How Does Rittman EMS Add Up: Setting Performance Measures To Improve

Quality

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CERTIFICATION STATEMENT

I hereby certify that the following statements are true:

1.   This paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

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ABSTRACT

The problem this study investigated was the lack of a performance baseline for the current emergency medical service operations in the City of Rittman, Ohio. Without this baseline, it would be impossible to gauge future performance. This study was designed to set the baseline for Rittman EMS, and then identify specific benchmarks for performance improvement. The questions posed to facilitate this research were:

1. What is the performance baseline of Rittman EMS?

2. How does Rittman EMS compare to local organizations?

3. Can performance goals be used to fill gaps in efficiency and effectiveness?

To gain an idea of where Rittman EMS stands compared to other organizations, a 25-question survey (Appendix 1) was sent out via mail and/or email to fire and EMS organizations in Wayne County, Ohio and its five bordering counties; choosing to specifically concentrate on the following performance indicators:

- Total population served

- Total square miles served

- Total operating budget

- Method of Funding

- Annual payroll expenses

- Total number of personnel

- EMS response times (from dispatch to arrival)

- Collection rates of EMS billing

- Number of EMS calls

- Number of EMS transports

Data was collected to compare real number and per capita rankings between Rittman EMS and other fire and EMS agencies. Performance was gauged on a local level by mailing out customer satisfaction surveys to all patients transported by the department (Appendix 3) beginning January 1, 2006. These surveys helped discover the public's perception of Rittman EMS. The results of this research yielded Rittman EMS' performance baseline. After the baseline was set, potential gaps in performance were noted, and goals were set to close the gaps.

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INTRODUCTION

Statement of the Problem

The recent economic downturn across America has placed Rittman Emergency Medical Services (Rittman EMS) in a fight for its financial survival. As the size of the community increased, so did the financial burden to maintain public services such as Fire, Police and EMS. As just one of the many city services competing for a small portion of tax money, EMS and public health was often at the end of the line for funding. The goal of Rittman EMS is to provide the community the best possible service for a reasonable cost, and be able to demonstrate their value to the customers—the citizens.

The problem this study investigated was the lack of a performance baseline for emergency medical service operations in the City of Rittman. Once a baseline was set, Rittman EMS could then compare their operations to several other organizations; both large and small, to assess differences and similarities. This study provided the information needed to establish a baseline of performance measures that could be used to demonstrate the value of EMS service provided by tax dollars. While no single set of standards exists for EMS performance measurement, the National Fire Protection Agency (NFPA), the American Heart Association (AHA), State of Ohio Division of EMS, US Department of Transportation (DOT) and the National Highway Traffic & Safety Administration (NHTSA) have recognized and defined some standards that are used frequently throughout the country.

Purpose of the Study

The purpose of this study was to set a baseline for Rittman EMS' performance at a designated point, and identify specific benchmarks for performance improvement. This

information allowed a comparison to other organizations to see how Rittman EMS fared. A data

comparison showed how well (or how poorly) the department operated in certain areas. It gave the

public an opportunity to place a value on the EMS service in their community, and it provided the

department administrator with the pertinent information needed to base sound financial decisions

on, and determine if changes were required.

Research Questions

The primary research method chosen for this study was descriptive research. This was

achieved by surveying department heads from other from other fire and EMS providers within

Wayne County, Ohio and its five bordering counties. The data compiled from these surveys

allowed Rittman EMS to set a baseline of their performance. It also allowed Rittman EMS to

compare themselves with other departments, both large and small, in a certain geographical area to

see how the department ranked. *This research was used to answer the following questions:*

1.   *What is the performance baseline of Rittman EMS?*

2.   *How does Rittman EMS compare to local organizations?*

3.   *Can performance goals be used to fill gaps in efficiency and effectiveness?*

Background and Significance

The City of Rittman, located in northeastern Wayne County, Ohio began providing

emergency medical services to the community in March of 1981. Prior to that time, the local

funeral home provided ambulance service in the area. At its inception, Rittman EMS was the first

paramedic service in the county. This service responded to emergency calls in the city and

surrounding contract areas. The first year the department responded to 236 calls (City of Rittman,

1981). At the time, many health care providers in the area considered Rittman EMS to be a very

progressive department based on the level of service provided and the modern equipment. Over the next 24 years, the call volume has increased by 232.2%. In 2004, the department responded to 784 calls (City of Rittman, 2004). While this volume may not seem like much, it has taxed the staff tremendously. Rittman EMS has maintained an average staffing of 30 members that provide emergency medical care to the 10,000 residents of the response area.

