D=Documented, ND=Not Documented, PD= Partially Documented, N/A Not Applicable*

## COMMUNICATIONS BENCHMARKS —

<b>Benchmarks</b>	<b>Current Bradford County EMS</b>	<b>System Improvements Per Recommendations</b>
Public access through a single number, preferably enhanced 911.	<i>D</i>	<i>County 911 receives all emergency calls. There is known limited cell phone coverage in the area due to geographic diversity</i>
Coordinated PSAPs exist for the system.	<i>D</i>	<i>There is a singular PSAP for Bradford County</i>
Certified personnel provide pre-arrival instructions and priority dispatching (EMD) and this function is fully medically supervised.	<i>D</i>	<i>Bradford County 911 has EMD certified personnel both answering and dispatching 911 calls</i>
Data collection which allows for key service elements to be analyzed.	<i>D</i>	<i>Data capture should be monitored continually for system improvements. Need to improve data collection to determine type of call such as 911 verse</i>



<b>Benchmarks</b>	<b>Current Bradford County EMS</b>	<b>System Improvements Per Recommendations</b>
		<i>hospital transfer.</i>
Technology supports interface between 911, dispatching & administrative processes.	<i>D</i>	<i>Currently utilizing appropriate technology. Should add AVL in each vehicle and dispatch in the communications center. Policies should be established to dispatch a staffed unit immediately upon request.</i>
Radio linkages between dispatch, field units and medical facilities provide adequate coverage and facilitate communications.	<i>D</i>	<i>Communications between field units, 911 center, and medical facilities is intact and functions as expected for geographic diversity</i>

**MEDICAL FIRST RESPONSE BENCHMARKS —**

<b>Benchmarks</b>	<b>Current Bradford County EMS</b>	<b>System Improvements Per Recommendations</b>
First responders are part of a coordinated response system and medically supervised by single system medical director.	<i>ND – There is no single medical director for the county EMS agencies</i>	<i>Recommend seeking a county-wide medical director to oversee all EMS agencies and 911 center.</i>
Defined response time standards exist for first responders.	<i>ND - No evidence of response time standards across the County were found.</i>	<i>There is no provision to coordinate response times across 1<sup>st</sup> response agencies; however, this report will make recommendations for EMS agencies to define response time requirements for ambulance response coordinated through County 911</i>
First response agencies report/meet fractile response times.	<i>ND</i>	<i>There is no provision to coordinate response times across 1<sup>st</sup> response agencies.</i>
AED capabilities on all first line apparatus.	<i>D</i>	<i>ARPA funding can be used to buy additional AED's for police, fire, and EMS units</i>
Smooth transition of care is achieved.	<i>D</i>	<i>Fire and EMS agencies work well and collaboratively to ensure patient care is provided and a transition of care is ensured.</i>

**MEDICAL TRANSPORTATION BENCHMARKS—**

<b>Benchmarks</b>	<b>Current Bradford County EMS</b>	<b>System Improvements Per Recommendations</b>
Defined response time standards exist.	<i>PD - Do not exist countywide; may be at various agencies, but not coordinated or reported.</i>	<i>Bradford County should define response times and reporting; data will reside with County 911 and would be reported as needed.</i>
Agency reports/meets fractile response times.	<i>ND</i>	<i>Bradford County establish agency response times and reporting; data will reside with County 911 and would be reported as needed.</i>
Units meet staffing and equipment requirements.	<i>PD</i>	<i>Staffing and equipment requirements are specified as part of the regulations set forth by PA DOH BEMS.</i>
Resources are efficiently and effectively deployed.	<i>ND - The closest EMS units are not dispatched to or responding to emergency 911 calls</i>	<i>Recommend the installation and utilization of Automatic Vehicle Locater (AVL) to identify closest and available EMS units.</i>
There is a smooth integration of first response, air, ground, and hospital services.	<i>D</i>	<i>Although there are not reported issues or concerns, recommend that both the local hospital(s) and EMS agencies create a more open environment for an improved collaborative approach to patient care</i>
Develop/maintain coordinated disaster plans.	<i>N/A</i>	<i>Collaboration between the County and EMS agencies can lead to higher level disaster planning across the entire county area.</i>

**MEDICAL ACCOUNTABILITY BENCHMARKS —**

<b>Benchmarks</b>	<b>Current Bradford County EMS</b>	<b>System Improvements Per Recommendations</b>
Single point of physician medical direction for entire system.	<i>ND</i>	<i>A single County Medical Director or a coordinated committee of Medical Directors should be established.</i>
Written agreement (job description) for medical direction exists.	<i>PD - May exist at individual provider agencies, but not coordinated across</i>	<i>Written agreements for Medical Direction to include certifications with minimums are set forth by the PA DOH BEMS, but it is recommended for</i>

<b>Benchmarks</b>	<b>Current Bradford County EMS</b>	<b>System Improvements Per Recommendations</b>
	<i>county.</i>	<i>commonality that medical directors mirror each other.</i>
Specialized medical director training/certification.	<i>PD - May exist at individual provider agencies, but not coordinated across county.</i>	<i>Written agreements for Medical Direction to include certifications with minimums are set forth by the PA DOH BEMS, but it is recommended for commonality that medical directors mirror each other.</i>
Physician is effective in establishing local care standards that reflect current national standards of practice.	<i>PD - May exist at individual provider agencies, but not coordinated across county.</i>	<i>Written agreements for Medical Direction to include certifications with minimums are set forth by the PA DOH BEMS, but it is recommended for commonality that medical directors mirror each other.</i>
Proactive, interactive, and retroactive medical direction is facilitated by the activities of the medical director.	<i>ND - Countywide coordination of medical direction does not exist.</i>	<i>A single County Medical Director or a coordinated committee of Medical Directors should be established.</i>
PCR/QI data transparency for MD review.	<i>PD- May exist at individual provider agencies, but not coordinated across county.</i>	<i>A single County Medical Director or a coordinated committee of Medical Directors should be established.</i>
Clinical Education/Development Effectiveness.	<i>PD - May exist at individual provider agencies, but not coordinated across county.</i>	<i>A single County Medical Director or a coordinated committee of Medical Directors should be established and incorporated with field providers and training officers to ensure effective education is developed.</i>
Clinical Education Efficiency.	<i>PD - May exist at individual provider agencies, but not coordinated across county.</i>	<i>A single County Medical Director or a coordinated committee of Medical Directors should be established incorporated with field providers and training officers to ensure effective education is developed.</i>

**CUSTOMER/COMMUNITY ACCOUNTABILITY BENCHMARKS —**

<b>Benchmarks</b>	<b>Current Bradford County EMS</b>	<b>System Improvements Per Recommendations</b>
Legislative authority to provide service and written service agreements are in place.	<i>ND - Currently do not exist in most areas within Bradford County.</i>	<i>The local municipalities in conjunction with the EMS Association the County should ensure alignment is obtained for the provision of equitable EMS across all boundaries</i>
Units and crews have a professional appearance.	N/A	<i>Professional appearance and responsibilities of work force will be part of the individual EMS agencies.</i>
Formal mechanisms exist to address patient and community concerns.	<i>PD - May exist at individual provider agencies, but not coordinated across county.</i>	<i>A universal approach to patient and community concerns allows for continuity among the EMS agencies.</i>
Independent measurement and reporting of system performance are utilized.	<i>PD - May exist at individual provider agencies, but not coordinated across county.</i>	<i>The EMS Association in collaboration with County can spell out the metrics for reporting response times, quality assurance and other performance metrics.</i>
Internal customer issues are routinely addressed.	<i>PD - May exist at individual provider agencies, but not coordinated across county.</i>	<i>A universal approach to customer concerns allows for continuity among the EMS agencies.</i>

**PREVENTION & COMMUNITY EDUCATION BENCHMARKS —**

<b>Benchmarks</b>	<b>Current Bradford County EMS</b>	<b>System Improvements Per Recommendations</b>
System personnel provide positive role models.	<i>PD- May exist at individual provider agencies, but not coordinated across county.</i>	<i>The EMS Association in collaboration with County can work together to establish guidelines for role modeling.</i>
Programs are targeted to “at risk” populations.	<i>PD - May exist at individual provider agencies, hospitals, or at the County level, but not coordinated across county.</i>	<i>The EMS Association in collaboration with County can work together to establish programs for “at risk” populations.</i>

<b>Benchmarks</b>	<b>Current Bradford County EMS</b>	<b>System Improvements Per Recommendations</b>
Formal and effective programs with defined goals exist.	<i>PD - May exist at individual provider agencies, hospitals, or at the County level, but not coordinated across county.</i>	<i>The EMS Association in collaboration with County can work together to establish guidelines for programs.</i>
Targeted objectives are measured and met.	<i>PD-May exist at individual provider agencies, hospitals, or at the County level, but not coordinated across county.</i>	<i>The EMS Association in collaboration with County can work together to establish guidelines for programs.</i>

**ENSURING OPTIMAL SYSTEM VALUE BENCHMARKS —**

<b>Benchmarks</b>	<b>Current Bradford County EMS</b>	<b>System Improvements Per Recommendations</b>
Clinical outcomes are enhanced by the system.	<i>ND - No, there is not a county-wide initiative to ensure clinical outcomes or improvements.</i>	<i>Consider implementing a county-wide clinical score card that is reviewed monthly with associated goals and/or expected outcomes</i>
Ambulance Response Utilization and transport Utilization (UHU) is measured, and hours are deployed in a manner to achieve efficiency and effectiveness.	<i>ND</i>	<i>EMS agencies do not measure UHU and staff to demand, although some may staff a peak of day unit. Recommend spelling out the metrics for reporting response times, quality assurance and other performance metrics.</i>
Ambulance cost per unit hour and transport document good value.	<i>ND</i>	<i>System evaluation can be ongoing and will provide an assessment of ambulance services and the overall system.</i>
Service agreements represent good value.	<i>ND - Currently there are no agreements in place, service is resolution based with the lowest level of local government.</i>	<i>Consider entering into contractual agreements with each municipality or a collective group of municipalities, that specifies metrics, funding, and expected outcomes.</i>
Non-emergency ambulance effective and efficient.	<i>N/A</i>	<i>The local healthcare system manages most non-emergency patient transport. Recommend the local healthcare system establish contracts and payor-of-last-resort contracts for all local EMS agencies interested in participating in non-emergency transports.</i>
Non-Ambulance but medically necessary (MAV) services are effective and efficient.	<i>N/A</i>	<i>Evolution of the system along with continual assessment will provide a path for MAV services.</i>
System facilitates appropriate medical access.	<i>D</i>	<i>Implementation of consolidated or regional ambulance services will provide access to emergency medical care in a more streamlined fashion.</i>
Financial systems accurately reflect	<i>PD - System finances</i>	<i>If there is implementation of EMS</i>

<b>Benchmarks</b>	<b>Current Bradford County EMS</b>	<b>System Improvements Per Recommendations</b>
system revenues and both direct and indirect costs.	<i>cannot be reflected due to not all agencies providing financial information.</i>	<i>Authority or oversight position, they there may be the ability to capture all financial information for review.</i>
Revenues are collected professionally and in compliance with regulations.	<i>PD - Not known. Finances for all individual agencies was not provided.</i>	<i>Consider countywide billing practices and the use of the same billing company for all ambulance services.</i>
Tax subsidies when required are minimized.	<i>ND - County or local municipalities do not tax for EMS.</i>	<i>A subsidy will be required to support the agencies now and in the future.</i>

**Organizational Structure & Leadership Benchmarks —**

<b>Benchmarks</b>	<b>Current Bradford County EMS</b>	<b>System Improvements Per Recommendations</b>
A lead agency is identified and coordinates system activities.	<i>ND</i>	<i>A Public Safety Dept, County EMS Coordinator, or singular EMS agency is recommended and can coordinate system activities and improvements.</i>
Organizational structure and relationships are well defined.	<i>ND - There is no common organizational structure amongst the organizations.</i>	<i>A Public Safety Dept, County EMS Coordinator, or singular EMS agency is recommended and can coordinate system activities and improvements.</i>
Human resources are developed and otherwise valued.	<i>D - Agencies report staffing issues particularly since COVID; no resolution, at this time.</i>	<i>Recommendation supporting the development of field personnel in a more coordinated fashion. Additionally, recommend coordinating human resource efforts between agencies.</i>
Business planning and measurement processes are defined and utilized.	<i>ND - Does not exist across providers or countywide.</i>	<i>A Public Safety Dept, County EMS Coordinator, or singular EMS agency is recommended and can coordinate system activities and improvements.</i>
Operational and clinical data informs/guides the decision process.	<i>ND - Does not exist across providers or countywide.</i>	<i>The recommended County Public Safety Dept., County EMS Coordinator, or singular EMS</i>

<b>Benchmarks</b>	<b><i>Current Bradford County EMS</i></b>	<b><i>System Improvements Per Recommendations</i></b>
		<i>system can have the Medical Director/Medical Direction Committee play a role in guiding the system.</i>
A structured and effective performance-based quality improvement (QI) system exists.	<i>ND - Does not exist across providers or countywide.</i>	<i>The recommended County Public Safety Dept., County EMS Coordinator, or singular EMS system can have the Medical Director/Medical Direction Committee play a role in guiding the system.</i>



# ATTACHMENT B

**Data Report**

**November 2022**

**Data Analysis**

**Bradford County, PA**

*Prepared by:*



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**CONSULTANT REPORT**

**Bradford County, PA  
DRAFT DATA ANALYSIS**

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## METHODOLOGY

We obtained data files from Bradford County 911 spanning January 1, 2019, through December 31, 2021. As such, three full calendar years of data were available for baseline analysis.

We utilize two distinct measures in this report—call volume and workload. Requests for service are defined as “incidents” or “calls” (i.e., call volume). Call volume reflects the number of times a distinct incident was created involving one or more of the EMS units that respond into Bradford County. “Responses” are the number of times that an individual unit (or units) responded to a call (i.e., workload).

Audits of the data files were first conducted to identify any anomalies for attention and reconciliation prior to data analysis. Calculated times with negative values or with values of zero minutes were excluded, and calculated times considered to be extreme outliers were also excluded from all relevant analyses.

Any reduced sample sizes due to missing data are noted in the report where applicable.

# SNAPSHOT OF 2019-2021

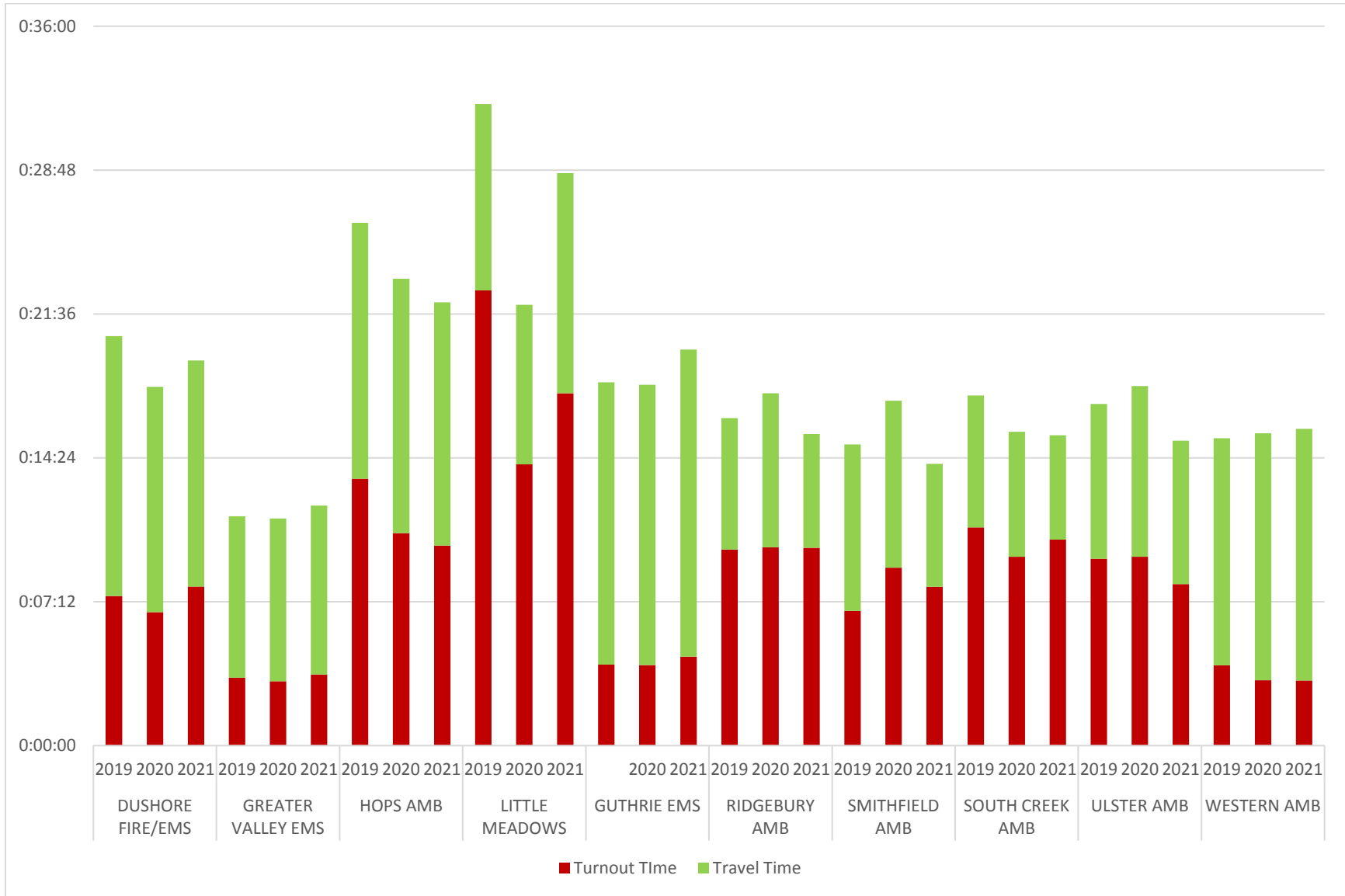
## CALL VOLUME

**Table 1: Number of Calls Received by Agency, Number of Responses and Reporting Period**

<sup>1</sup>Reporting period 2020 contained 366 days due to inclusion of leap year date February 29. All other reporting periods contained 365 days. Data from 2021 does not appear to have anything for November and December.

Agency	Reporting Period	Number of Calls	Number of Responses	Number Arrived on Scene	Average Responses per Call	Average Calls Per Day	Average Responses per Day	90% Response Time
BRADFORD COUNTY (ALL)	2019	12491	11479	10042	1.09	34.22	31.45	0:27:53
	2020	12479	11559	10123	1.08	34.10	31.58	0:27:35
	2021	11953	10812	9405	1.11	32.75	29.62	0:27:35
DUSHORE FIRE/EMS	2019	115	101	89	1.00	0.32	0.28	0:27:22
	2020	108	102	86	1.00	0.30	0.28	0:31:10
	2021	145	137	111	1.00	0.40	0.38	0:27:52
GREATER VALLEY EMS	2019	4842	5243	4771	1.18	13.27	14.36	0:21:20
	2020	4864	5336	4842	1.18	13.29	14.58	0:21:06
	2021	4686	5042	4610	1.20	12.84	13.81	0:22:54
HOPS AMBULANCE	2019	199	203	172	1.26	0.55	0.56	0:38:55
	2020	179	176	165	1.23	0.49	0.48	0:37:14
	2021	180	176	157	1.18	0.49	0.48	0:34:01
LITTLE MEADOWS	2019	80	81	65	1.19	0.22	0.22	0:23:04
	2020	84	78	72	1.20	0.23	0.21	0:23:58
	2021	86	82	57	1.15	0.24	0.22	0:29:29
GUTHRIE EMS	2019	2868	2963	2461	1.10	7.86	8.12	0:34:32
	2020	3122	3281	2697	1.12	8.53	8.96	0:33:01
	2021	2976	3042	2478	1.12	8.15	8.33	0:34:44
RIDGEBURY AMBULANCE	2019	167	157	156	1.07	0.46	0.43	0:26:03
	2020	226	197	198	1.02	0.62	0.54	0:27:23
	2021	165	148	148	1.04	0.45	0.41	0:25:40
SMITHFIELD AMBULANCE	2019	188	161	150	1.10	0.52	0.44	0:26:03
	2020	139	128	127	1.08	0.38	0.35	0:30:14
	2021	8	6	6	1.13	0.02	0.02	0:31:16
SOUTH CREEK AMBULANCE	2019	89	74	76	1.17	0.24	0.20	0:33:23
	2020	80	72	70	1.13	0.22	0.20	0:23:25
	2021	108	108	100	1.12	0.30	0.30	0:25:47
ULSTER AMBULANCE	2019	222	199	162	1.09	0.61	0.55	0:25:33
	2020	145	140	118	1.07	0.40	0.38	0:28:29
	2021	57	56	46	1.11	0.16	0.15	0:23:17
WESTERN AMBULANCE	2019	2007	2297	1940	1.22	5.50	6.29	0:27:53
	2020	1784	2049	1748	1.22	4.87	5.60	0:28:05
	2021	1830	2015	1692	1.19	5.01	5.52	0:28:20

**Figure 1: Average Performance Times by Agency and Reporting Period – First Arriving Units**



# RESPONSE VOLUME BY UNIT

**Table 2: Number of Calls, Number of Responses, 90<sup>th</sup> Percentile Response Time by Unit and Reporting Period**

<sup>1</sup>Reporting period 2020 contained 366 days due to inclusion of leap year date February 29. All other reporting periods contained 365 days. Data from 2021 does not appear to have anything for November and December.

Agency/Unit	Number of Calls	Number of Responses	Number Arrived Scene	% AR	90th % Resp	Number of Calls	Number of Responses	Number Arrived Scene	% AR	90th % Resp	Number of Calls	Number of Responses	Number Arrived Scene	%AR	90th % Resp
<b>DUSHORE FIRE/EMS</b>			<b>2019</b>			<b>2020</b>			<b>2021</b>						
A157	115	101	89	77.4%	0:27:22	108	102	86	79.6%	0:31:10	145	137	111	76.6%	0:27:52
<b>GREATER VALLEY EMS</b>			<b>2019</b>			<b>2020</b>			<b>2021</b>						
GVQRS	37	16	23	62.2%	0:14:47	24	10	16	66.7%	0:17:44	35	15	24	68.6%	0:18:37
GVSCUBA	2	0	0	0.0%		2	0	0	0.0%		1	0	1	100.0%	0:00:30
MEDIC 39	99	93	82	82.8%	0:19:16	79	72	65	82.3%	0:31:02	110	104	92	83.6%	0:24:32
VA1	71	57	47	66.2%	0:19:00	52	35	31	59.6%	0:15:02	29	22	14	48.3%	0:22:55
VA2	27	20	22	81.5%	0:28:14	23	19	14	60.9%	0:20:55	18	15	5	27.8%	0:20:51
VA3	1	1	1	100.0%	0:07:14	3	1	1	33.3%	0:05:02	2	1	0	0.0%	
VA31	1144	1099	1003	87.7%	0:20:30	1228	1172	1066	86.8%	0:20:48	856	780	733	85.6%	0:22:38
VA32	99	93	75	75.8%	0:18:22	774	729	675	87.2%	0:21:09	936	861	789	84.3%	0:21:36
VA33	1232	1183	1054	85.6%	0:21:34	1166	1097	1003	86.0%	0:20:16	909	828	768	84.5%	0:22:39
VA34	174	96	86	49.4%	0:23:36	7	5	3	42.9%	0:19:37	996	894	827	83.0%	0:22:42
VA35	910	867	792	87.0%	0:22:01	1182	1129	1033	87.4%	0:21:38	871	801	720	82.7%	0:23:41
VA36	800	772	702	87.8%	0:21:18	757	720	637	84.1%	0:19:26	492	439	413	83.9%	0:22:56
VA37	64	29	25	39.1%	1:00:50	156	118	100	64.1%	0:24:27	102	74	66	64.7%	0:25:43
VA38	743	703	666	89.6%	0:20:42	3	2	1	33.3%	0:03:01	1	1	1	100.0%	0:04:26
VA39	37	30	29	78.4%	0:34:03	47	45	35	74.5%	0:26:28	33	33	23	69.7%	0:32:08
VA4	41	24	33	80.5%	0:21:59	7	5	4	57.1%	0:06:59	5	4	1	20.0%	0:00:02
VA5	1	0	1	100.0%	0:09:29	8	5	5	62.5%	0:30:25	8	4	8	100.0%	0:10:08
VA6						1	0	1	100.0%	0:05:51	1	1	1	100.0%	0:18:54
VABO1						1	0	1	100.0%	0:00:27	1	1	0	0.0%	
VATR1	8	8	8	100.0%	0:28:12	8	5	5	62.5%	0:28:38	6	4	5	83.3%	0:36:48
VC30	92	76	66	71.7%	0:19:49	107	85	86	80.4%	0:28:16	92	79	65	70.7%	0:26:03
VR7	108	76	56	51.9%	0:12:06	107	82	60	56.1%	0:14:34	104	81	54	51.9%	0:16:50
<b>HOPS AMB</b>			<b>2019</b>			<b>2020</b>			<b>2021</b>						
4A1	177	157	116	65.5%	0:44:38	124	112	90	72.6%	0:40:33	139	123	104	74.8%	0:33:58
4QRS	74	46	56	75.7%	0:22:20	96	64	75	78.1%	0:28:06	74	53	53	71.6%	0:33:34
<b>LITTLE MEADOWS</b>			<b>2019</b>			<b>2020</b>			<b>2021</b>						
LM3	80	72	51	63.8%	0:23:52	84	72	57	67.9%	0:24:09	85	75	48	56.5%	0:29:45
LMQRS	15	9	14	93.3%	0:16:22	17	6	15	88.2%	0:17:31	14	7	9	64.3%	0:18:32
<b>GUTHRIE EMS</b>			<b>2019</b>			<b>2020</b>			<b>2021</b>						
MA101	845	800	656	77.6%	0:33:16	476	443	358	75.2%	0:33:56	397	352	262	66.0%	0:38:37
MA102	490	462	389	79.4%	0:34:32	669	638	554	82.8%	0:32:17	726	687	583	80.3%	0:36:13
MA103	293	265	225	76.8%	0:36:27	87	75	61	70.1%	0:34:19	246	216	174	70.7%	0:33:24
MA104	579	551	453	78.2%	0:33:55	960	918	748	77.9%	0:31:10	935	891	728	77.9%	0:33:57
MA105	476	444	365	76.7%	0:37:03	685	660	550	80.3%	0:36:18	509	468	375	73.7%	0:33:55
MA106	451	429	356	78.9%	0:33:10	505	466	366	72.5%	0:32:00	384	337	285	74.2%	0:34:43
MA107						102	79	57	55.9%	0:43:29	125	89	63	50.4%	0:34:44
MAQRS	23	12	17	73.9%	0:15:55	4	2	3	75.0%	0:14:50	7	1	7	100.0%	0:20:44
MEMORIAL1						9	0	0	0.0%		13	1	1	7.7%	0:19:51
<b>RIDGEBURY AMB</b>			<b>2019</b>			<b>2020</b>			<b>2021</b>						
9A1	165	153	146	88.5%	0:26:25	212	184	182	85.8%	0:27:08	151	140	134	88.7%	0:25:12
9A2	3	2	2	66.7%	0:20:35	16	12	13	81.3%	0:40:41	6	1	2	33.3%	0:28:02
9QRS	11	2	8	72.7%	0:16:27	3	1	3	100.0%	0:46:14	15	7	12	80.0%	0:25:15
<b>SMITHFIELD AMB</b>			<b>2019</b>			<b>2020</b>			<b>2021</b>						
3A1	179	146	127	70.9%	0:25:17	127	115	111	87.4%	0:30:24	2	1	1	50.0%	0:06:08
3A2	8	7	8	100.0%	0:35:17	5	5	4	80.0%	0:21:21					
3QRS	20	8	15	75.0%	0:24:35	18	8	12	66.7%	0:22:47	7	5	5	71.4%	0:31:32
<b>SOUTH CREEK AMB</b>			<b>2019</b>			<b>2020</b>			<b>2021</b>						
13A1	86	64	64	74.4%	0:34:53	65	55	51	78.5%	0:23:15	98	92	82	83.7%	0:25:41
13QRS	18	10	12	66.7%	0:23:08	25	17	19	76.0%	0:23:18	23	16	18	78.3%	0:26:23
<b>ULSTER AMB</b>			<b>2019</b>			<b>2020</b>			<b>2021</b>						
17A1	214	180	141	65.9%	0:25:27	106	98	87	82.1%	0:28:32	39	36	30	76.9%	0:25:29
17QRS	27	19	21	77.8%	0:26:41	49	42	31	63.3%	0:27:05	24	20	16	66.7%	0:14:59
<b>WESTERN AMB</b>			<b>2019</b>			<b>2020</b>			<b>2021</b>						
WA1	569	551	460	80.8%	0:26:56	529	508	432	81.7%	0:27:33	420	379	331	78.8%	0:30:27
WA2	114	75	67	58.8%	0:27:23	1	1	1	100.0%	0:24:11	18	8	7	38.9%	0:26:52
WA3	29	27	18	62.1%	0:32:55	25	23	18	72.0%	0:40:30	22	20	16	72.7%	0:32:40
WA4	13	2	8	61.5%	0:00:47										
WA5	493	478	385	78.1%	0:27:28	511	481	423	82.8%	0:27:25	704	663	539	76.6%	0:26:17
WA55	1	0	0	0.0%		5	5	1	20.0%	0:12:26	3	2	0	0.0%	
WA6	645	624	532	82.5%	0:27:39	332	306	256	77.1%	0:27:33	750	705	597	79.6%	0:27:59
WA7	205	198	167	81.5%	0:29:09	432	414	347	80.3%	0:28:30	139	136	118	84.9%	0:29:55
WA8	289	259	219	75.8%	0:28:38	261	245	213	81.6%	0:26:09	31	20	21	67.7%	0:21:25
WA9	82	77	74	90.2%	0:33:16	64	56	47	73.4%	0:30:23	69	67	49	71.0%	0:31:42
WAQRS	12	6	10	83.3%	0:14:17	1	1	1	100.0%	0:01:59	7	3	5	71.4%	0:21:32
WESTERN1						23	8	8	34.8%	0:15:33	18	12	9	50.0%	0:13:23
WSR1						1	1	1	100.0%	0:18:15					

# CALL VOLUME ANALYSES

## TEMPORAL ANALYSES OF CALL VOLUME

Temporal analyses were conducted to evaluate patterns in community demands. These analyses are based on the total requests for service received from the community for each agency as well as combined across all three agencies during each reporting period and examine the frequency of incidents by month (Table 6; Figures 1 through 4), day of week (Table 7; Figures 5 through 8), and hour of day (Tables 8 through 11; Figures 9 through 12). Note that in the figures, the value ranges on the y-axis (vertical axis) remain consistent across the three agencies to facilitate visual comparisons of average daily call volume among the agencies, but that the value ranges change for the combined agency figures to accommodate the larger volume of calls.

**Table 3: Number of Calls and Average Number of Calls per Day by Agency, Reporting Period, and Month**

<sup>1</sup>Reporting period 2020 contained 366 days due to inclusion of leap year date February 29. All other reporting periods contained 365 days. Data from 2021 does not appear to have anything for November and December.

Agency	Metric	Reporting Period	January	February	March	April	May	June	July	August	September	October	November	December
BRADFORD COUNTY	Number of Calls	2019	887	852	949	845	865	980	925	960	937	886	819	872
		2020	871	828	801	721	835	831	1015	944	889	1059	913	1024
		2021	1050	878	977	902	1017	1032	1061	1083	1058	1076	107	
	Average Number of Calls per Day	2019	28.61	30.43	30.61	28.17	27.90	32.67	29.84	30.97	31.23	28.58	27.30	28.13
		2020	28.10	28.55	25.84	24.03	26.94	27.70	32.74	30.45	29.63	34.16	30.43	33.03
		2021	33.87	31.36	31.52	30.07	32.81	34.40	34.23	34.94	35.27	34.71	3.57	



Agency	Metric	Reporting Period	January	February	March	April	May	June	July	August	September	October	November	December
DUSHORE FIRE/EMS	Number of Calls	2019	9	13	11	6	3	14	9	7	12	6	10	15
		2020	6	9	9	13	9	9	8	8	10	16	4	7
		2021	14	10	10	11	14	20	18	17	16	14	1	
	Average Number of Calls per Day	2019	0.29	0.46	0.35	0.20	0.10	0.47	0.29	0.23	0.40	0.19	0.33	0.48
		2020	0.19	0.31	0.29	0.43	0.29	0.30	0.26	0.26	0.33	0.52	0.13	0.23
		2021	0.45	0.36	0.32	0.37	0.45	0.67	0.58	0.55	0.53	0.45	0.03	
GREATER VALLEY EMS	Number of Calls	2019	373	357	403	392	399	470	437	440	398	398	406	369
		2020	380	361	367	314	388	369	437	424	389	503	438	494
		2021	458	376	463	429	497	461	469	493	495	488	57	
	Average Number of Calls per Day	2019	12.03	12.75	13.00	13.07	12.87	15.67	14.10	14.19	13.27	12.84	13.53	11.90
		2020	12.26	12.45	11.84	10.47	12.52	12.30	14.10	13.68	12.97	16.23	14.60	15.94
		2021	14.77	13.43	14.94	14.30	16.03	15.37	15.13	15.90	16.50	15.74	1.90	
HOPS AMBULANCE	Number of Calls	2019	15	17	21	14	18	22	16	10	15	23	12	16
		2020	16	20	15	15	19	9	21	9	13	15	11	16
		2021	22	20	17	14	23	22	17	17	21	6	1	
	Average Number of Calls per Day	2019	0.48	0.61	0.68	0.47	0.58	0.73	0.52	0.32	0.50	0.74	0.40	0.52
		2020	0.52	0.69	0.48	0.50	0.61	0.30	0.68	0.29	0.43	0.48	0.37	0.52
		2021	0.71	0.71	0.55	0.47	0.74	0.73	0.55	0.55	0.70	0.19	0.03	
LITTLE MEADOWS	Number of Calls	2019	4	5	5	1	4	7	9	9	11	11	5	9
		2020	4	9	9	1	6	8	8	14	7	7	7	4
		2021	6	7	11	5	9	10	13	3	9	11	2	
	Average Number of Calls per Day	2019	0.13	0.18	0.16	0.03	0.13	0.23	0.29	0.29	0.37	0.35	0.17	0.29
		2020	0.13	0.31	0.29	0.03	0.19	0.27	0.26	0.45	0.23	0.23	0.23	0.13
		2021	0.19	0.25	0.35	0.17	0.29	0.33	0.42	0.10	0.30	0.35	0.07	

Agency	Metric	Reporting Period	January	February	March	April	May	June	July	August	September	October	November	December
GUTHRIE EMS	Number of Calls	2019	220	237	247	210	234	253	212	248	273	266	218	250
		2020	237	224	217	213	250	263	339	272	272	297	270	268
		2021	321	276	263	256	281	311	296	324	290	331	27	
	Average Number of Calls per Day	2019	7.10	8.46	7.97	7.00	7.55	8.43	6.84	8.00	9.10	8.58	7.27	8.06
		2020	7.65	7.72	7.00	7.10	8.06	8.77	10.94	8.77	9.07	9.58	9.00	8.65
		2021	10.35	9.86	8.48	8.53	9.06	10.37	9.55	10.45	9.67	10.68	0.90	
RIDGEBURY AMBULANCE	Number of Calls	2019	16	12	12	9	12	10	12	23	14	10	16	21
		2020	22	18	20	16	15	10	20	23	22	17	19	24
		2021	21	15	22	14	13	16	25	15	10	13	1	
	Average Number of Calls per Day	2019	0.52	0.43	0.39	0.30	0.39	0.33	0.39	0.74	0.47	0.32	0.53	0.68
		2020	0.71	0.62	0.65	0.53	0.48	0.33	0.65	0.74	0.73	0.55	0.63	0.77
		2021	0.68	0.54	0.71	0.47	0.42	0.53	0.81	0.48	0.33	0.42	0.03	
SMITHFIELD AMBULANCE	Number of Calls	2019	12	14	18	13	12	19	23	12	18	19	12	16
		2020	18	18	20	8	5	14	16	11	9	15	5	
		2021	4	1				1	1		1			
	Average Number of Calls per Day	2019	0.39	0.50	0.58	0.43	0.39	0.63	0.74	0.39	0.60	0.61	0.40	0.52
		2020	0.58	0.62	0.65	0.27	0.16	0.47	0.52	0.35	0.30	0.48	0.17	0.00
		2021	0.13	0.04	0.00	0.00	0.00	0.03	0.03	0.00	0.03	0.00	0.00	
SOUTH CREEK AMBULANCE	Number of Calls	2019	11	9	13	10	8	4	6	10	3	5	3	7
		2020	15	5	7	10	8	6	5	5	6	5	5	3
		2021	13	14	3	10	14	7	11	11	12	11	2	
	Average Number of Calls per Day	2019	0.35	0.32	0.42	0.33	0.26	0.13	0.19	0.32	0.10	0.16	0.10	0.23
		2020	0.48	0.17	0.23	0.33	0.26	0.20	0.16	0.16	0.20	0.16	0.17	0.10
		2021	0.42	0.50	0.10	0.33	0.45	0.23	0.35	0.35	0.40	0.35	0.07	

Agency	Metric	Reporting Period	January	February	March	April	May	June	July	August	September	October	November	December
ULSTER AMBULANCE	Number of Calls	2019	17	21	30	13	15	21	22	13	20	16	11	23
		2020	13	15	9	12	17	15	15	24	18	5	1	1
		2021	1	1	7	9	7	5	5	13	6	3		
	Average Number of Calls per Month	2019	0.55	0.75	0.97	0.43	0.48	0.70	0.71	0.42	0.67	0.52	0.37	0.74
		2020	0.42	0.52	0.29	0.40	0.55	0.50	0.48	0.77	0.60	0.16	0.03	0.03
		2021	0.03	0.04	0.23	0.30	0.23	0.17	0.16	0.42	0.20	0.10	0.00	
WESTERN AMBULANCE	Number of Calls	2019	210	167	189	177	160	160	179	188	173	132	126	146
		2020	160	149	128	119	118	128	146	154	143	179	153	207
		2021	190	158	181	154	159	179	206	190	198	199	16	
	Average Number of Calls per Month	2019	6.77	5.96	6.10	5.90	5.16	5.33	5.77	6.06	5.77	4.26	4.20	4.71
		2020	5.16	5.14	4.13	3.97	3.81	4.27	4.71	4.97	4.77	5.77	5.10	6.68
		2021	6.13	5.64	5.84	5.13	5.13	5.97	6.65	6.13	6.60	6.42	0.53	

Figure 2: Average Number of Calls per Day by Month and Reporting Period – Bradford County - Combined

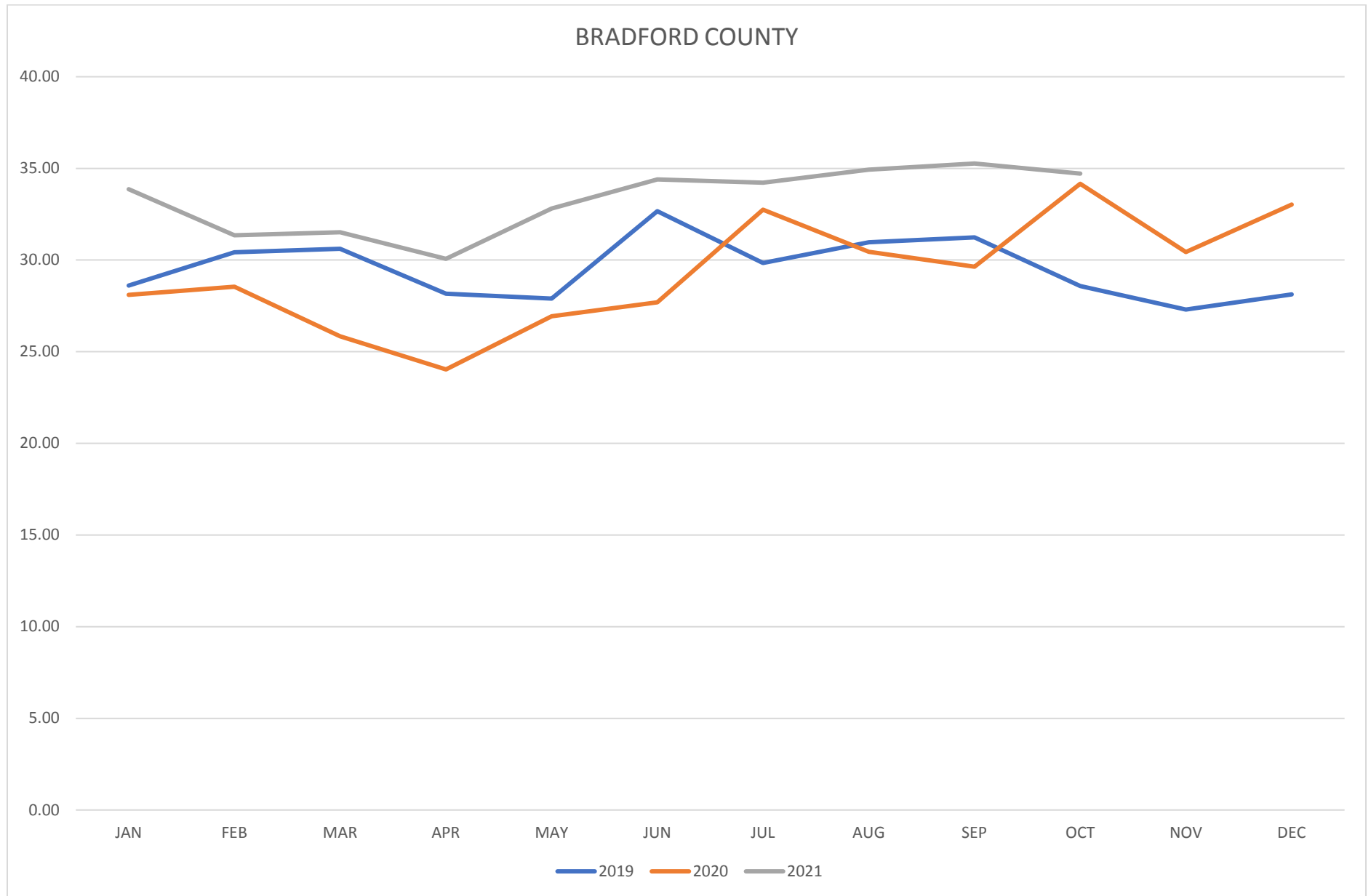


Figure 3: Average Number of Calls per Day by Month and Reporting Period – DUSHORE FIRE/EMS

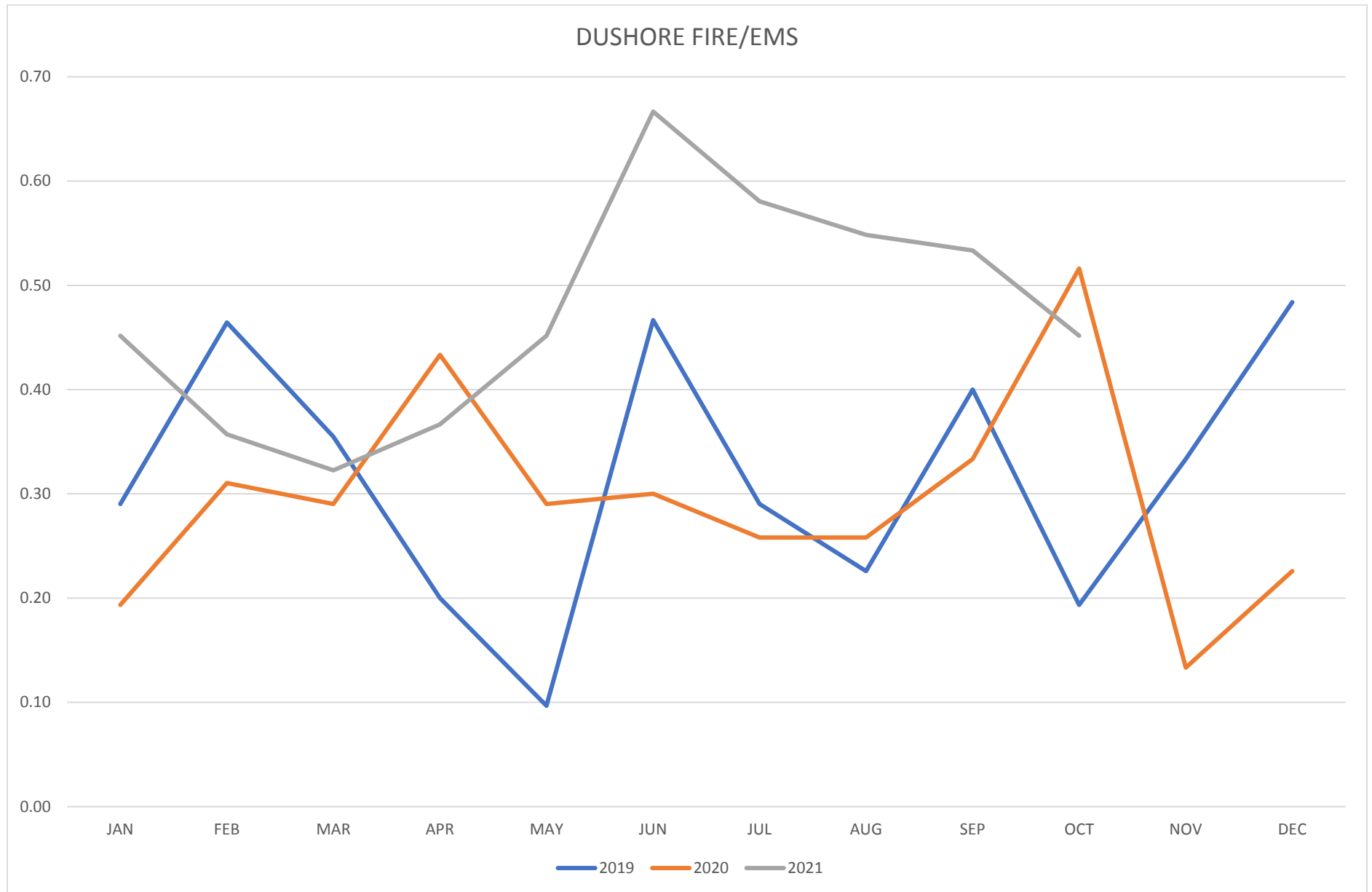


Figure 4: Average Number of Calls per Day by Month and Reporting Period –Greater Valley EMS