During this 24-year period (1981-2005), as the community has grown, Rittman EMS has attempted to be proactive with training and patient care; however, there is currently no baseline which to measure performance by. Without being able to measure performance and set benchmark goals for improvement, one risks falling behind and having to play catch up (Bruder, Jr. & Gray, 1994, p. S-11). There is also the risk of losing the public's financial support because there is no way to put monetary value on the department's service. Gary English summed up the need for measuring performance when he said: "For several years, public agencies have been caught in a double bind: their budgets are being cut, and they are under increasing pressure to provide more and better services" (1994, p.16). The significance this study could have on Rittman EMS is insurmountable. It will provide them with a means to gauge current performance in terms of:

1. Staffing. Is there adequate staffing to meet the communities' expectations in terms of acceptable response times and level of service?

2. Patient care. How does the current customer base perceive the effectiveness, timeliness, and quality of the current service?

3. Finance. Are the taxpayers receiving a good return on their investment in emergency medical services?

The information gathered, was utilized to set the baseline performance for Rittman EMS and to identify goals for continued improvement. It also provided the necessary information to base sound financial decisions on.

LITERATURE REVIEW

The literature reviewed during the preparation for this study included the following data

reports, textbooks, periodicals and internet research:

Performance Baseline

Altieri, Copes, Davidson, Dawson, Eastes, Gough, Maddox, Miller, & Swor (1997) talk

about the need for data to be reliable, rapidly accessible, standardized, and timely. The data

collected in this study defined the baseline for the performance of Rittman EMS. This baseline can

be used to begin the cycle of continuous improvement; the opportunity to seek improvement

through a constant effort to reduce waste and complexity. Standardization of data among EMS

providers would greatly increase the ability to document performance within the organization,

while reducing wasted time from collecting erroneous data. Additionally an organization has to

identify their customer, determine the needs of this customer, develop a plan to meet those needs,

and carry out the plan to meet the needs of the customer (p.19).

Fischer (1994) discusses how government entities get more "bang for the buck" by utilizing

the private sector idea of benchmarking. He states that benchmarking helps departments determine

where they stand in relation to others in terms of delivering a particular program or service.

Additionally, he talks about the need for determining a baseline for performance measures.

Ludwig Group, LLC (2005) discusses the application of standards as benchmarks. The

report references the National Fire Protection Association (NFPA), Occupational Health and

Safety Administration (OHSA), American Heart Association (AHA), National Institute of Health

(NIH), and the National Highway Traffic & Safety Administration (NHTSA) as agencies that have

established benchmark criteria for the public safety sector. NFPA and AHA have standards for

response times that provide a benchmark for comparison. The NIH standard requires Advanced

Life Support (ALS) care to all calls within eight minutes at least 90% of the time. Other areas of comparison by the Ludwig Group were training hours, unit utilization hours and communications; all of which have potential value for benchmarking.

Comparison of Data

Bruder, Jr. & Gray (1994) discuss how public sector benchmarking is more than an internal comparison. They write that it should include entities that are not directly comparable to the home organization, but are considered "best-in-class." By doing so, the organization will "leapfrog" into the best-in-class category, instead of trying to catch up to those organizations. They stress the importance of reliable data; without it, your comparisons will be worthless. They also indicate that the method of collection, such as accounting methods, can cause a difference in data.

English (1994) states, "It is a problem that every public agency in the country is facing—an increased workload but a growing reluctance by taxpayers to provide revenues" (p.10). His suggestion to fix this dilemma is to document improved efficiency. This is accomplished after doing a performance audit, which "consists of asking questions about what an individual or an office is supposed to be doing and what it is actually doing" (p.17), and by making sure that all responsibilities within a department are being met without placing undue strain on the resources available.

International City/County Manager Association (1993) discusses the use of comparative information on which to base decision-making. They also discuss how a private sector practice like benchmarking can be utilized by the fire service. Public sector benchmarking utilizes the best practices. An organization strives to identify the best practices in other organizations and

implement them in their own organization, in an effort to implement change and make improvement.

Walter (1998) writes of the difficulties managers have to justify increased expenditures, unless they can prove their communities will receive value. The means of establishing value are often hindered by a lack of standardized criteria. Organizations such as the Commission on Fire Accreditation International (CFAI) and International City/County Managers Association (ICMA) are working to establish standardized performance objectives for fire and EMS. If the EMS community can agree on a single set of performance measures nationwide, it will make way for an "apples to apples" comparison (Bruder and Gray, p. S-12).

Performance Goals

Ammons (1997) writes, "A big part of the service delivery challenge to local governments is providing desired services at affordable costs. The other part of the challenge lies in reassuring local taxpayers that their resources have been well spent" (p.11). Many local governments have investigated measuring performance standards that demonstrate efficiency, quality, and effectiveness. Such measures can provide useful data that managers use during their decision-making processes.

NFPA 1710 (2001) has become the gold standard for establishing response time goals. Response times are one of the most frequently found measures in fire and EMS. The standard is to have a basic life support (BLS) unit with automated external defibrillator (AED) on scene within four minutes, and an advanced life support (ALS) transport unit on scene within eight minutes (p. 6). This NFPA standard is written for the career departments, but serves as a performance goal for all departments to strive for. The importance of this measurement goal set by the NFPA is

reiterated by the 2005 AHA guidelines, which state a victim of cardiac arrest has a better chance of

survival if an AED is used within 3-5 minutes (IV-19).

By using performance goals, an organization is uses data to seek ways to improve their

service delivery. Al Gore writes:

> Leading-edge organizations, whether public or private, use performance measurement
> to gain insight into, and make judgments about, the effectiveness and efficiency of their
> programs, processes, and people. These best-in-class organizations choose what indicators
> they will use to measure their progress in meeting strategic goals and objectives, gather and
> analyze performance data, and then use these data to drive improvements in their
> organization—and successfully translate strategy into action. (1997, p. 5)

The data collected during this literature review, suggests the need for fire and EMS

organizations to adopt the same business practices as their private sector counterparts. The process

of benchmarking allows for the comparison of data that can be analyzed in an effort to improve

operations and service.

PROCEDURES

During the research for this project, it was noted that there was no one (1) specific set of performance indicators for emergency medical services to use. Various organizations such as: the International City/County Management Association (ICMA), the International Association of Fire Fighters (IAFF), International Association of Fire Chiefs (IAFC), the North Central EMS Institute (NCEMSI), the Commission on Fire Accreditation International (CFAI), and the State of Ohio Department of Public Safety all had their own data points. A mailing list was compiled, using the State Fire Marshal 2005 Ohio Fire Department Directory (Ohio Department of Commerce), which identified the chiefs of each fire and EMS agency within Ashland, Holmes, Medina, Stark, Summit and Wayne Counties (Appendix 1). This demographic and operational survey (Appendix 2) asked for a broad range of information to facilitate the benchmarking process. It was later determined to narrow the focus of this study and prioritize the performance indicators against the overall mission of the department (Fischer. p.S-7). The additional data can be used for further OFE research. For this study it was decided to utilize the following performance indicators, which were derived from the various organizations listed above, to measure the performance of Rittman EMS:

Service Area Descriptors

1. Total population served

2. Total square miles served

Administrative Indicators

3. Total operating budget

4. Method of Funding

5. Annual payroll expenses

6. Total number of personnel

EMS Indicators

7. EMS response times (from dispatch to arrival)

8. Collection rates of EMS billing

9. Number of EMS calls

10. Number of EMS transports

From the data collected on these points, a baseline was set for Rittman EMS' current

performance. The information was then compared to similar organizations, and studied to

determine how Rittman EMS compares to other agencies. The comparisons were made from

comparing real numbers, or by basing figures on a per capita basis. After studying the results,

decisions were made for long-term planning and implementing performance improvement goals.

As an additional method of gauging the performance at the local level, Rittman EMS

began mailing out customer satisfaction surveys to all patients transported by the department

(Appendix 3) beginning January 1, 2006. The purpose of these surveys was to discover the

public's opinion of Rittman EMS, and give insight into what programs and services the public

expected the department to perform. The surveys were typically sent out between two and four

weeks after the date of service, so that the patient had ample time to recover from their injuries or

illness without being burdened by additional paperwork. During the first quarter of 2006, 168

surveys were sent out. Nine surveys were returned due to invalid addresses, leaving 159 surveys

presumed delivered to the patients. Of these 159 deliverable surveys, 57 responses were returned

by the May 30, 2006 deadline, giving a 35.84% return rate. The chief of the department then

tallied these surveys up, and used the data collected to gauge the general impression held by the

department's external customers.