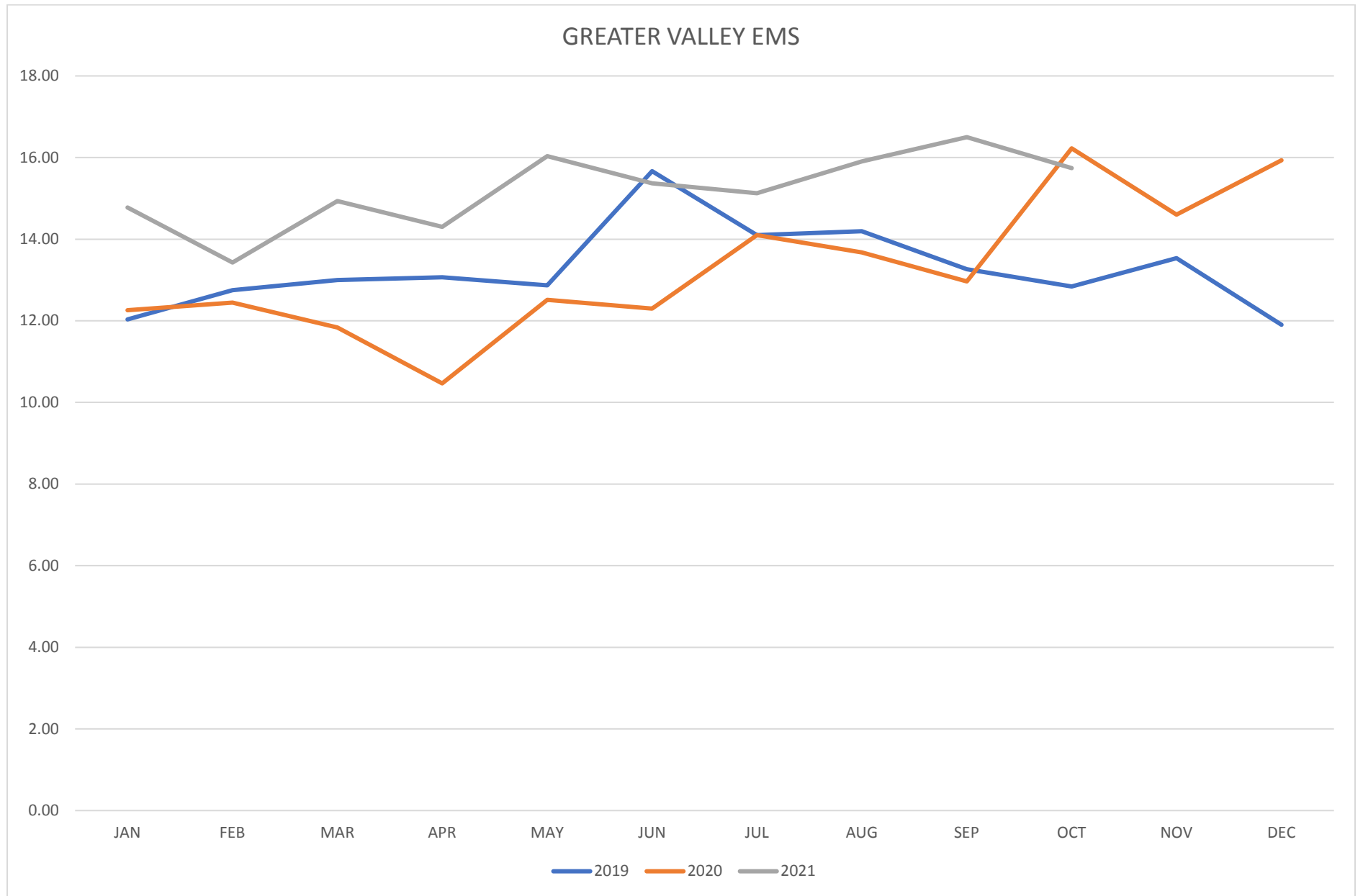


Figure 5: Average Number of Calls per Day by Month and Reporting Period – Hops Ambulance

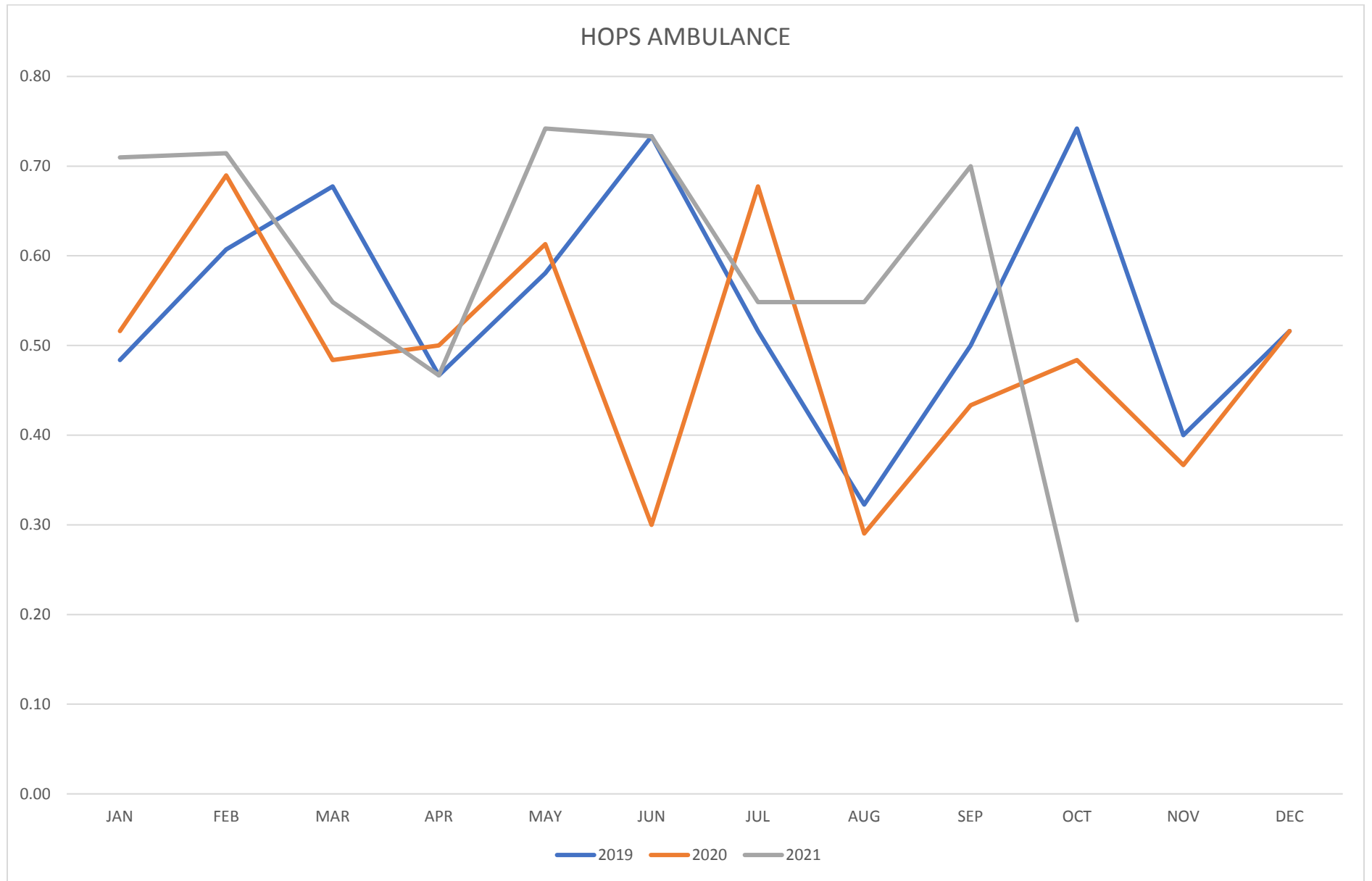


Figure 6: Average Number of Calls per Day by Month and Reporting Period – Little Meadows

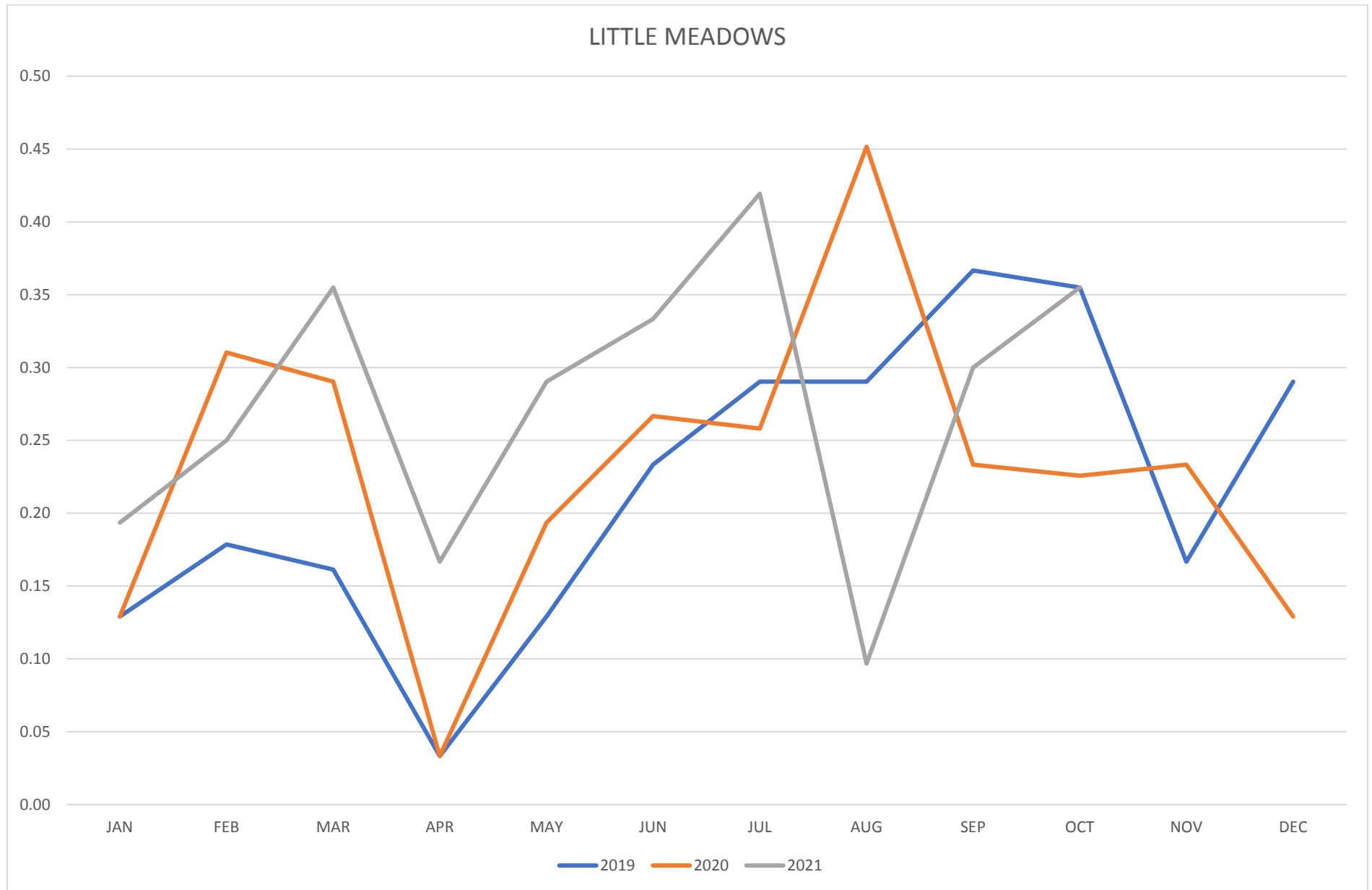




Figure 7: Average Number of Calls per Day by Month and Reporting Period – Memorial EMS

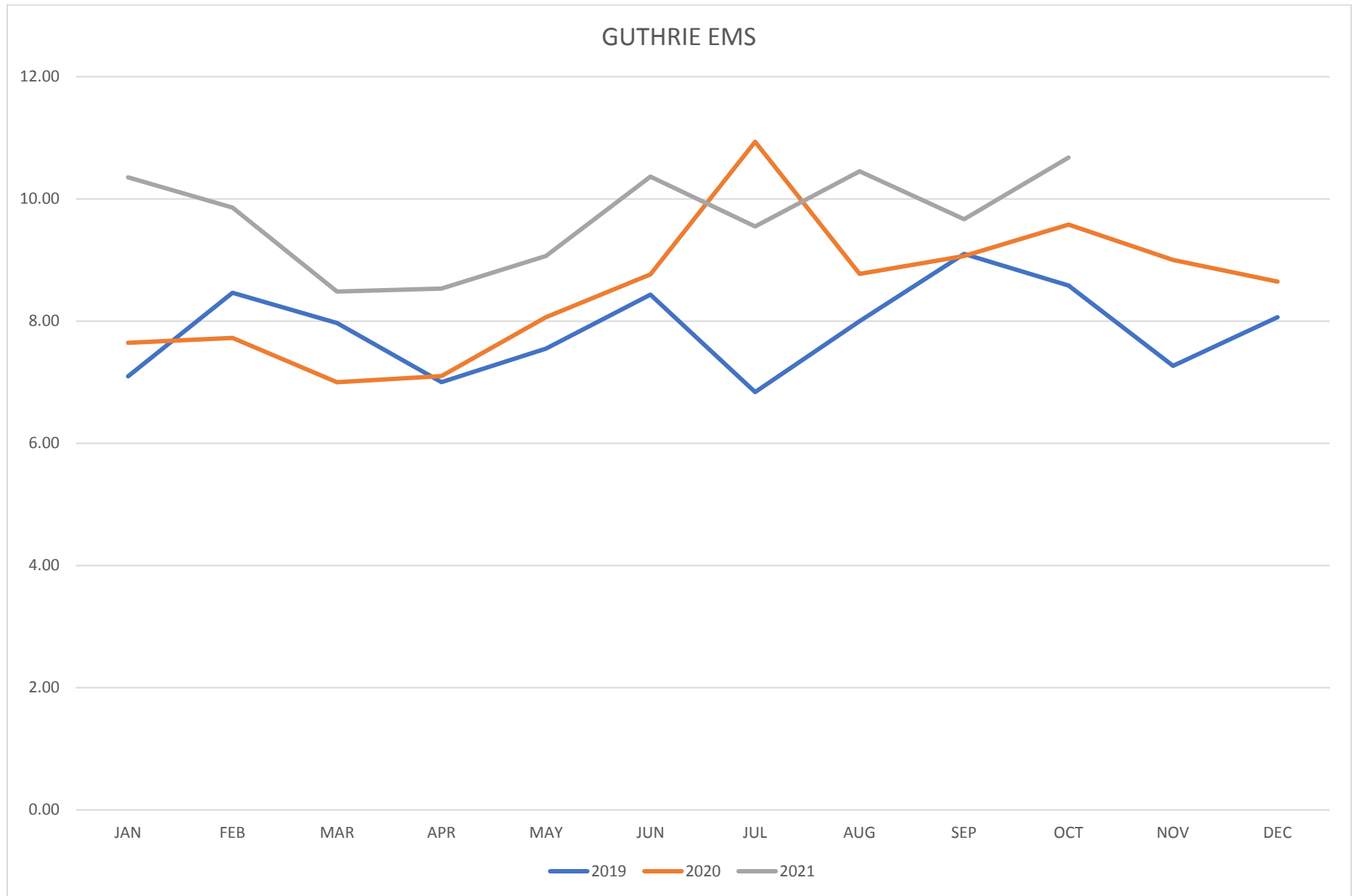


Figure 8: Average Number of Calls per Day by Month and Reporting Period – Ridgebury Ambulance

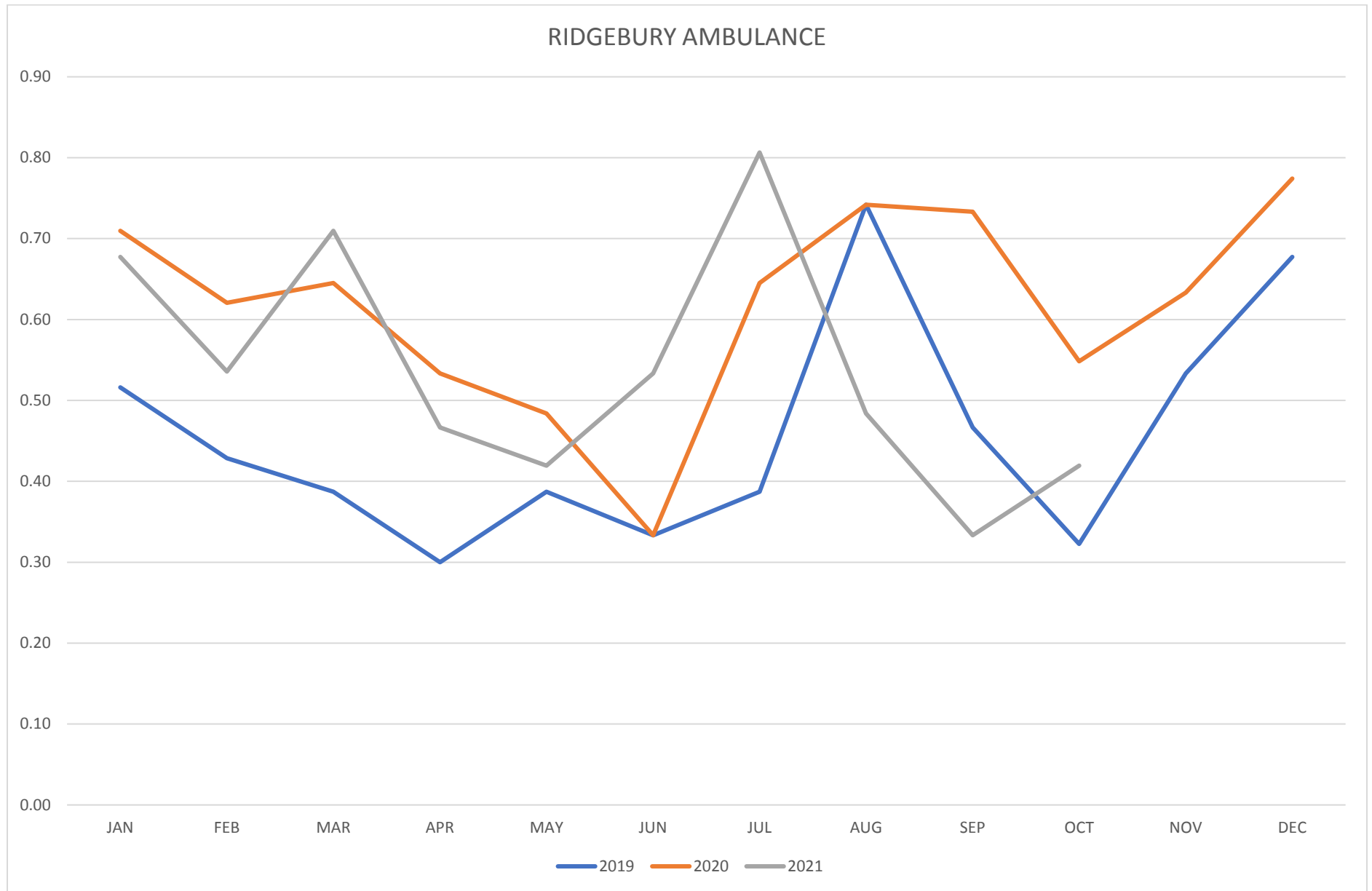


Figure 9: Average Number of Calls per Day by Month and Reporting Period – Smithfield Ambulance

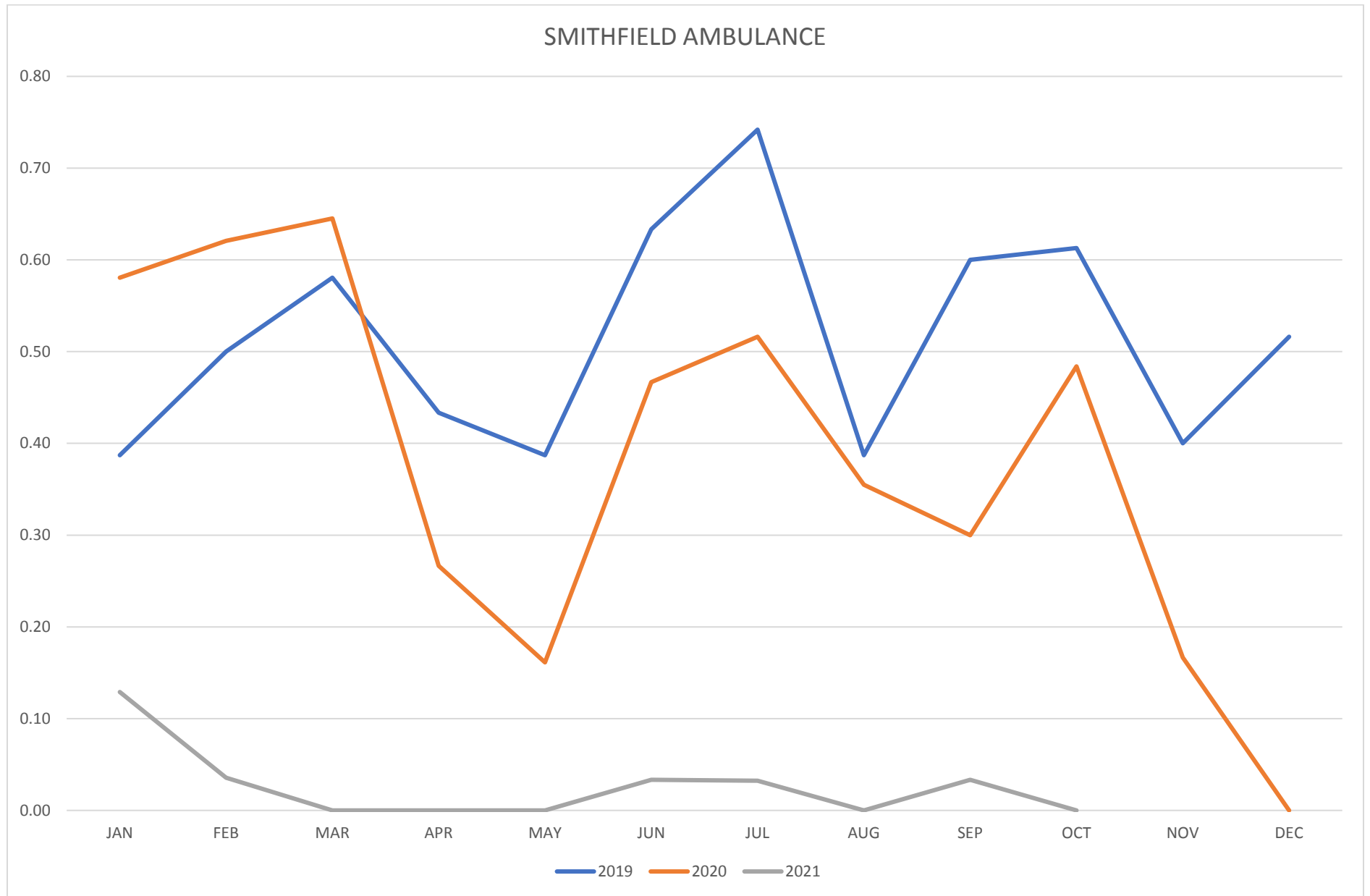


Figure 10: Average Number of Calls per Day by Month and Reporting Period – South Creek Ambulance