<u>Definition of Terms</u>

The following terms below have been defined from the report *Serving the American Public: Best Practices in Performance Measurement* (Gore. 1997).

Baseline data: Initial collection of data to establish a basis for comparison.

Benchmark: A standard or point of reference used in measuring and/or judging quality or value.

Benchmarking: The process of continuously comparing and measuring an organization against business leaders anywhere in the world to gain information that will help the organization take action to improve its performance.

External customer: An individual or group outside the boundaries of the producing organization that receives or uses the output of the process.

Internal customer: An individual or group inside the boundaries of the producing organization that receives or uses the output from a previous stage or process to contribute to production of the final product or service.

Key performance indicator: Measurable factor of extreme importance to the organization in achieving its strategic goals, objectives, vision, and values that, if not implemented properly, would likely result in a significant decrease in customer satisfaction, employee morale, and effective financial management

Measure: One of several measurable values that contribute to the understanding and quantification of a key performance indicator.

Outcome measure: An assessment of the results of a program activity as compared to its intended purpose.

Output measure: Tabulation, calculation, or recording of activity or effort.

Performance goal: A target level of an activity expressed as a tangible measurable

objective, against which actual achievement can be compared.

Performance management: The use of performance measurement information to help set

agreed-upon performance goals, allocate and prioritize resources, inform managers to

either confirm or change current policy or program directions to meet those goals, and

report on the success in meeting those goals.

Performance measure: A quantitative or qualitative characterization of performance.

Performance measurement: A process of assessing progress toward achieving

predetermined goals, including information on the efficiency with which resources are

transformed into goods and services (outputs), the quality of those outputs (how well they

are delivered to clients and the extent to which clients are satisfied) and outcomes (the

results of a program activity compared to its intended purpose), and the effectiveness of

government operations in terms of their specific contributions to program objectives.

Limitations of the Study

There were some limitations noted during the course of this study; the major limitation

being the lack of standardized data. While several agencies or organizations have been working

toward standardized reporting data, there were some difficulties in gathering information that was

truly comparable and that reflected accurate performance. There were difficulties with: agencies

not collecting certain data, how the data was interpreted, and various accounting methods.

In terms of not collecting data, it was noted that many jurisdictions did not collect certain

information such as the number of cardiac arrest patients that arrived at the ER with a pulse or the

number of occupancies in their response area. Data interpretation also posed limitations on the

study. Many organizations had different ideas on what the definition of certain data was. There was a big variation on the meaning of volunteer, part-time, and paid-on-call among fire departments. Additionally, the number of occupancies in the service area was interpreted in various ways. Some departments reported business occupancies only and some residential occupancies only. Still others used highly suspicious data, such as one occupancy per resident. Accounting methods within organizations vary as well, putting limits on the true reflection of the performance. NFPA 1710 stresses the importance of utilizing a fractile method for documenting response times versus the traditional average response times (2001). It was discovered during the early stages of this study, that relatively few departments are utilizing the fractile method for response times. In using response time averages, there was some discussion on when to begin and when to end the response clock. For this study, that particular dilemma was defined as the average response time for EMS units in 2005, from time of dispatch to arrival on scene (Appendix 2).

Further limitations were noted by the limited survey responses returned. The demographic survey had a return rate of 32.43% (111 surveys distributed, and 36 surveys returned). The customer service survey was distributed to 168 individuals, nine were returned for invalid addresses, leaving a possibility of 159 surveys reaching the customers. 57 survey responses were returned giving a 35.84% return rate.

RESULTS

The following fire and EMS departments participated in this study by providing a response to a demographic survey that was sent to all departments in Wayne County and its five-county area surrounding Rittman, Ohio (Appendix 1). The following table lists the participating departments:

Table 1.   Participating Departments

Polk-Jackson Perry Fire Dept. Ashland County	Ashland Fire Dept. Ashland County	Loudonville Fire Dept. Ashland County
Holmes Fire District 1 Holmes County	Valley City Fire Dept. Medina County	Lafayette Township Fire Dept. Medina County
Medina Fire Dept. Medina County	Brunswick Fire Dept. Medina County	Wadsworth Fire Dept. Medina County
Hinckley Fire Dept. Medina County	Brunswick Hills Fire Dept. Medina County	Spencer Fire Dept. Medina County
Alliance Fire Dept. Stark County	Lexington Township Fire Stark County	Bethlehem Township Fire Stark County
Louisville Fire Dept. Stark County	Perry Township Fire Dept. Stark County	Greentown Fire Dept. Stark County
Massillon Fire Dept. Stark County	Brewster Fire Dept. Stark County	Beach City Fire Dept. Stark County
North Canton Fire Dept. Stark County	East Sparta Fire Dept. Stark County	City of Canton Fire Dept. Stark County
Unknown Fire Dept.* Stark County	Twinsburg Fire Dept. Summit County	Cuyahoga Falls Fire Dept. Summit County
Central Fire District Wayne County	Chippewa Township Fire Dept. Wayne County	Wooster Township Fire Dept. Wayne County
New Pittsburgh Fire Dept. Wayne County	Town & Country Fire District Wayne County	Apple Creek Fire Dept. Wayne County
Orrville Fire Dept. Wayne County	Sterling Fire District Wayne County	Rittman EMS Wayne County

*Stark County Postmark, No Department Identified

The information gathered from these departments was used to set the baseline of Rittman EMS' performance, and to answer the questions posed in this study.

1. *What is the performance baseline of Rittman EMS?*

Rittman EMS serves 10,000 people over a 25 square mile area. The department is funded by a five-year 2.4 mill property tax levy and supplemented by ambulance billing. The 83% collection rate that Rittman EMS enjoyed in 2005, allowed for a $337,000 annual operating budget. During the time of this study, the department had 33 employees; a full-time chief, part-time paramedics, and the remaining staff were paid-on-call. The annual payroll budget was $227,800-- roughly 67.6% of the total budget. In 2005, Rittman EMS responded to 735 calls for assistance, and transported 450 patients to area hospitals. The average response time for an ALS squad, from the time of dispatch until arriving on scene was 5.7 minutes in 2005.

Table 2. Rittman EMS 2005 Demographics

Performance Indicator	2005 Results
Total Population Served	10,000
Total Square Miles	25
Method of Funding	Levy, Billing
Total Operating Budget	$337,000
Number of Personnel	33
Highest Level of Service	Paramedic
Annual Payroll Expenses	$227,800
Average Collection Rate	83%
Annual EMS Call Volume	735
Number of EMS Transports	450
Average Response Time	5.70 minutes

The information gathered for each performance measure from Table 2 was reduced to its lowest common denominator (LCD) to gain an actual basis for future comparison, and it thereby set the baseline of Rittman EMS' service. This baseline is noted in Table 3.

Table 3. Rittman EMS Baseline Results-Lowest Common Denominator

Performance Indicator	2005 Results	Baseline Results
Population Served	10,000	400 Residents per Square Mile
Number of Personnel	33	3.3 EMTs for Every 1,000 Residents
Operating Budget	$337,000	$33.70 per Resident
Payroll Expenses	$227,800	$22.78 per Resident
EMS Call Volume	735	73.5 Calls per 1,000 Residents
Number of EMS Transports	450	45 Transports per 1,000 Residents

The total population of Rittman EMS' service area was identified, and then divided by the total number of square miles in the service area to determine the average population density. It was determined that population density of the department's service area is 400 residents per square mile. It was also noted that Rittman EMS staffs an average of 3.3 EMTs or paramedic for every 1,000 residents. By using a combination of a property tax levy and EMS billing, it was determined that the City of Rittman spends an average of $33.70 for each resident of the service area; of that amount, $22.78 goes toward payroll expenses to staff the paramedic level service. During this study it was noted that the most commonly kept statistic was call volume. Rittman EMS responded to 735 calls in 2005-- an average of 2.01 calls per day. One could further determine that

Rittman EMS responded to 73.5 calls per 1,000 residents, and made 45 transports per 1,000

residents.

Additional data was gathered that was pertinent, but unable to be reduced to the LCD. This

data, found in Table 2, included: square miles, method of funding, highest level of service,

collection rate, and response times. The data was important to identify; and even though it could

not be reduced, it was necessary to determine for future comparisons and performance

improvement. Since no prior baseline existed within Rittman EMS, the remaining baseline data,

found in Table 4, was set the same as the 2005 results.

Table 4. Rittman EMS Baseline Results-Based on FY 2005 Data

Performance Measure	Baseline Results (FY 2005 Data)
Square Miles	25
Method of Funding	Levy, Billing
Highest Level of Service	Paramedic
Collection Rate	83%
Average Response Times (From Dispatch to On-Scene)	5.70 Minutes

It should be noted that by offering paramedic level service, Rittman EMS provides the

highest level of pre-hospital care available according to the EMT-Paramedic National Standard

Curriculum (US Department of Transportation, 1998). The department has implemented billing

program for all transports provided by the department. By providing paramedic level service, the

department is permitted to bill at a higher rate for transports. These user fees have brought in

sufficient revenue to supplement the operations of the department. The final performance measure

that was evaluated was average response times. This was defined to be the time from dispatch,

until the squad arrived at the scene. This average was taken for comparison to NFPA 1710 to

determine where the department stood against this national standard for the recommended

response times for Advanced Life Support (ALS) transports (2001). The baseline for Rittman

EMS was set at the 2005 mark of 5.70 minutes.

In addition to using these performance measures, it was determined that a survey of the

external customers was needed. "Patient and stakeholder satisfaction is important to a quality-

oriented EMS system" (Altieri, et al., p. 47). An opportunity for all patients contacted by Rittman

EMS to gauge their satisfaction was allowed by a customer satisfaction survey (Appendix 3). The

results of the surveys returned prior to the May 30, 2006 deadline are listed below.

Table 5. Overall Customer Satisfaction With Rittman EMS   **(N=57)**

Please rate your overall satisfaction with the service that Rittman EMS provided to you.	Excellent	Good	Fair	Poor	No Response
	49	7	0	0	1

With a 35.84% return rate on the surveys, the baseline for external customer satisfaction

was set at a 79.66% "excellent" rating with no responses citing below a "good" level.

2. *How does Rittman EMS compare to local organizations?*

Having set a baseline for comparison of the performance measures, it was determined that

there was a need to perform a direct comparison to similar departments in the area (Bruder and

Gray, p. S-11). For the purpose of this study, these direct comparisons were made by surveying

fire and EMS departments within Wayne County, and the five-county area that borders Wayne

County (Appendix 1). This researcher sent a demographic survey to 111 departments within this

area and received 36 back. While the 32.43% return rate seemed low initially, it did return some

valuable data for comparison. The first step in this process was to eliminate any department that

could not be considered a direct comparison because they did not provide any EMS service. This

eliminated three departments. All of the following results are based on 33 responses (N=33).

Next, each department was studied to determine a high, low, and average for each performance

indicator, and then compare it to Rittman EMS' results.

Table 6. Direct Comparison of High, Low, and Average Results versus Rittman EMS (N=33)

Performance Indicator	Rittman EMS	High	Low	Average
Total Population Served	10,000	81,000	2,400	15,796
Total Square Miles	25	90	6.1	35.08
Total Operating Budget	$337,000	$13,000,000	$72,500	$1,430,379
Number of Personnel	33	164	22	43.97
Highest Level of Service	Paramedic	Paramedic	First Responder	28 at Paramedic Level
Annual Payroll Expenses	$227,800	$9,000,000	$0	$1,037,690
Average Collection Rate	83%	90%	No Billing	69.84%
Annual Call Volume	735	9,900	0	1,195.6
Number of Transports	450	7,500	0	930.12
Average Response Time	5.70 minutes	11.36 Minutes	N/A	5.83 Minutes

The information detailed by the previous chart assisted this researcher in determining the

efficiency of Rittman EMS. This required the data from all of the responding EMS agencies

(N=33) to be broken down into more qualitative context that could be compared locally (Ammons,

p.11). This data was broken down into the same benchmarks that were used to set the baseline for

Rittman EMS.

Table 7. Overall Comparison of Baseline Averages against Rittman EMS   (N=33)

Performance Indicator	Rittman EMS	Average Baseline
Population Served	400 Residents per Square Mile	781 Residents per Square Mile
Number of Personnel	3.3 EMTs for Every 1,000 Residents	2.7 EMTs for Every 1,000 Residents
Operating Budget	$33.70 per Resident	$90.55 per Resident
Payroll Expenses	$22.78 per Resident	$63.86 per Resident
EMS Call Volume	73.5 Calls per 1,000 Residents	69.38 Calls per 1,000 Residents
Number of EMS Transports	45 Transports per 1,000 Residents	53.97 Transports per 1,000 Residents

Based on this information, it was determined that the population density of the Rittman

EMS service area is nearly half of the average population density, or an average of 381 residents

less, per square mile, than the average department. It was also noted that Rittman EMS staffs an

average of 3.3 EMTs or paramedics for every 1,000 residents compared to the 2.7 EMTs or

paramedics for every 1,000 residents on average in the surveyed area. The City of Rittman spent

an average of $33.70 per resident for EMS services in 2005, while the average department within

this area spent $90.55 per resident; that was $56.85 less per resident than the average department.