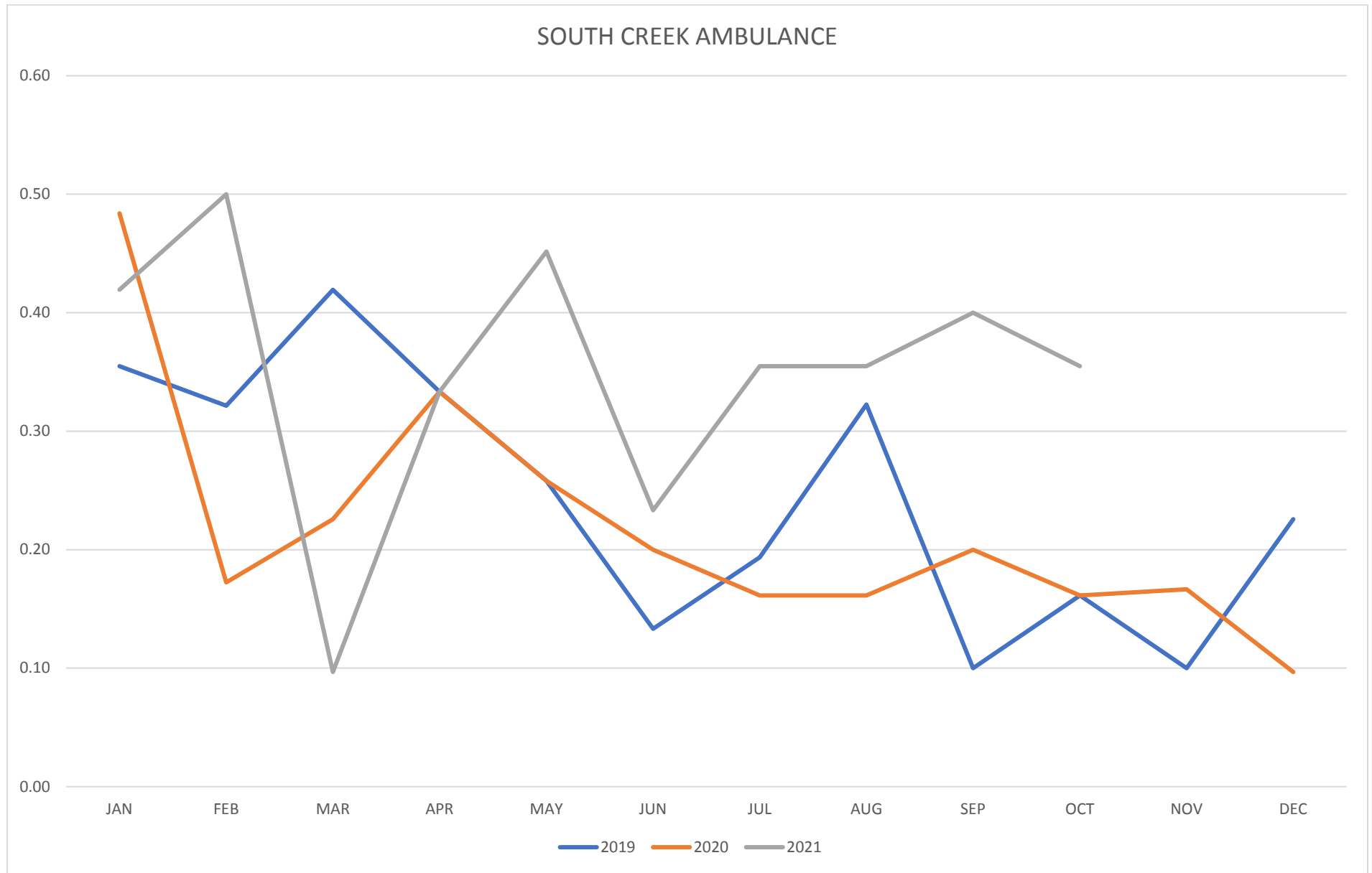


Figure 11: Average Number of Calls per Day by Month and Reporting Period – Ulster Ambulance

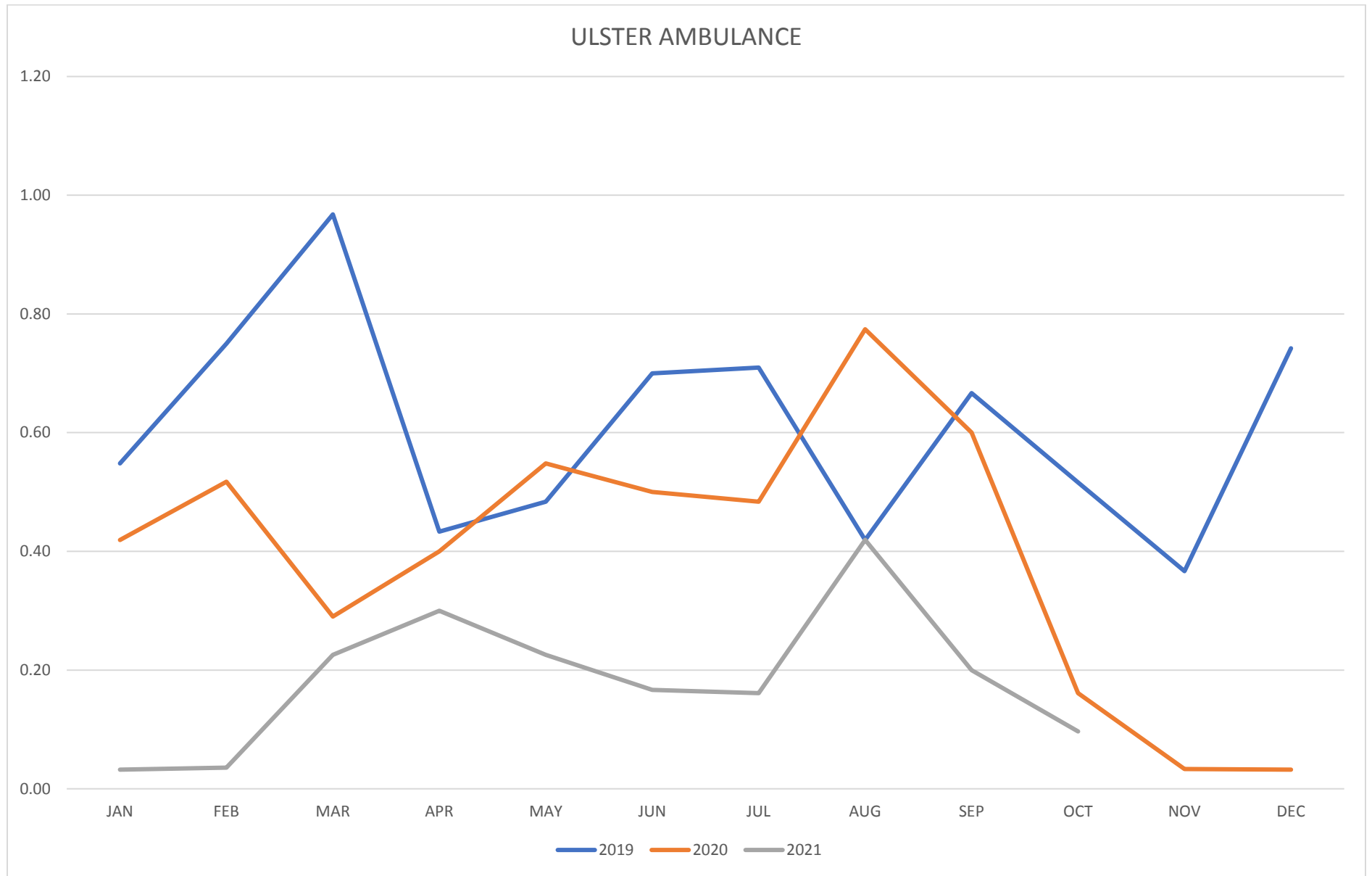
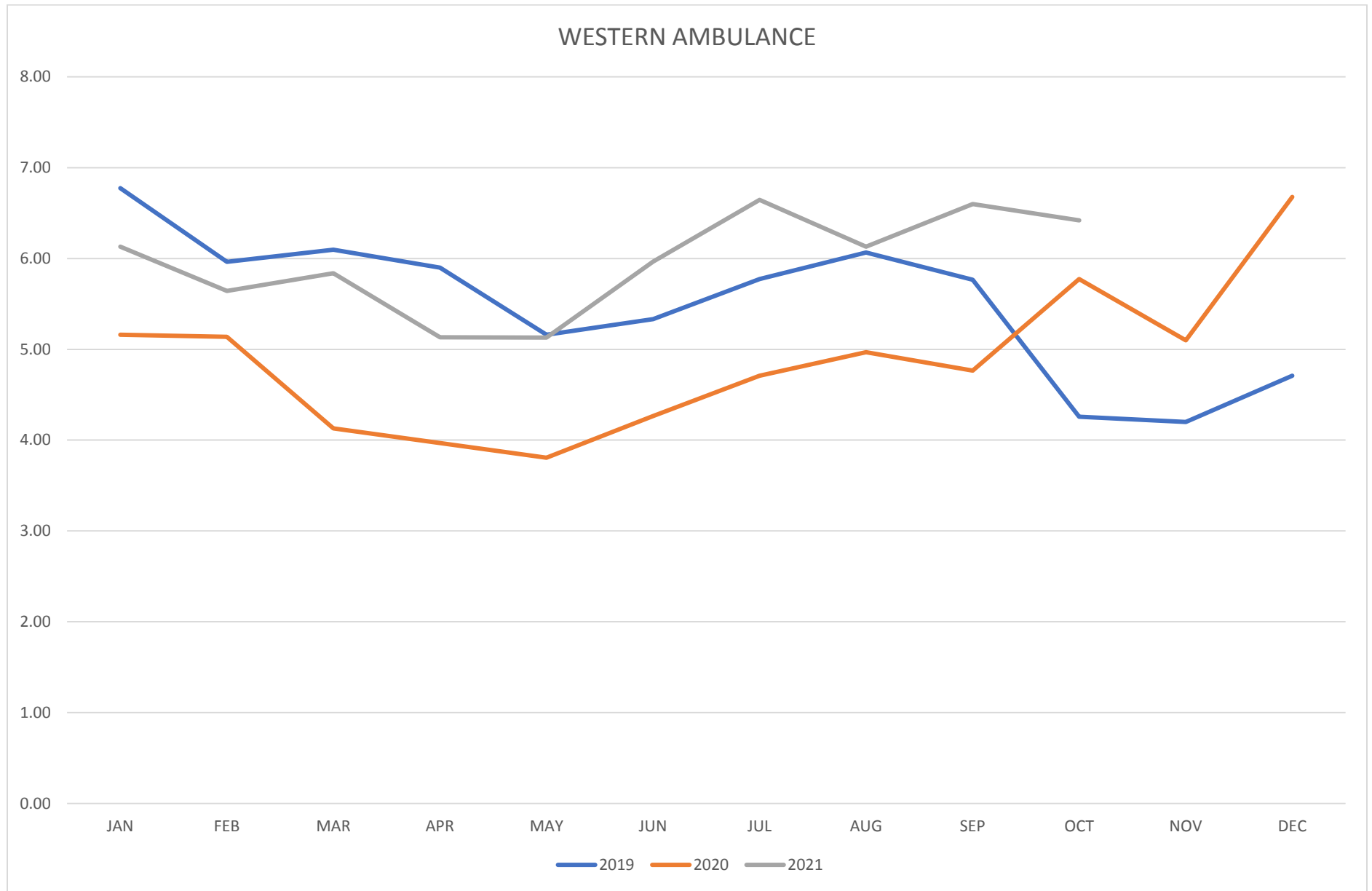


Figure 12: Average Number of Calls per Day by Month and Reporting Period – Western Ambulance



**Table 4: Number of Calls and Average Number of Calls per Day by Agency, Reporting Period, and Day of Week**

Agency	Metric	Reporting Period	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
BRADFORD COUNTY	Number of Calls	2019	1401	1572	1506	1536	1500	1727	1535
		2020	1437	1591	1500	1521	1550	1588	1544
		2021	1368	1473	1503	1411	1439	1657	1390
	Average Number of Calls per Day	2019	26.94	30.23	28.42	29.54	28.85	33.21	29.52
		2020	27.63	30.60	28.85	28.70	29.25	30.54	29.69
		2021	26.31	28.33	28.90	27.13	27.67	31.26	26.73
DUSHORE FIRE/EMS	Number of Calls	2019	16	21	17	19	13	16	13
		2020	13	13	15	26	16	15	10
		2021	21	28	20	21	19	19	17
	Average Number of Calls per Day	2019	0.3	0.4	0.3	0.4	0.3	0.3	0.3
		2020	0.3	0.3	0.3	0.5	0.3	0.3	0.2
		2021	0.4	0.5	0.4	0.4	0.4	0.4	0.3
GREATER VALLEY EMS	Number of Calls	2019	651	692	680	708	667	764	680
		2020	623	743	693	667	697	713	728
		2021	599	669	702	648	685	769	614
	Average Number of Calls per Day	2019	12.5	13.3	12.8	13.6	12.8	14.7	13.1
		2020	12.0	14.3	13.3	12.6	13.2	13.7	14.0
		2021	11.5	12.9	13.5	12.5	13.2	14.5	11.8
HOPS AMBULANCE	Number of Calls	2019	27	30	39	28	16	21	38
		2020	29	24	27	26	19	20	34
		2021	28	14	21	24	21	31	41
	Average Number of Calls per Day	2019	0.5	0.6	0.7	0.5	0.3	0.4	0.7
		2020	0.6	0.5	0.5	0.5	0.4	0.4	0.7
		2021	0.5	0.3	0.4	0.5	0.4	0.6	0.8
LITTLE MEADOWS	Number of Calls	2019	11	9	10	12	15	14	9
		2020	14	10	10	9	11	18	12
		2021	15	15	15	8	8	13	12
	Average Number of Calls per Day	2019	0.2	0.2	0.2	0.2	0.3	0.3	0.2
		2020	0.3	0.2	0.2	0.2	0.2	0.3	0.2
		2021	0.3	0.3	0.3	0.2	0.2	0.2	0.2

GUTHRIE EMS	Number of Calls	2019	348	404	397	421	402	495	401
		2020	446	448	414	467	446	466	435
		2021	419	454	413	412	400	477	401
	Average Number of Calls per Day	2019	6.7	7.8	7.5	8.1	7.7	9.5	7.7
		2020	8.6	8.6	8.0	8.8	8.4	9.0	8.4
		2021	8.1	8.7	7.9	7.9	7.7	9.0	7.7
RIDGEBURY AMBULANCE	Number of Calls	2019	19	24	25	30	23	23	23
		2020	35	32	30	33	31	31	34
		2021	25	19	26	20	21	27	27
	Average Number of Calls per Day	2019	0.4	0.5	0.5	0.6	0.4	0.4	0.4
		2020	0.7	0.6	0.6	0.6	0.6	0.6	0.7
		2021	0.5	0.4	0.5	0.4	0.4	0.5	0.5

Agency	Metric	Reporting Period	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
SMITHFIELD AMBULANCE	Number of Calls	2019	27	35	14	32	19	38	23
		2020	20	14	21	17	22	27	18
		2021	1	1		1	2	1	2
	Average Number of Calls per Day	2019	0.5	0.7	0.3	0.6	0.4	0.7	0.4
		2020	0.4	0.3	0.4	0.3	0.4	0.5	0.3
		2021	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SOUTH CREEK AMBULANCE	Number of Calls	2019	11	12	10	15	15	11	15
		2020	7	11	14	13	11	12	12
		2021	13	16	21	12	12	12	22
	Average Number of Calls per Day	2019	0.2	0.2	0.2	0.3	0.3	0.2	0.3
		2020	0.1	0.2	0.3	0.2	0.2	0.2	0.2
		2021	0.3	0.3	0.4	0.2	0.2	0.2	0.4
ULSTER AMBULANCE	Number of Calls	2019	40	31	34	29	23	31	34
		2020	23	16	23	15	18	26	24
		2021	9	8	8	2	10	8	12
	Average Number of Calls per Day	2019	0.8	0.6	0.6	0.6	0.4	0.6	0.7
		2020	0.4	0.3	0.4	0.3	0.3	0.5	0.5
		2021	0.2	0.2	0.2	0.0	0.2	0.2	0.2
WESTERN AMBULANCE	Number of Calls	2019	251	314	280	242	307	314	299
		2020	227	280	253	248	279	260	237
		2021	238	249	277	263	261	300	242
	Average Number of Calls per Day	2019	4.8	6.0	5.3	4.7	5.9	6.0	5.8
		2020	4.4	5.4	4.9	4.7	5.3	5.0	4.6
		2021	4.6	4.8	5.3	5.1	5.0	5.7	4.7



Figure 13: Average Number of Calls per Day by Day of Week and Reporting Period – Bradford County - Combined

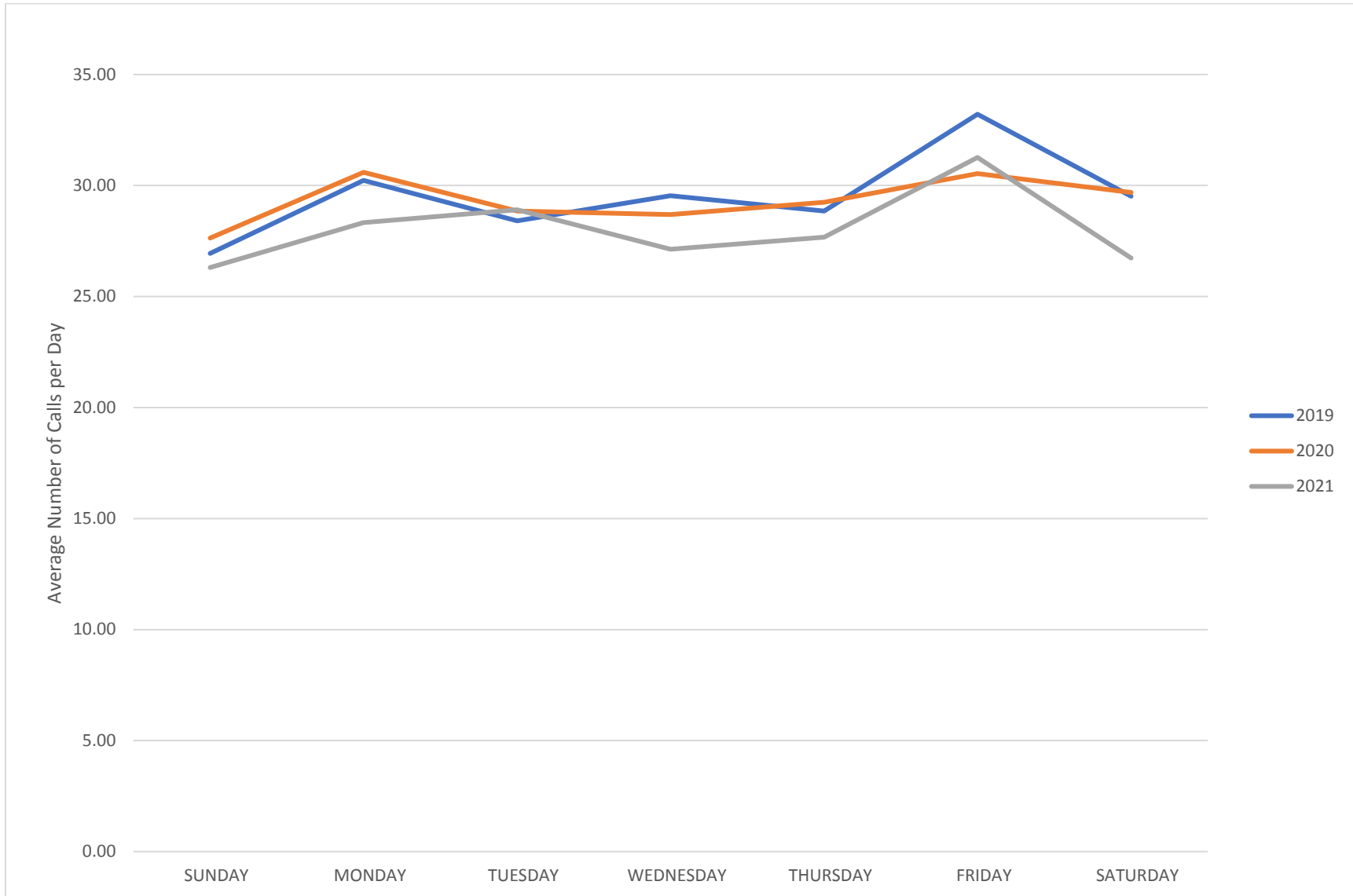


Figure 14: Average Number of Calls per Day by Day of Week and Reporting Period – Dushore Fire / EMS

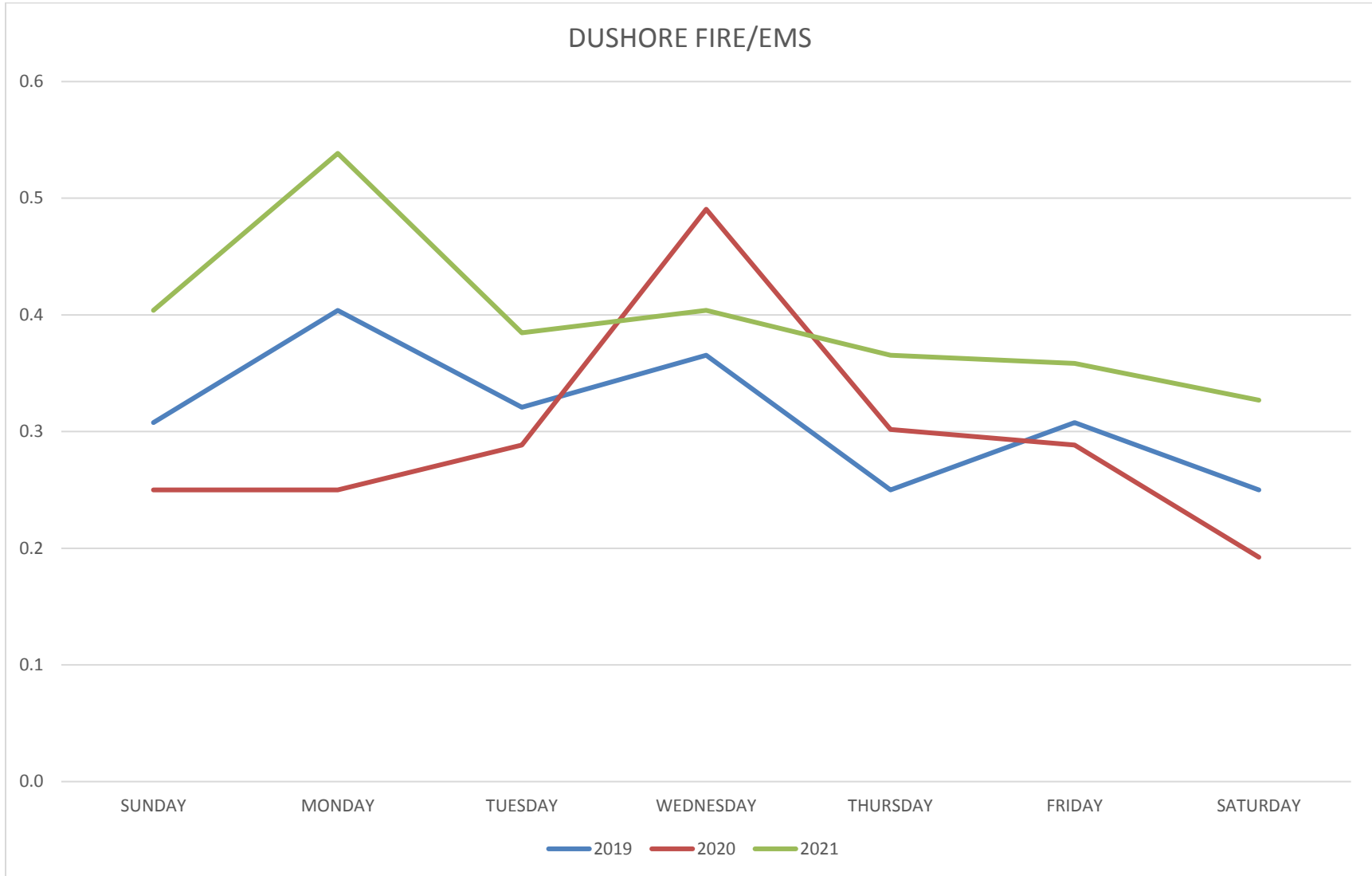


Figure 15: Average Number of Calls per Day by Day of Week and Reporting Period – Greater Valley EMS

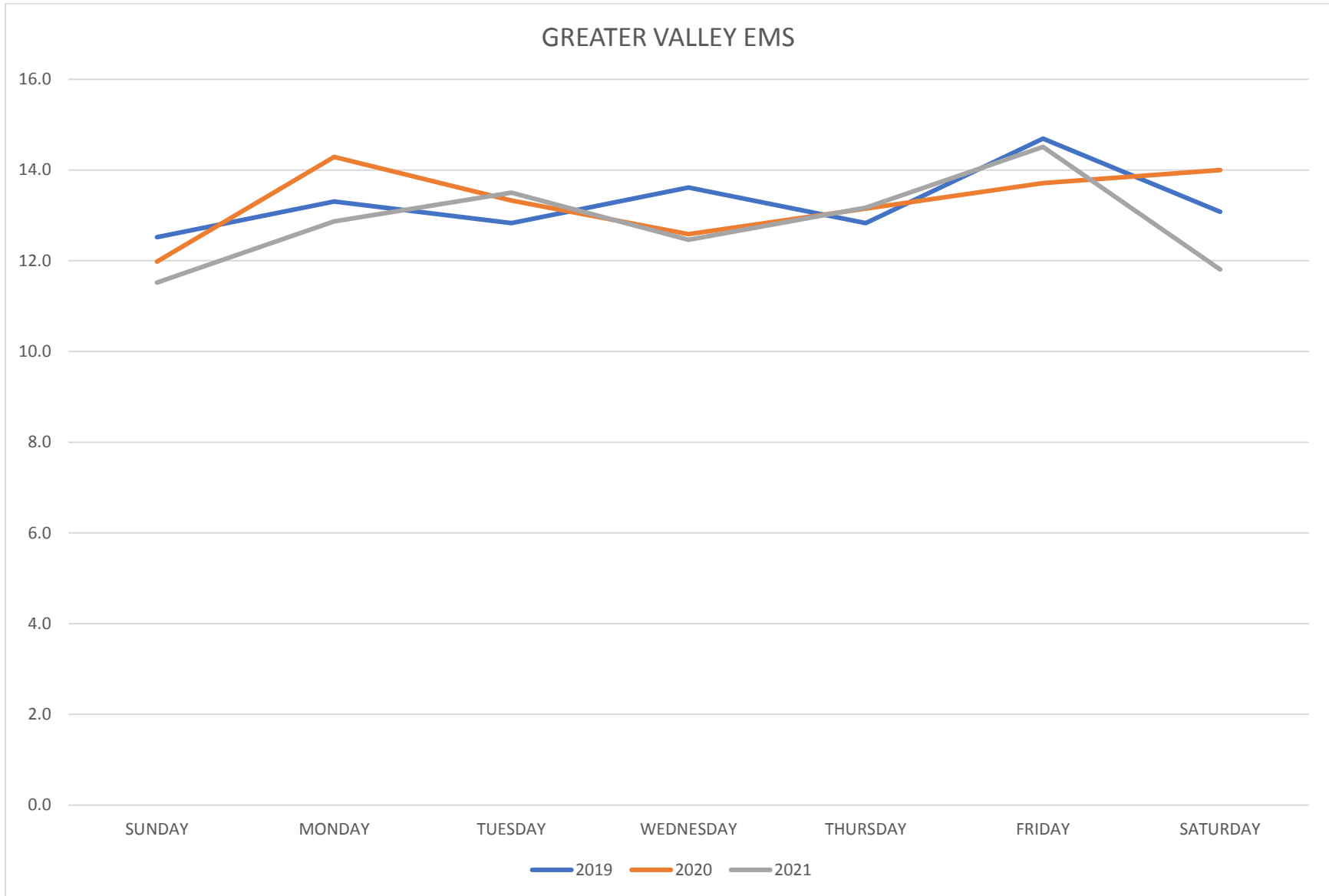


Figure 16: Average Number of Calls per Day by Day of Week and Reporting Period – Hops Ambulance

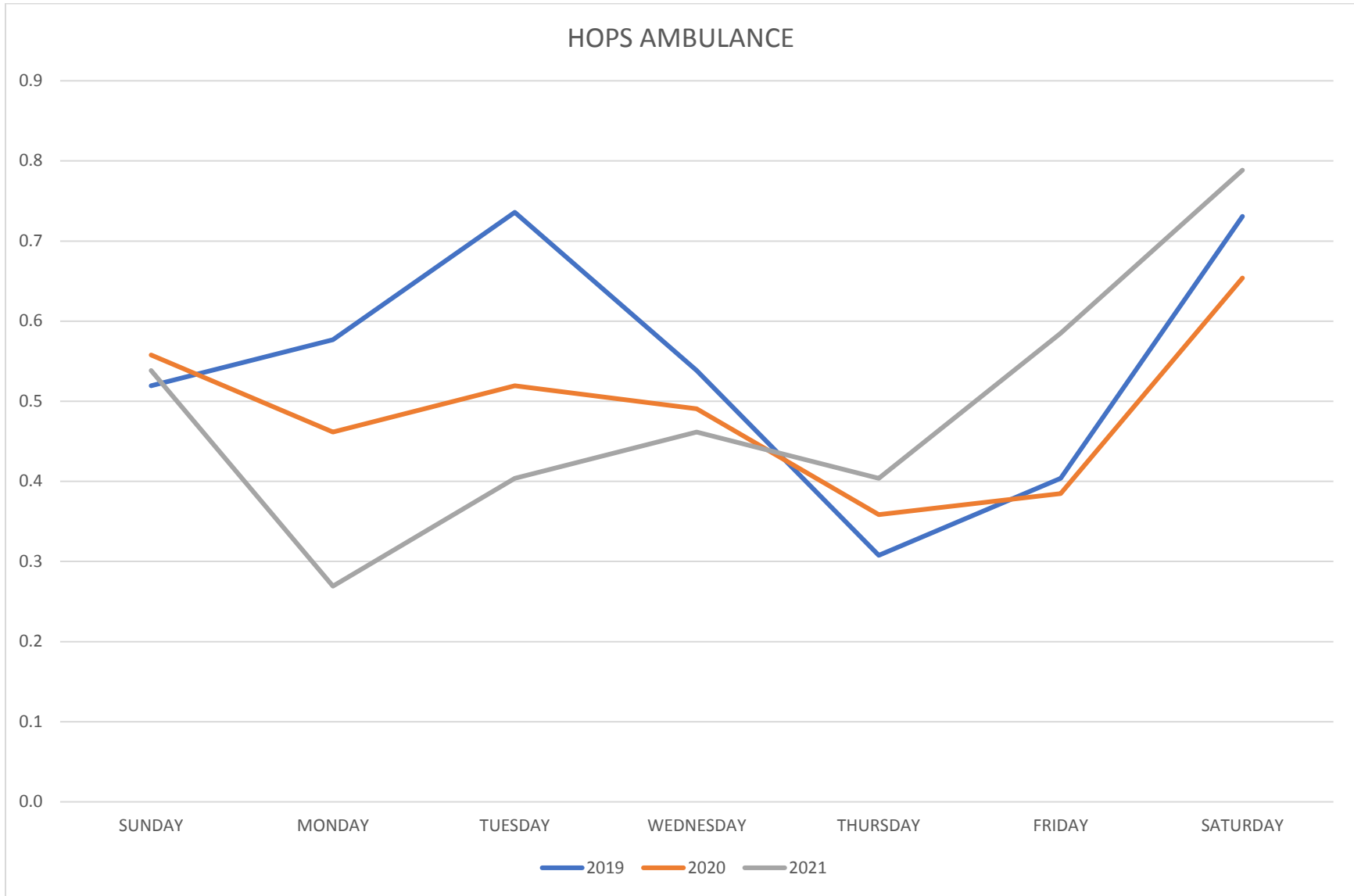


Figure 17: Average Number of Calls per Day by Day of Week and Reporting Period – Little Meadows

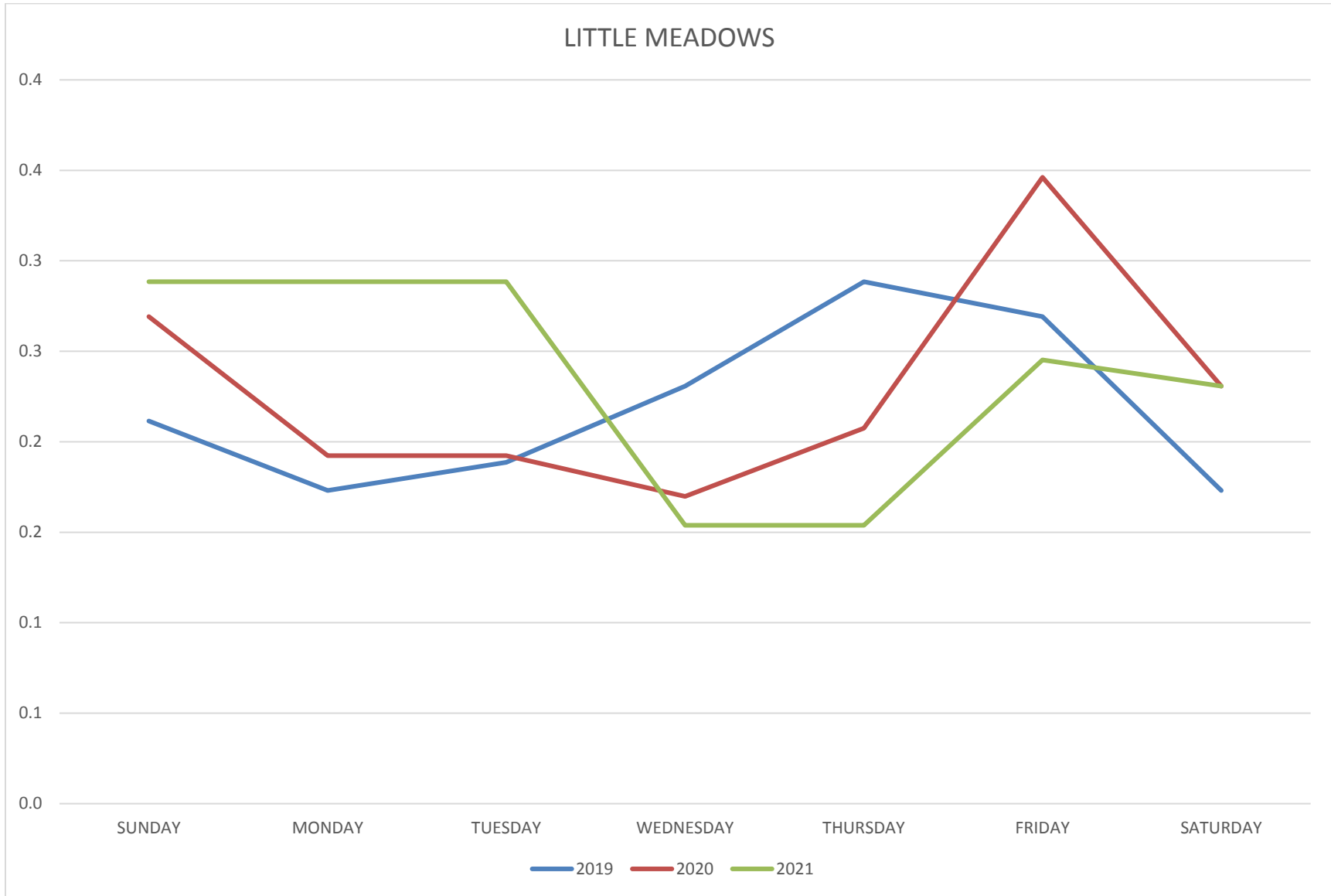


Figure 18: Average Number of Calls per Day by Day of Week and Reporting Period – Memorial EMS

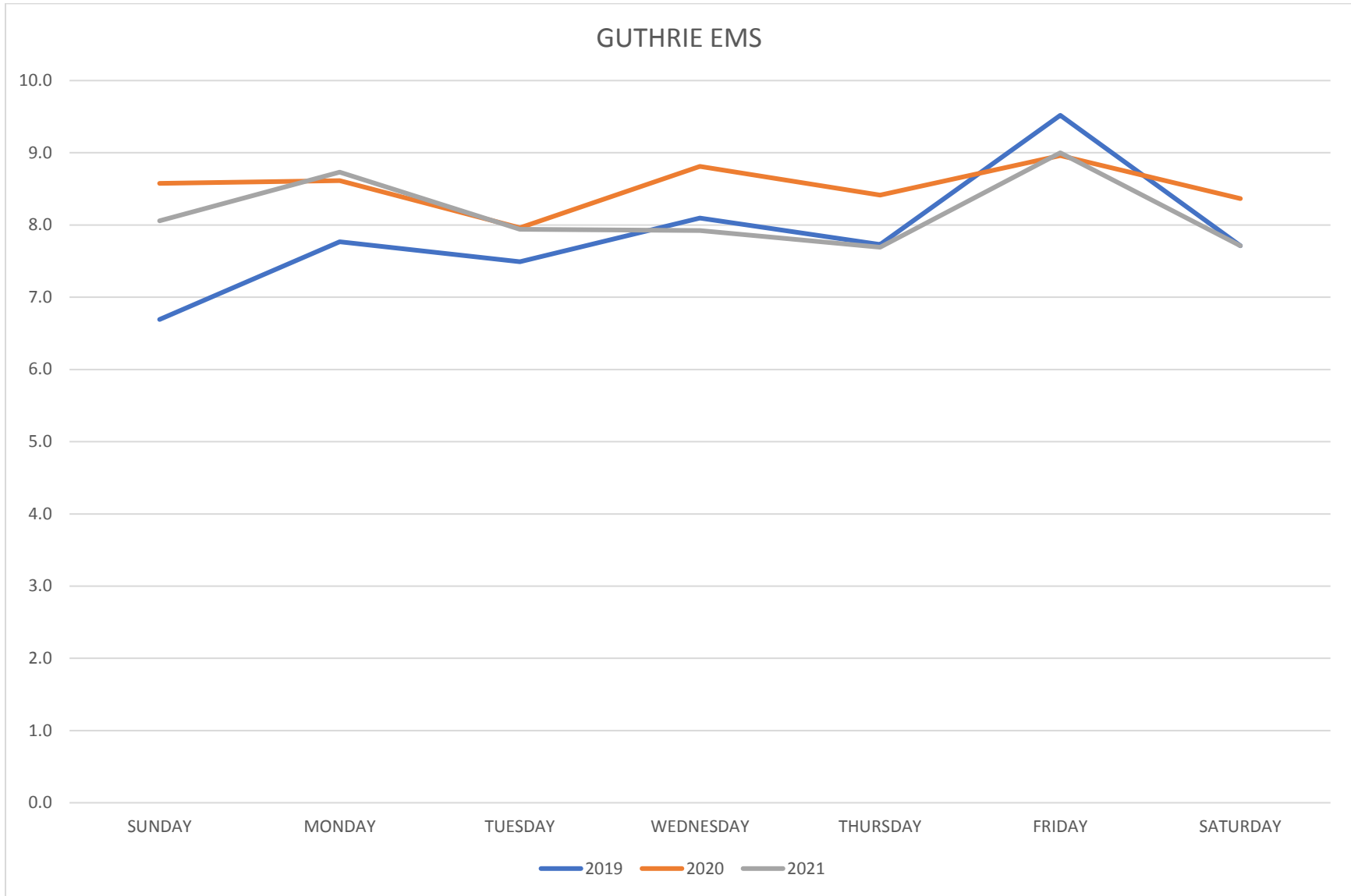


Figure 19: Average Number of Calls per Day by Day of Week and Reporting Period –

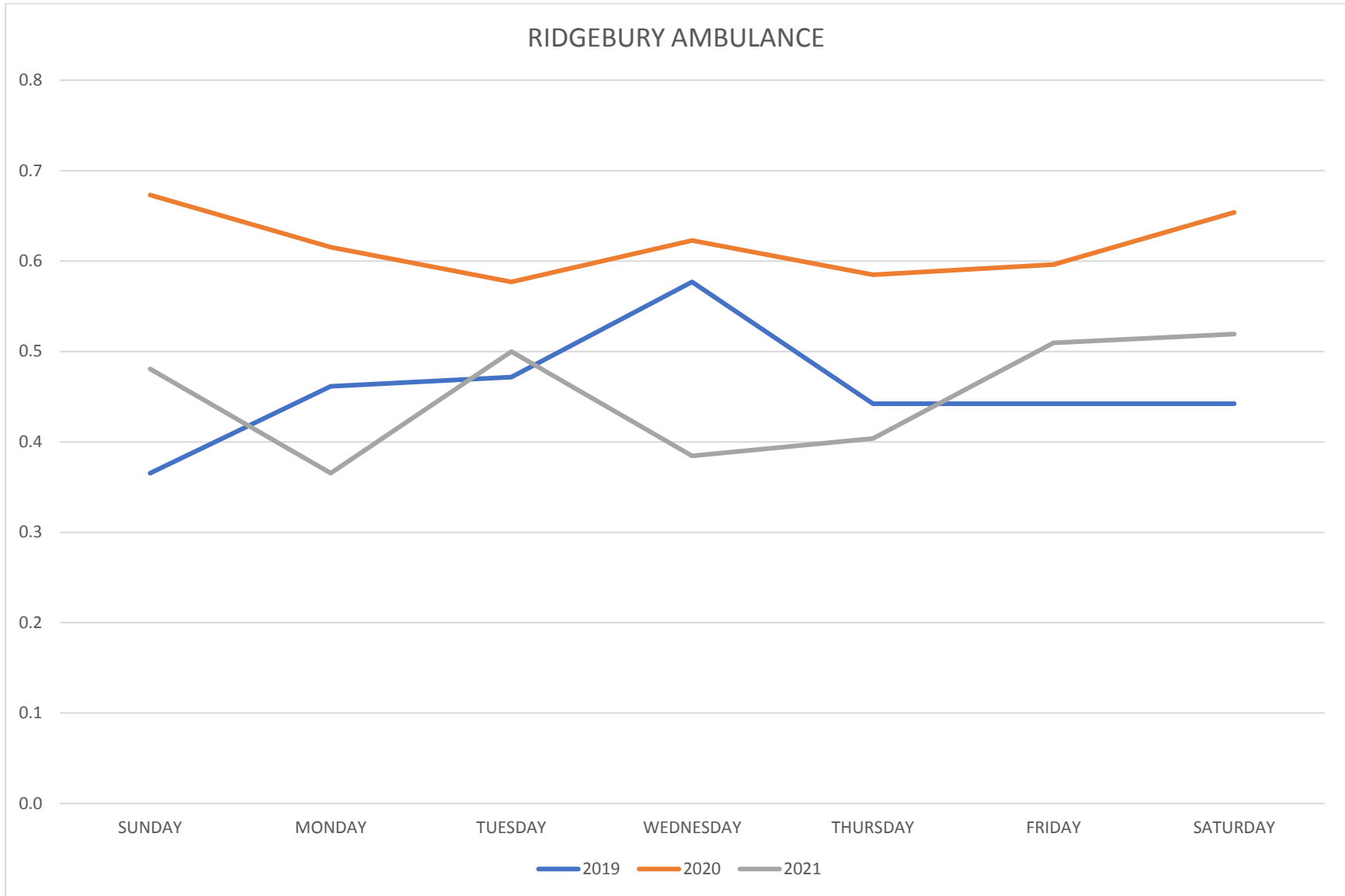
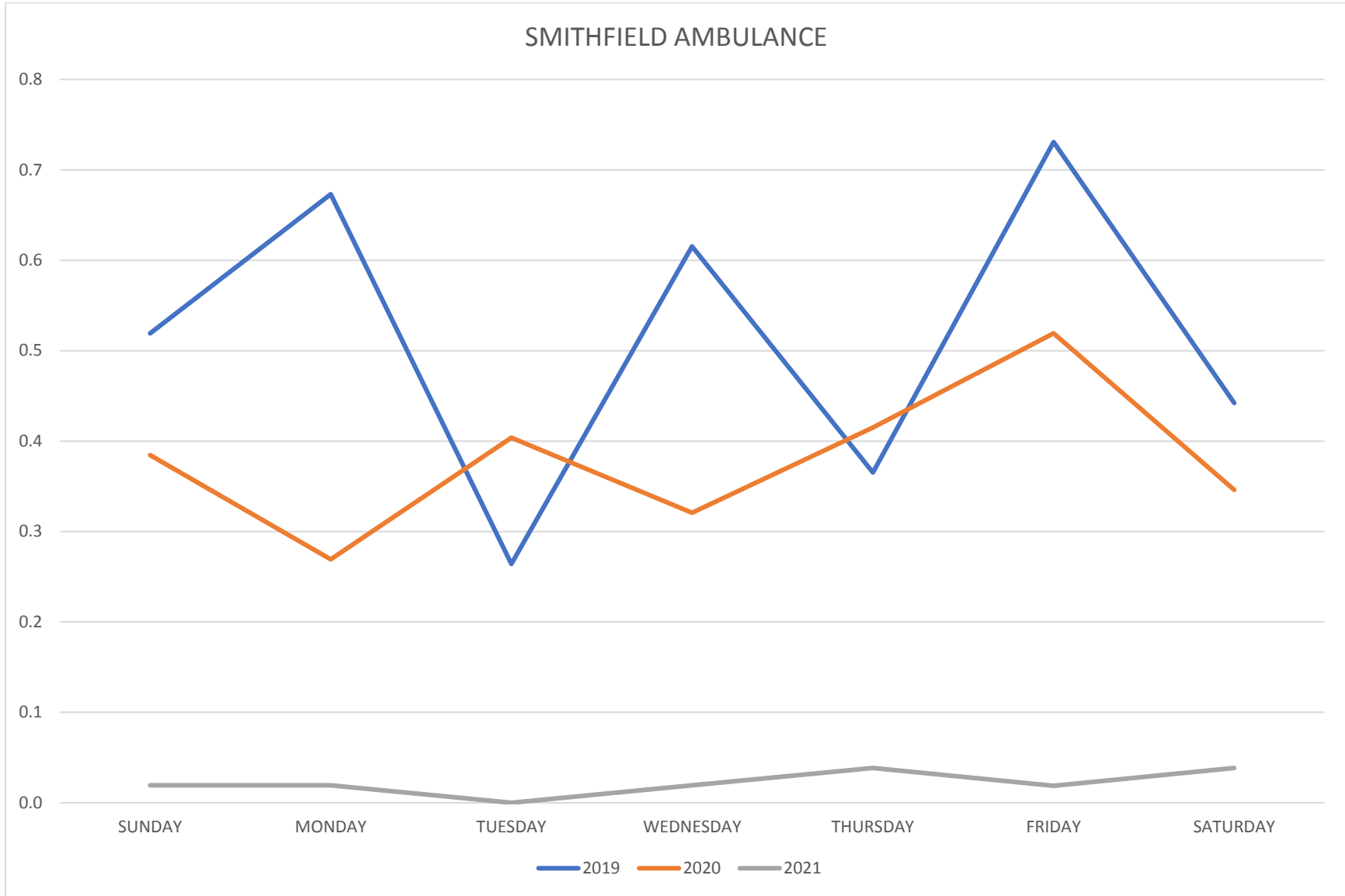


Figure 20: Average Number of Calls per Day by Day of Week and Reporting Period – Smithfield Ambulance





**Figure 21: Average Number of Calls per Day by Day of Week and Reporting Period – South Creek Ambulance**

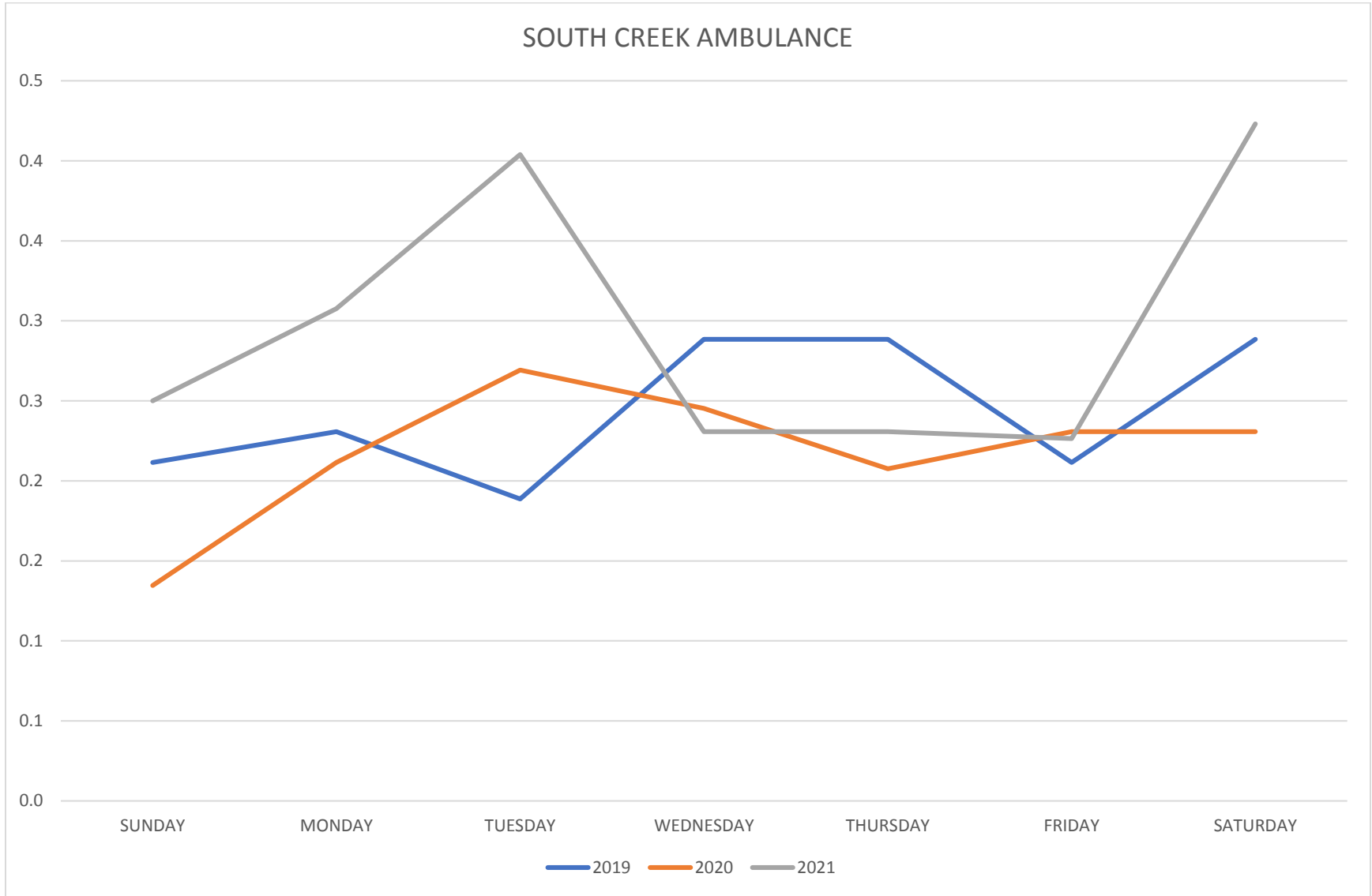


Figure 22: Average Number of Calls per Day by Day of Week and Reporting Period – Ulster Ambulance

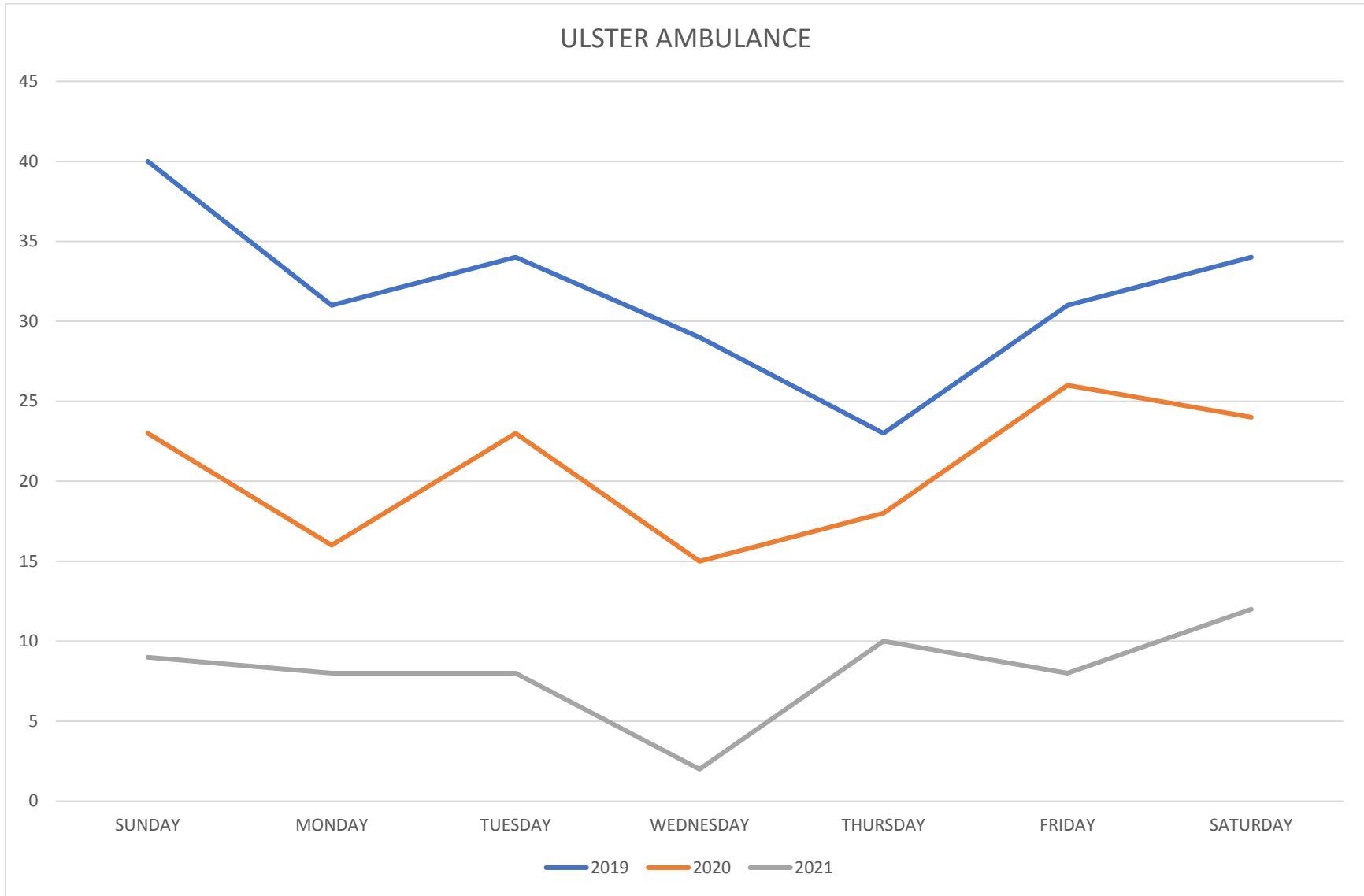
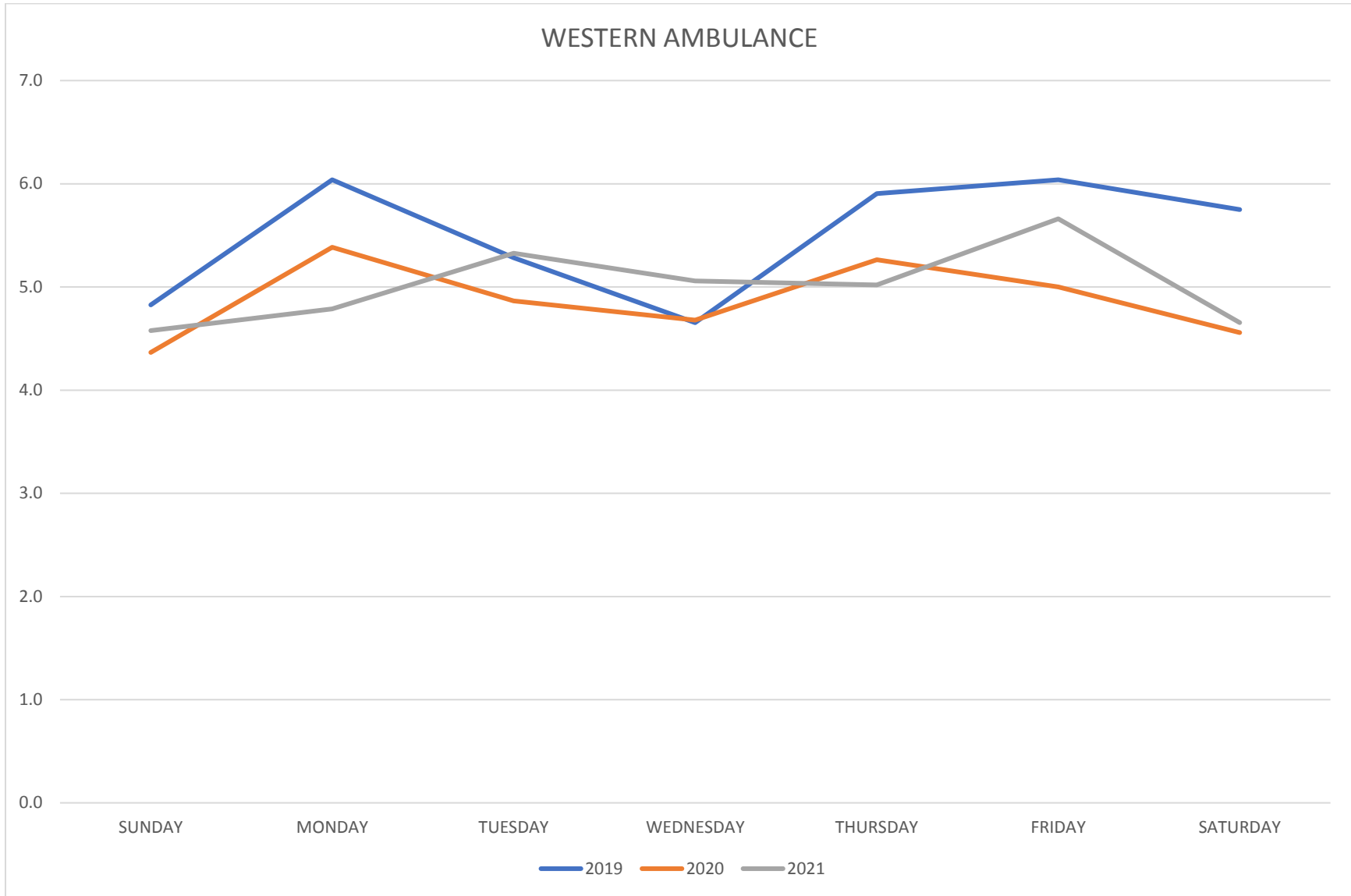


Figure 23: Average Number of Calls per Day by Day of Week and Reporting Period – Western Ambulance



**Table 5: Number of Calls and Average Number of Calls per Day by Agency, Reporting Period, and Hour of Day**

<sup>1</sup>Reporting periods reflect calendar years spanning January 1 to December 31 of each respective reporting period. Years were derived from the “Incident Date” values. Hours of day were derived from the “Call Received Time” values due to the large volume of Chatham records for 2016 indicating an incident time of 12:00 AM. If a record was missing a value for this variable, the time was derived from the “Incident Date” value instead.

<sup>2</sup>There were 366 of each hour during 2016 and 2020, and 365 of each hour during all other reporting periods.

Agency	Metric	Reporting Period	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
BRADFORD COUNTY	Number of Calls	2019	261	216	207	199	219	268	314	427	551	589	631	622	661	551	567	601	551	630	618	489	487	431	402	285
		2020	274	257	190	218	208	231	314	397	524	574	676	612	611	628	630	618	565	551	544	511	476	437	363	322
		2021	208	268	185	164	183	189	269	444	542	572	619	624	582	568	587	567	591	616	608	483	453	349	302	268
	Average Number of Calls per Hour	2019	0.72	0.59	0.57	0.55	0.60	0.73	0.86	1.17	1.51	1.61	1.73	1.70	1.81	1.51	1.55	1.65	1.51	1.73	1.69	1.34	1.33	1.18	1.10	0.78
		2020	0.75	0.70	0.52	0.60	0.57	0.63	0.86	1.08	1.43	1.57	1.85	1.67	1.72	1.72	1.69	1.54	1.51	1.49	1.40	1.30	1.19	0.99	0.88	
		2021	0.57	0.73	0.51	0.45	0.50	0.52	0.74	1.22	1.48	1.57	1.70	1.71	1.59	1.56	1.61	1.55	1.62	1.69	1.67	1.32	1.24	0.96	0.83	0.73
DUSHORE FIRE/EMS	Number of Calls	2019	1	1	1	2	3	8	4	7	7	5	6	3	8	10	7	10	4	4	2	6	4	5	3	4
		2020	2		1	4	2	2	2	10	3	5	7	5	10	6	8	8	4	4	3	9	5	4	2	2
		2021	1	4	1	3	3	1	3	2	8	8	9	5	8	7	15	11	8	8	10	5	8	11	1	5
	Average Number of Calls per Hour	2019	0.00	0.00	0.00	0.01	0.01	0.02	0.01	0.02	0.01	0.02	0.01	0.02	0.01	0.02	0.03	0.02	0.03	0.01	0.01	0.01	0.02	0.01	0.01	0.01
		2020	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.03	0.01	0.01	0.02	0.01	0.03	0.02	0.02	0.02	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01
		2021	0.00	0.01	0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.02	0.02	0.01	0.02	0.02	0.04	0.03	0.02	0.02	0.03	0.01	0.02	0.03	0.00	0.01
GREATER VALLEY EMS	Number of Calls	2019	126	98	95	97	109	115	134	194	252	268	308	267	289	241	245	265	242	288	265	222	223	188	188	123
		2020	140	124	100	99	108	120	132	160	224	278	310	278	277	277	262	271	238	236	224	238	220	195	173	180
		2021	102	135	93	78	84	83	114	235	264	248	295	264	267	275	249	251	250	267	250	226	212	161	153	130
	Average Number of Calls per Hour	2019	0.35	0.27	0.26	0.27	0.30	0.32	0.37	0.53	0.69	0.73	0.84	0.73	0.79	0.66	0.67	0.73	0.66	0.79	0.73	0.61	0.61	0.52	0.52	0.34
		2020	0.38	0.34	0.27	0.27	0.30	0.33	0.36	0.44	0.61	0.76	0.85	0.76	0.76	0.76	0.72	0.74	0.65	0.64	0.61	0.65	0.60	0.53	0.47	0.49
		2021	0.28	0.37	0.25	0.21	0.23	0.23	0.31	0.64	0.72	0.68	0.81	0.72	0.73	0.75	0.68	0.69	0.68	0.73	0.68	0.62	0.58	0.44	0.42	0.36
HOPS AMBULANCE	Number of Calls	2019	3	1		3	2	3	8	7	6	17	12	13	13	17	13	13	9	9	12	10	9	11	6	2
		2020	4	5	2	1	1		4	8	11	12	15	5	9	11	15	17	7	11	10	8	10	6	5	2
		2021	8	5	3	4	2	4	1	10	11	4	8	7	7	10	8	10	11	10	11	12	12	12	6	4
	Average Number of Calls per Hour	2019	0.01	0.00	0.00	0.01	0.01	0.01	0.02	0.02	0.02	0.05	0.03	0.04	0.04	0.05	0.04	0.04	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.01
		2020	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.01	0.01	0.02	0.01	0.02	0.02	0.01	0.01	0.01	0.02	0.01	0.03	0.00
		2021	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.03	0.03	0.01	0.02	0.02	0.02	0.03	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02
LITTLE MEADOWS	Number of Calls	2019	3	2			1	1	1	4	6	4	4	10	10	4	2	1	3	5	2	5	4	6	1	1
		2020	3	3	1	1	2		3	1	3	1	4	2	6	3	7	6	3	4	4	7	5	11	1	3
		2021	2	2	2	1	3		3	2	4	2	7	10	3	4	7	5	3	1	5	7	7	6		
	Average Number of Calls per Hour	2019	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.02	0.01	0.01	0.03	0.03	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.00	0.00
		2020	0.01	0.01	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.01	0.01	0.02	0.01	0.02	0.02	0.01	0.01	0.01	0.02	0.01	0.03	0.00
		2021	0.01	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.02	0.03	0.01	0.01	0.02	0.01	0.01	0.00	0.01	0.02	0.02	0.02	0.00	0.00
MEMORIAL EMS	Number of Calls	2019	70	58	57	50	66	72	84	109	148	143	169	181	181	145	148	174	157	158	169	131	112	113	97	76
		2020	73	77	57	67	56	66	92	118	151	135	204	178	179	189	183	185	164	170	183	144	135	129	105	82
		2021	60	75	47	44	54	69	90	111	147	159	157	190	168	161	180	172	186	200	193	129	116	99	91	78
	Average Number of Calls per Hour	2019	0.19	0.16	0.16	0.14	0.18	0.20	0.23	0.30	0.41	0.39	0.46	0.50	0.50	0.40	0.41	0.48	0.43	0.43	0.46	0.36	0.31	0.31	0.27	0.21
		2020	0.20	0.21	0.16	0.18	0.15	0.18	0.25	0.32	0.41	0.37	0.56	0.49	0.49	0.52	0.50	0.51	0.45	0.46	0.50	0.39	0.37	0.35	0.29	0.22
		2021	0.16	0.21	0.13	0.12	0.15	0.19	0.25	0.30	0.40	0.44	0.43	0.52	0.46	0.44	0.49	0.47	0.51	0.55	0.53	0.35	0.32	0.27	0.25	0.21

Agency	Metric	Reporting Period	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
RIDGEBURY AMBULANCE	Number of Calls	2019	3	6	2	3		6	9	7	11	14	7	12	10	9	11	11	6	6	7	6	7	4	7	3	
		2020	7	5	5	4	4	1	3	14	13	17	11	20	9	11	13	19	9	7	13	10	11	8	6	6	
		2021	1	3	2	2	1	2	3	6	7	7	11	8	11	11	11	7	11	10	13	9	12	6	6	5	
	Average Number of Calls per Hour	2019	0.01	0.02	0.01	0.01	0.00	0.02	0.02	0.02	0.02	0.03	0.04	0.02	0.03	0.03	0.02	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.01
		2020	0.02	0.01	0.01	0.01	0.01	0.00	0.01	0.04	0.04	0.05	0.03	0.05	0.02	0.03	0.04	0.05	0.02	0.02	0.04	0.03	0.03	0.02	0.02	0.02	
		2021	0.00	0.01	0.01	0.01	0.00	0.01	0.01	0.02	0.02	0.02	0.03	0.02	0.03	0.03	0.03	0.02	0.03	0.03	0.04	0.02	0.03	0.02	0.02	0.02	0.01
SMITHFIELD AMBULANCE	Number of Calls	2019	3	3	3			2	4	10	7	6	13	16	12	13	15	9	9	8	8	8	16	7	9	7	
		2020	5	4		4	5	1	6	5	6	11	11	8	7	8	14	4	9	8	6	4	2	5	2	4	
		2021			1				1			1		1		1	1					2					
	Average Number of Calls per Hour	2019	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.03	0.02	0.02	0.04	0.04	0.03	0.04	0.04	0.02	0.02	0.02	0.02	0.02	0.04	0.02	0.02	0.02	
		2020	0.01	0.01	0.00	0.01	0.01	0.00	0.02	0.01	0.02	0.03	0.03	0.02	0.02	0.02	0.04	0.01	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	
		2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	
SOUTH CREEK AMBULANCE	Number of Calls	2019	1	2	2	1		2	2	2	1	4	5	7	2	1	5	8	9	7	7	6	3	6	3	3	
		2020		1	1	1	2	1	5		5	6	3	1	5	2	6	4	6	6	5	6	3	5	4	2	
		2021	2	4	2	1			1	3	6	8	7	7	3	4	7	8	4	6	8	4	10	3	6	4	
	Average Number of Calls per Hour	2019	0.00	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.02	0.01	0.00	0.01	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.01	
		2020	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.02	0.01	0.00	0.01	0.01	0.01	0.02	0.01	0.02	0.02	0.01	0.02	0.01	0.01	0.01	
		2021	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.02	0.01	0.02	0.02	0.01	0.03	0.01	0.02	
ULSTER AMBULANCE	Number of Calls	2019	1	8	5	4	5	8	6	6	4	6	12	8	15	14	13	15	11	15	15	10	13	10	9	9	
		2020	3	2		3		2	10	7	8	8	9	7	6	7	8	4	7	10	10	9	6	12	4	3	
		2021							2	1	2	3	1	4	2	2	5	6	8	8	5	3	3	3	2		
	Average Number of Calls per Hour	2019	0.00	0.02	0.01	0.01	0.01	0.02	0.02	0.02	0.01	0.02	0.03	0.02	0.04	0.04	0.04	0.04	0.03	0.04	0.04	0.03	0.04	0.03	0.04	0.03	
		2020	0.01	0.01	0.00	0.01	0.00	0.01	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.03	0.03	0.02	0.02	0.03	0.01	0.01	
		2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.00	
WESTERN AMBULANCE	Number of Calls	2019	50	37	42	39	33	51	62	81	109	122	95	105	121	97	108	95	101	130	131	85	96	81	79	57	
		2020	37	36	23	34	28	38	57	74	100	101	102	108	103	114	114	114	100	118	95	86	76	79	62	61	38
		2021	32	40	34	31	36	30	53	73	94	133	122	131	111	93	107	98	112	106	108	86	73	48	37	42	
	Average Number of Calls per Hour	2019	0.14	0.10	0.12	0.11	0.09	0.14	0.17	0.22	0.30	0.33	0.26	0.29	0.33	0.27	0.30	0.26	0.28	0.36	0.36	0.23	0.26	0.22	0.22	0.16	
		2020	0.10	0.10	0.06	0.09	0.08	0.10	0.16	0.20	0.27	0.28	0.28	0.30	0.28	0.31	0.31	0.27	0.32	0.26	0.23	0.21	0.22	0.17	0.17	0.10	
		2021	0.09	0.11	0.09	0.08	0.10	0.08	0.15	0.20	0.26	0.36	0.33	0.36	0.30	0.25	0.29	0.27	0.31	0.29	0.30	0.24	0.20	0.13	0.10	0.12	

**Figure 24 Average Number of Calls per Day by Hour of Day and Reporting Period –Bradford County**

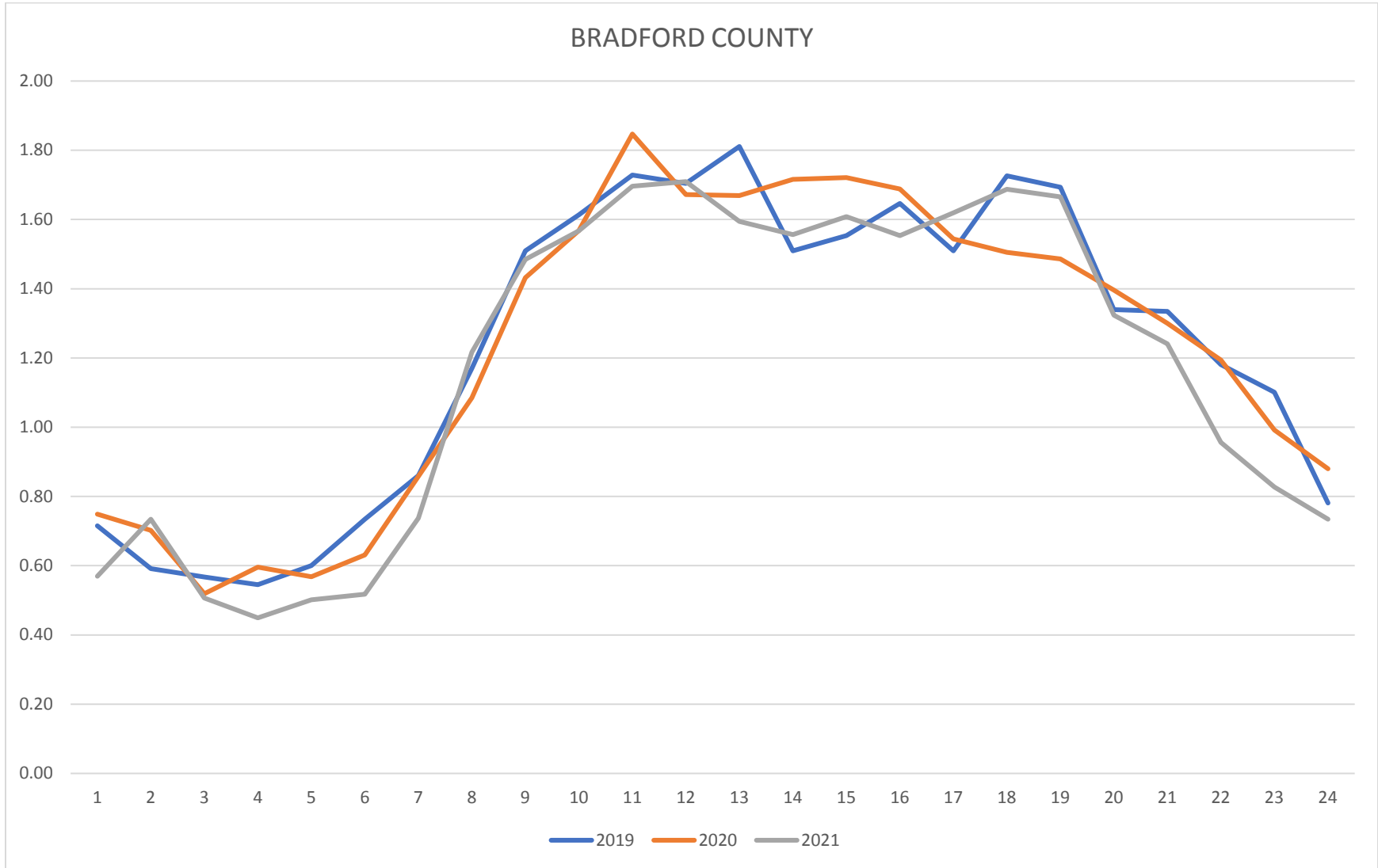


Figure 25: Average Number of Calls per Day by Hour of Day and Reporting Period – Dushore Fire / EMS

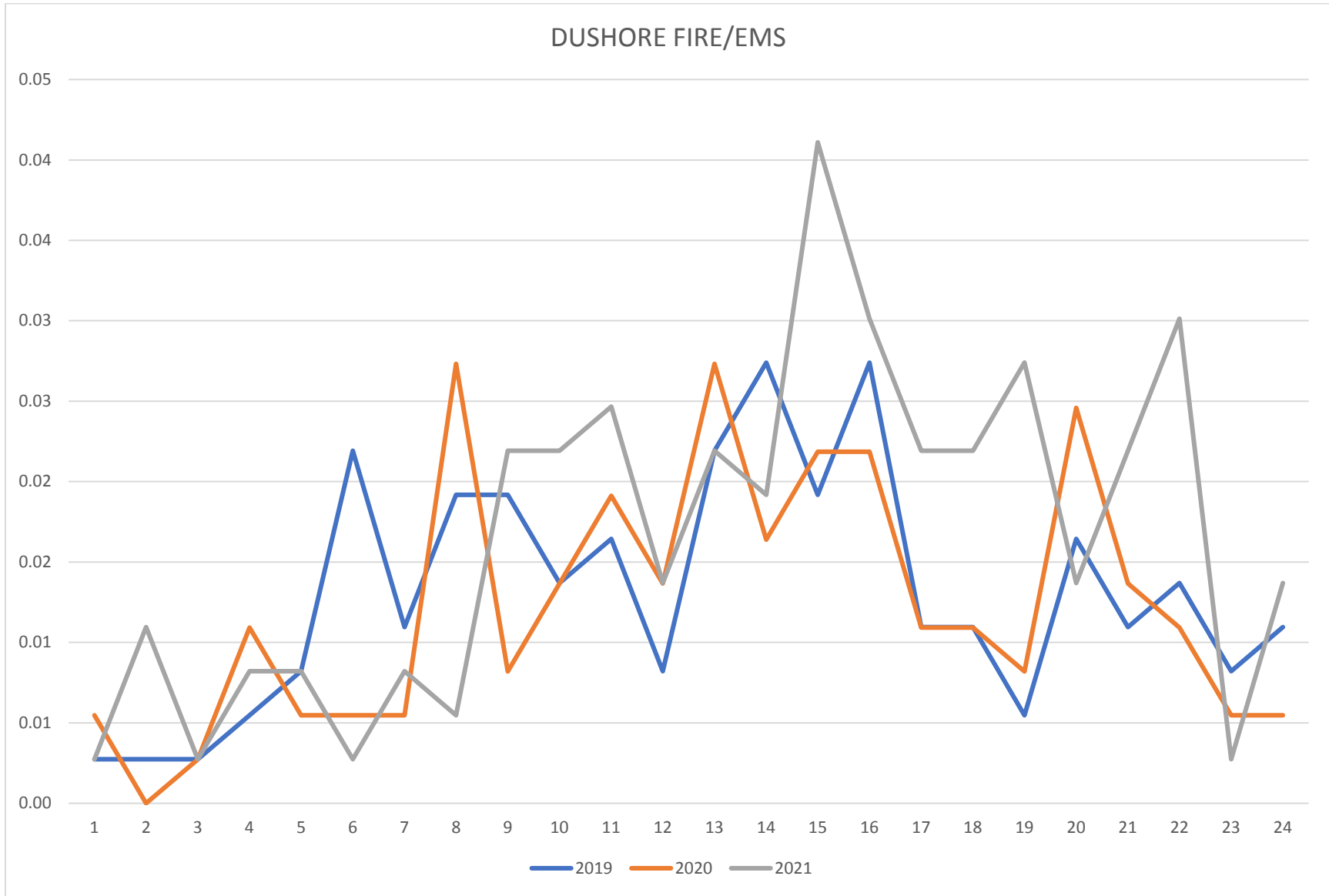


Figure 26: Average Number of Calls per Day by Hour of Day and Reporting Period – Greater Valley EMS

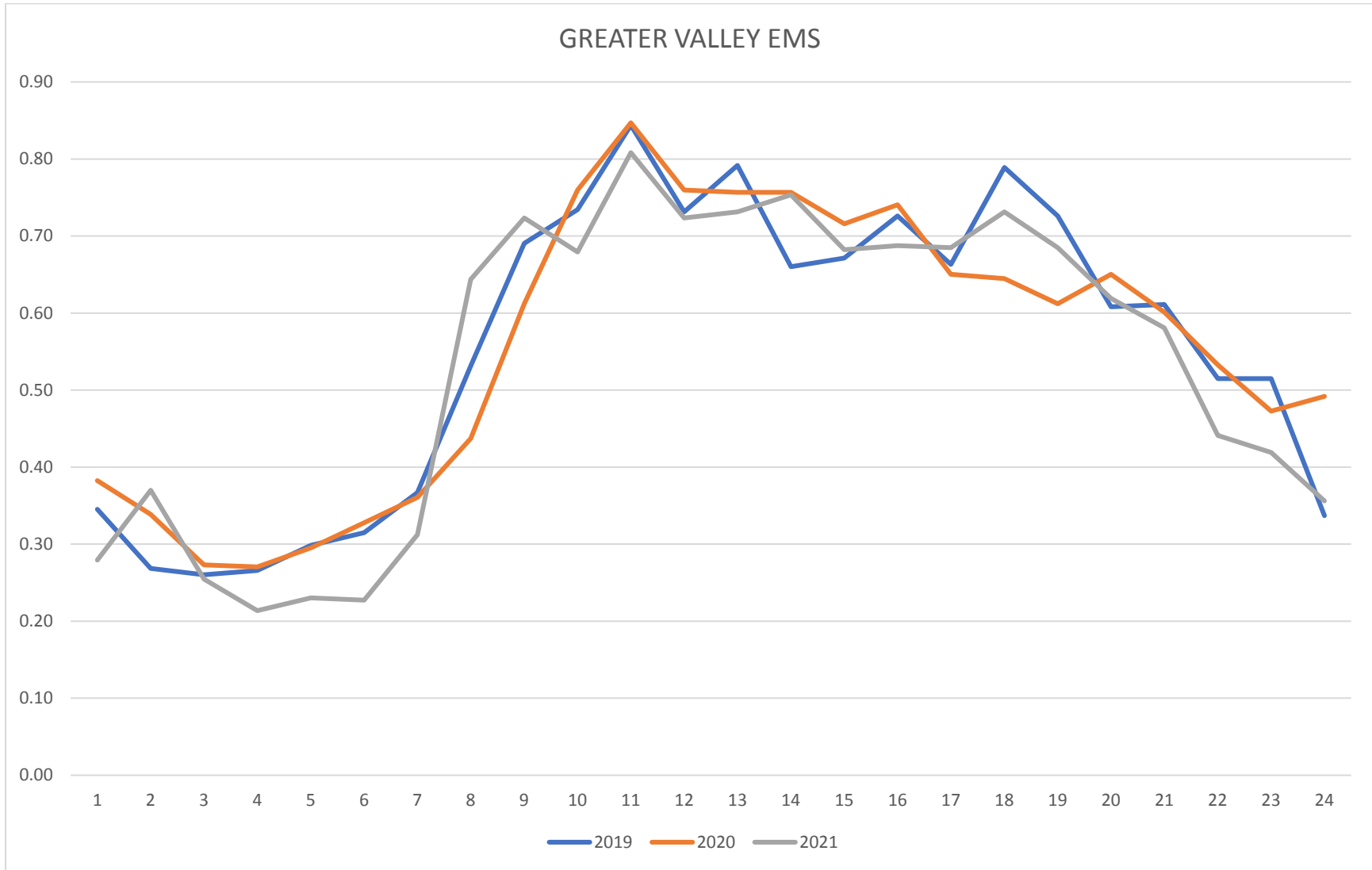




Figure 27: Average Number of Calls per Day by Hour of Day and Reporting Period – Hops Ambulance

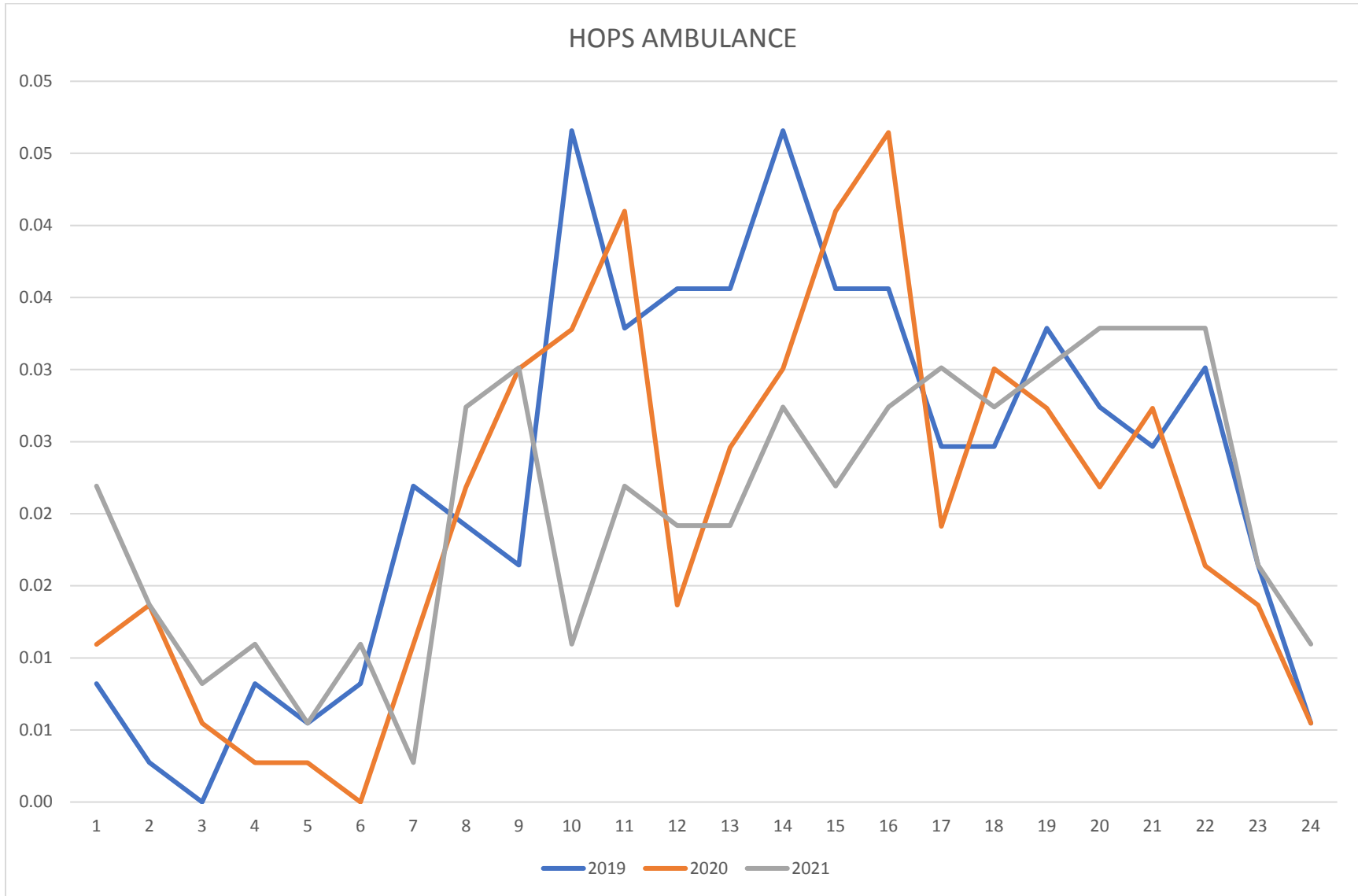
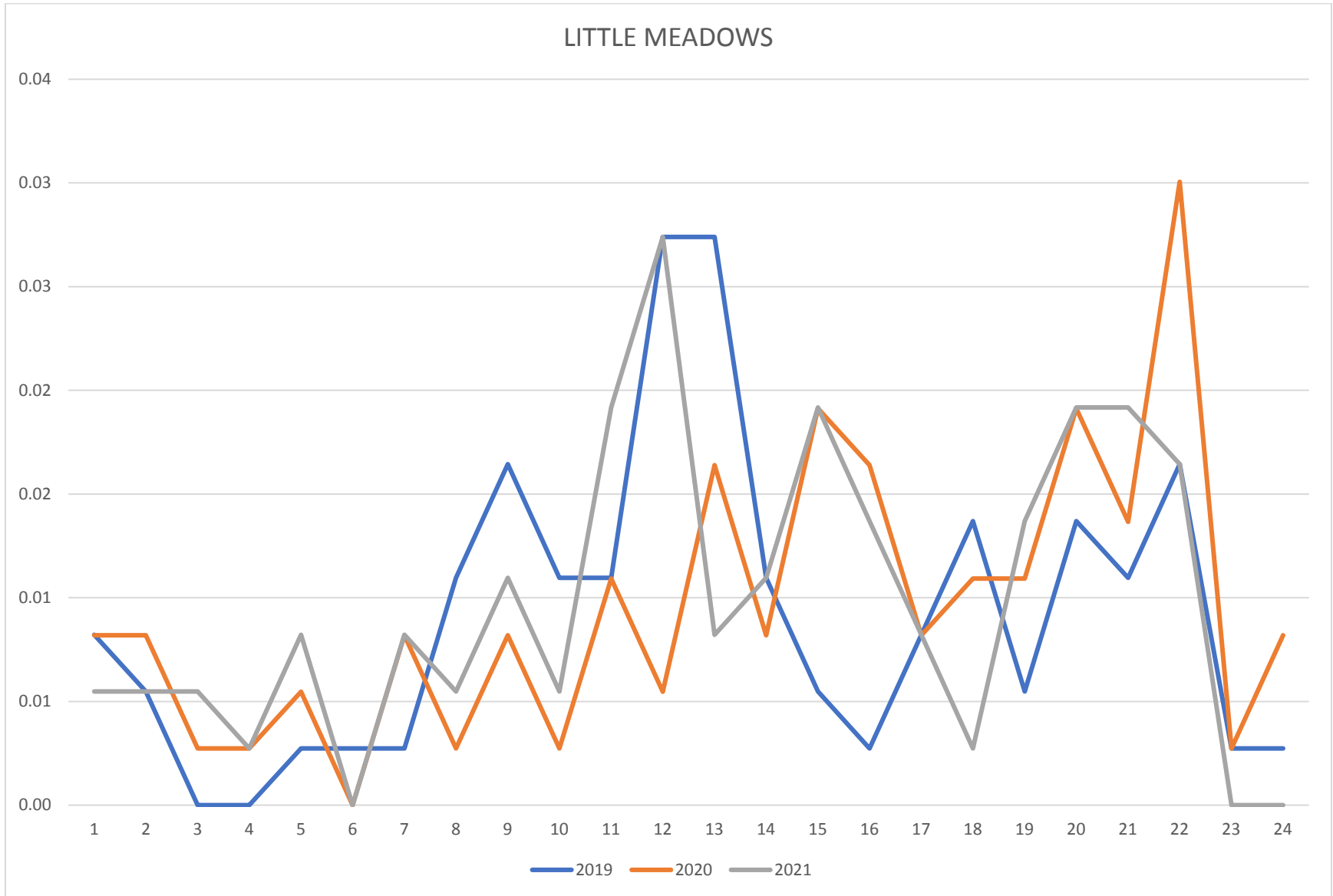
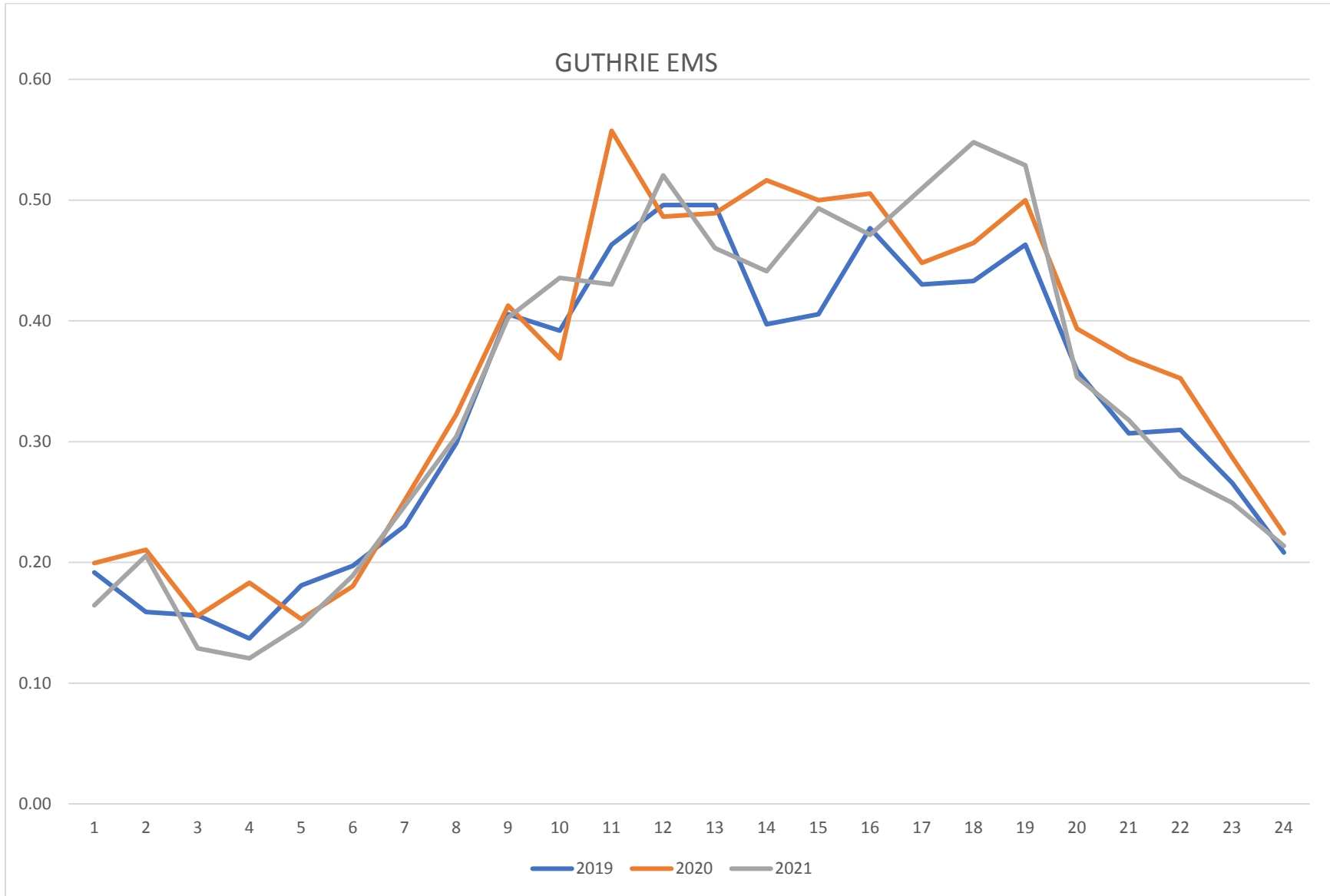


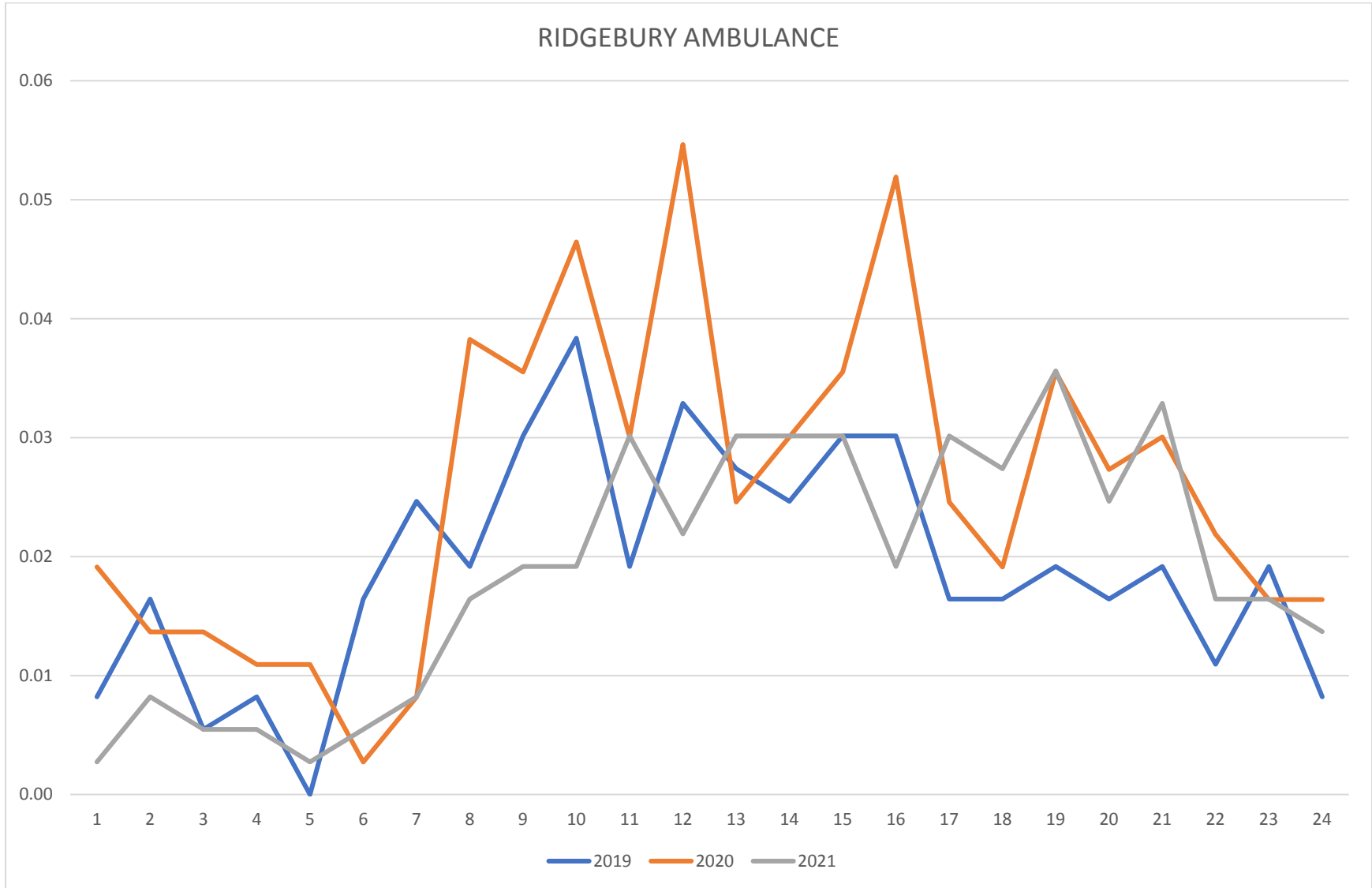
Figure 28: Average Number of Calls per Day by Hour of Day and Reporting Period – Little Meadows



**Figure 29: Average Number of Calls per Day by Hour of Day and Reporting Period – Memorial EMS**



**Figure 30: Average Number of Calls per Day by Hour of Day and Reporting Period – Ridgebury Ambulance**



**Figure 31: Average Number of Calls per Day by Hour of Day and Reporting Period – Smithfield Ambulance**

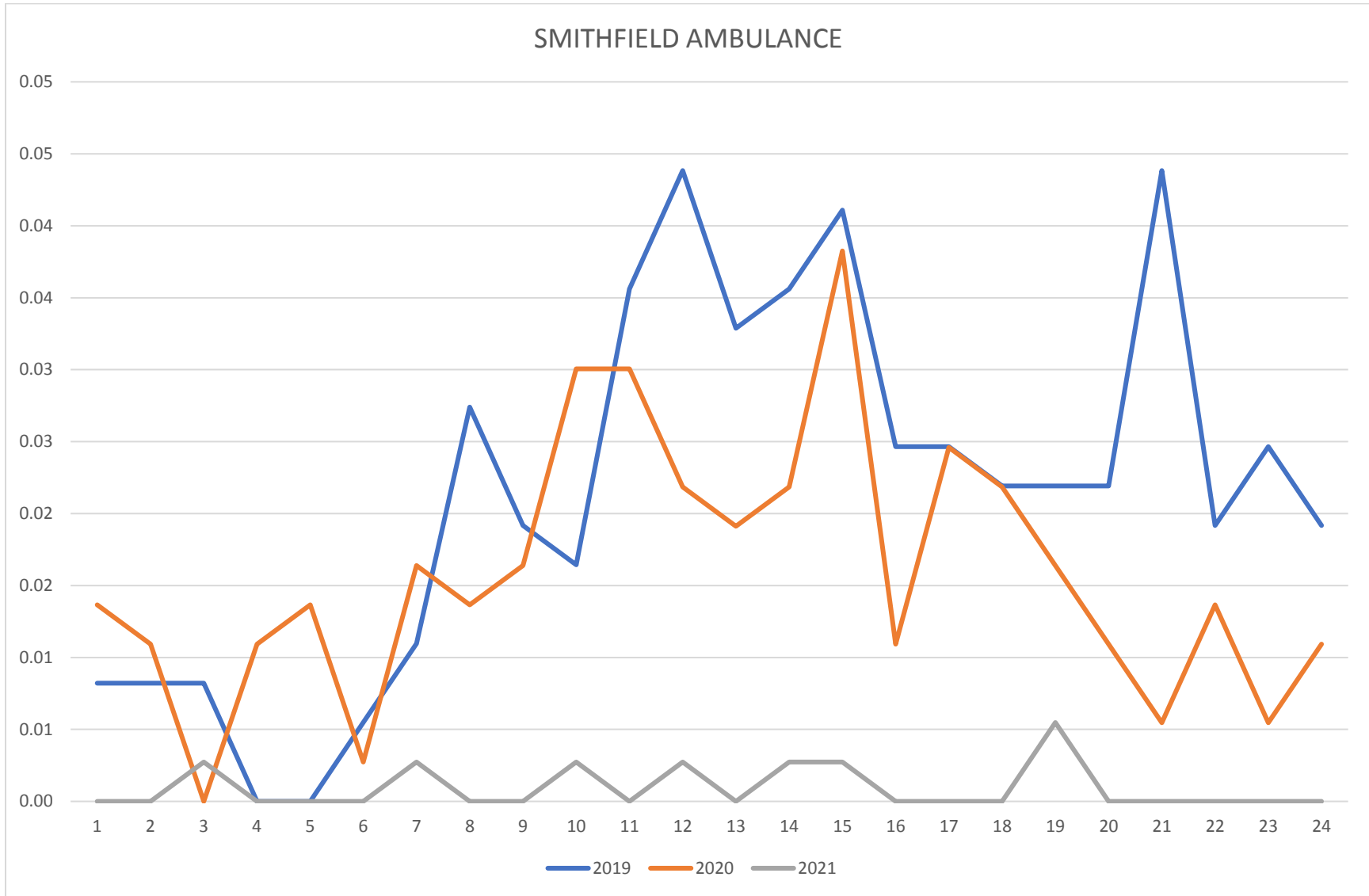
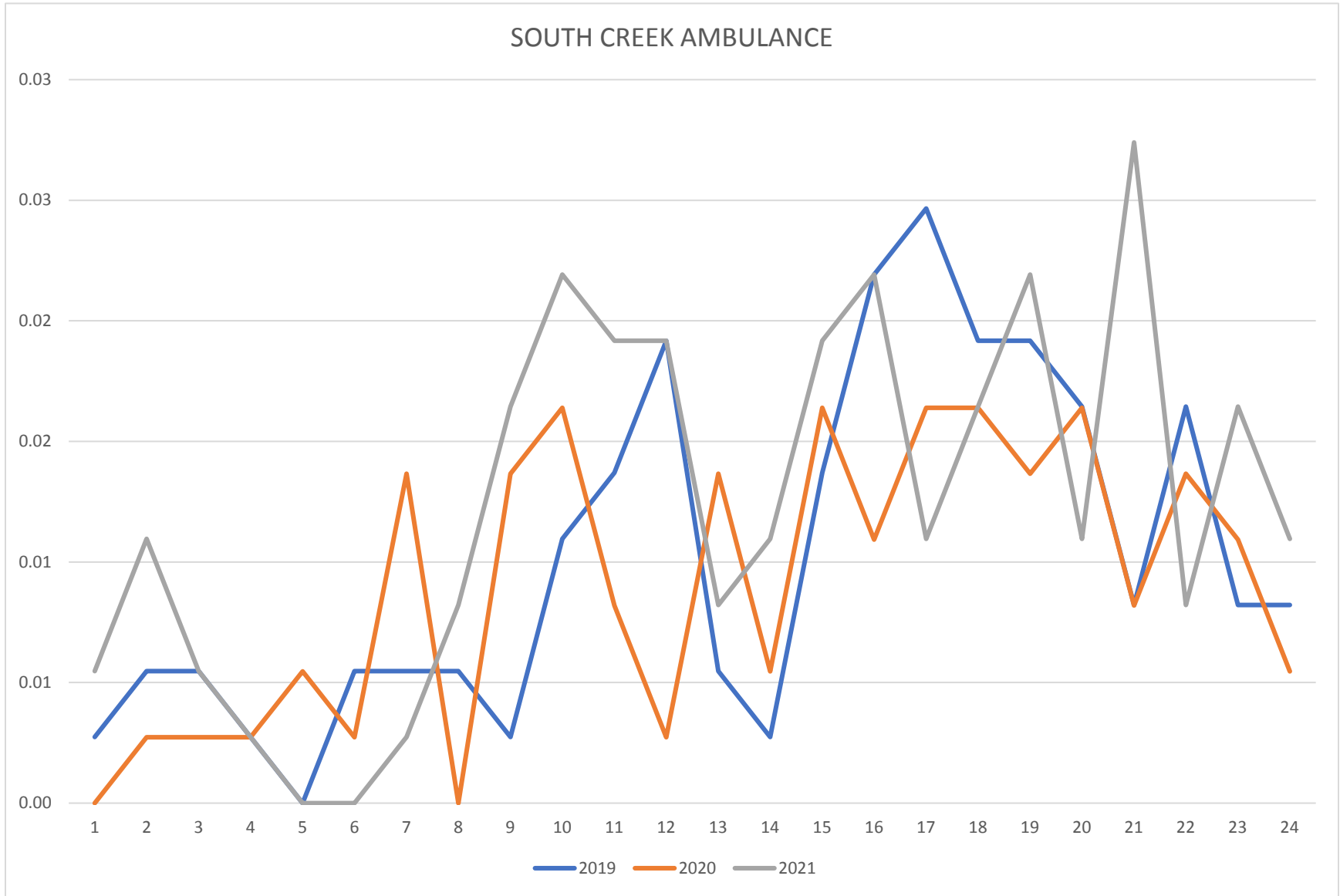


Figure 32: Average Number of Calls per Day by Hour of Day and Reporting Period – South Creek Ambulance



**Figure 33: Average Number of Calls per Day by Hour of Day and Reporting Period – Ulster Ambulance**

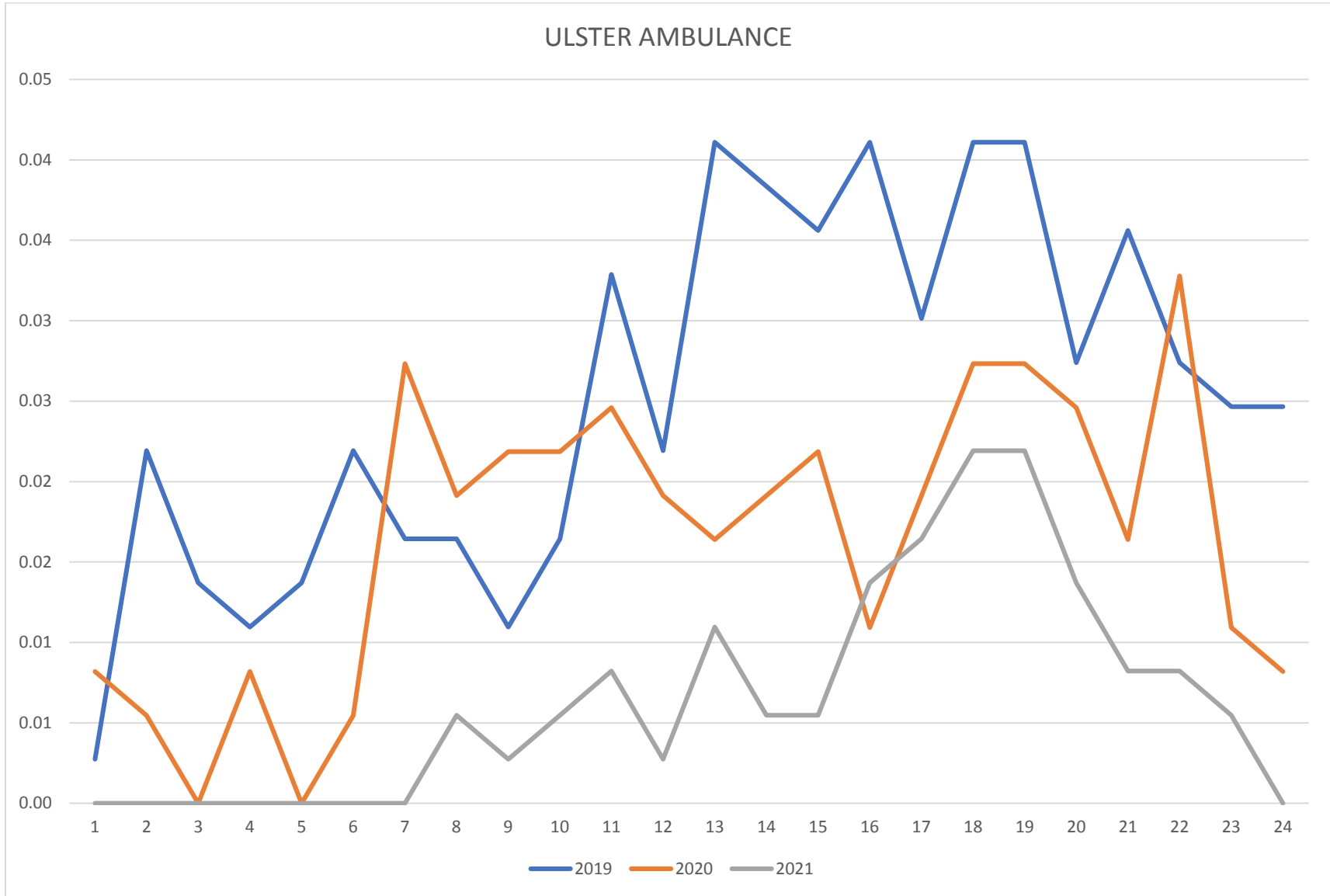
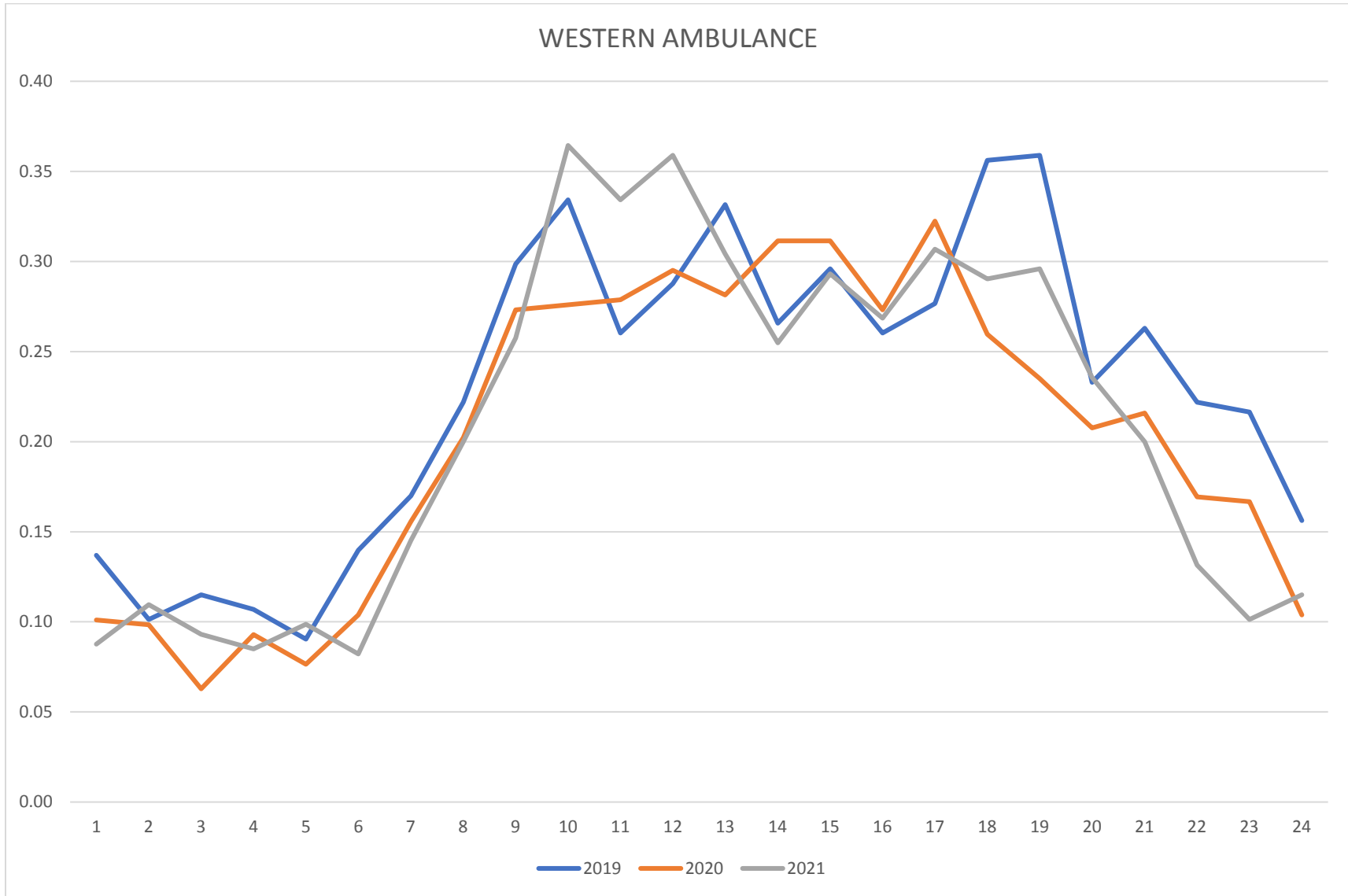


Figure 34: Average Number of Calls per Day by Hour of Day and Reporting Period – Western Ambulance





# County-wide Funding Formulas

**Funding Formulas**

## **COUNTY-WIDE FUNDING PLAN**

Establishing a County-wide funding plan that each of the EMS agencies can utilize to seek the necessary funding to keep their entities financially viable and sustainable. *FITCH* is presenting options for the County to consider as if funding was able to be secured and there were checks and balances with both funding and performance, then staffing and operations would be the driving force for an agency’s survivability. These may not be the only options to consider however, these are options *FITCH* believes may be worth considering after working with the local EMS leaders.

Examples of funding formulas include:

The County or local municipality agrees to assist the agency financially according to the percentage of answered calls. The agency agrees to provide a fully licensed and appropriately staffed EMS unit to respond to emergency calls for service to include countywide mutual aid. The agency agrees to respond to 85% of their dispatched calls within the agreed upon time frame to receive 100% of the requested subsidy. If the agency does not meet the 85% expectation the amount to be paid will be determined as follows: The number of calls the agency responded to in their primary district will be divided by the total number of calls dispatched to that month. This will determine the percentage of class the agency responded to for the month. The approved budgetary amount will be divided by 12 to get a monthly rate and that number will be multiplied by the percentage of calls the agency responds to for the month. The county should ensure that the agencies receiving this type of subsidy annually provide financial statements to the county for transparency of use related taxpayer funds.

The total amount of funding needed divided by the number of municipalities seeking subsidy from and then apply the percentage from the total volume of calls against the municipality

Town A	500	50%	\$210,000.00
Town B	200	20%	\$84,000.00
Town C	250	25%	\$105,000.00
Town D	50	5%	\$21,000.00
<b>Total calls</b>	<b>1000</b>	<b>100%</b>	<b>\$420,000.00</b>
<b>Subsidy needed</b>			<b>\$420,000.00</b>

- Determine the amount of municipal funding needed.
  - Collect information from 3 independent sources:
    - Census Bureau for Population
    - CAD data for total dispatches in the municipality(s)
    - County Assessment Office for Millage

## ATTACHMENT C: Funding Formulas

- The raw data gets entered into each column for each municipality. The formula will calculate the %. Once all is entered, it will average the 3 averages and multiply it by the funding needs and determine the split.

TOWNSHIP	2018 Population Estimate	%	July 1 2020 .1 Mills	% Millage	2020 Dispatches	% Dispatch	Blended %	Blended Rounded %	2022 Funding \$420,000 x Blended %
	1,401	1.8%	\$4,315	1.0%	33	1.49%	<b>1.45%</b>	<b>1.4%</b>	<b>\$5,880.00</b>
	9,062	11.8%	\$43,165	10.2%	170	7.69%	<b>9.89%</b>	<b>9.9%</b>	<b>\$41,580.00</b>
	1,703	2.2%	\$9,514	2.2%	28	1.27%	<b>1.91%</b>	<b>1.9%</b>	<b>\$7,980.00</b>
	4,535	5.9%	\$30,040	7.1%	97	4.39%	<b>5.80%</b>	<b>5.8%</b>	<b>\$24,360.00</b>
	3,245	4.2%	\$23,892	5.6%	62	2.81%	<b>4.22%</b>	<b>4.2%</b>	<b>\$17,640.00</b>
	2,522	3.3%	\$15,234	3.6%	51	2.31%	<b>3.06%</b>	<b>3.1%</b>	<b>\$13,020.00</b>
	8,752	11.4%	\$52,479	12.4%	164	7.42%	<b>10.40%</b>	<b>10.4%</b>	<b>\$43,680.00</b>
	5,077	6.6%	\$20,704	4.9%	104	4.71%	<b>5.40%</b>	<b>5.4%</b>	<b>\$22,680.00</b>
	12,150	15.8%	\$81,920	19.3%	368	16.65%	<b>17.27%</b>	<b>17.3%</b>	<b>\$72,660.00</b>
	5,964	7.8%	\$35,245	8.3%	82	3.71%	<b>6.60%</b>	<b>6.6%</b>	<b>\$27,720.00</b>
	5,572	7.3%	\$18,509	4.4%	278	12.58%	<b>8.07%</b>	<b>8.1%</b>	<b>\$34,020.00</b>
	5,530	7.2%	\$37,877	8.9%	409	18.51%	<b>11.55%</b>	<b>11.5%</b>	<b>\$48,300.00</b>
	2535	3.3%	\$13,674	3.2%	64	2.90%	<b>3.14%</b>	<b>3.0%</b>	<b>\$12,600.00</b>
	2,593	3.4%	\$12,394	2.9%	94	4.25%	<b>3.52%</b>	<b>3.5%</b>	<b>\$14,700.00</b>
	2,847	3.7%	\$9,558	2.3%	71	3.21%	<b>3.06%</b>	<b>3.1%</b>	<b>\$13,020.00</b>
	500	0.7%	\$3,500	0.8%	15	0.68%	<b>0.72%</b>	<b>0.7%</b>	<b>\$2,940.00</b>
	2,703	3.5%	\$12,268	2.9%	120	5.43%	<b>3.95%</b>	<b>3.9%</b>	<b>\$16,380.00</b>
	<b>76,691</b>	<b>100.0%</b>	<b>\$424,288</b>	<b>100%</b>	<b>2210</b>	<b>100.00%</b>	<b>100.0%</b>	<b>99.80%</b>	<b>\$419,160.00</b>
<b>2020 BUDGET NEEDED</b>	420,000								

The actual spreadsheet and formula will be provided separately.

Although there are several options for Bradford County to consider, *FITCH* recommends the immediate implementation of an EMS Coordinator or oversight position to aid in providing strategic and organizational oversight for the provision of all emergency services.



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