Rittman EMS' payroll expense of $22.78 per resident also was noted far below that of the average

department's expense of $63.86 per resident.

The performance output of Rittman EMS was measured by an average of 2.01 calls per

day. The overall daily call average was 3.27 calls per day. On a per capita basis, Rittman EMS

responded to 73.5 calls per 1,000 residents, and made 45 transports per 1,000 residents. The

average was 69.38 calls per 1,000 residents and 53.97 transports per 1,000 residents.

The following Table identifies the remaining performance measures as they compare the averages of all respondents against the baseline of Rittman EMS.

Table 8. Overall Comparison of Benchmark Averages against Rittman EMS   (N=33)

Performance Measure	Rittman EMS	Average Benchmark
Square Miles	25	35.08
Method of Funding	Levy, Billing	Levy, General Fund, Billing
Highest Level of Service	Paramedic	28 at Paramedic Level
Collection Rate	83%	69.84%
Average Response Times (From Dispatch to On-Scene)	5.70 Minutes	5.83 Minutes

By analyzing this Table, it was determined that Rittman EMS covers an average of 10.08 square miles less than that of the other surveyed departments. Rittman EMS' method of funding was determined to be within the norm. The department also was noted to offer paramedic service to the service area, like that of the majority of other departments surveyed. It should also be noted that of the 33 departments that provided some level of EMS response, two were first responders only, three were staffed to the intermediate level and the remaining 28 were staffed up to the paramedic level.

After Tables 6 through 8 were analyzed, this researcher had concern that the extreme highs and lows of the financial data may have skewed the remaining results. To test this hypothesis, the average of the annual operating budget of $1,430,379 from Table 6 was used to create a maximum budgetary threshold to be used for further study. Therefore, all departments with an annual budget over that threshold were eliminated for this part of the study.   24 departments fell below this

budgetary threshold (N=24). The following Tables, 9 through 12 are based on only the

departments that fell within the imposed threshold.

Table 9. Direct Comparison of High, Low, and Average Results versus Rittman EMS (N=24)

Performance Indicator	Rittman EMS	High	Low	Average
Total Population Served	10,000	29,867	2,400	8,559
Total Square Miles	25	90	6.1	36.37
Total Operating Budget	$337,000	$1,404,164	$72,500	$387,319
Number of Personnel	33	71	22	37.25
Highest Level of Service	Paramedic	Paramedic	First Responder	20 at Paramedic Level
Annual Payroll Expenses	$227,800	$800,000	$0	$181,527
Average Collection Rate	83%	85%	No Billing	66.95%
Annual Call Volume	735	1,825	N/A	437.08
Number of Transports	450	1,357	0	351.17
Average Response Time	5.70 minutes	11.36 Minutes	N/A	6.51 Minutes

Using this modified method for direct comparison, this researcher found that Rittman

EMS serves more residents than the average, by over 1,400. The department does, however, cover

11.37 square miles fewer than the average. It was also determined that Rittman EMS employs five

fewer employees than the average. The department was able to provide paramedic level service,

which was found to be the norm within this area. The ability of the department to maintain

paramedic service to the area was accomplished, financially, by a 2.4 mill property tax levy

supplemented by EMS billing. The department's collection rate on billing was 83% for 2005. For

FY 2005 Rittman EMS had an operating budget of $337,000 and payroll expenses of $227,800; in

other words, payroll expenses accounted for 67.59% of Rittman EMS' total operating budget compared to the average of 46.86%.

Table 10. Modified Comparison of Baseline Averages against Rittman EMS   (N=24)

Performance Indicator	Rittman EMS	Average Baseline
Population Served	400 Residents per Square Mile	235.29 Residents per Square Mile
Number of Personnel	3.3 EMTs for Every 1,000 Residents	4.57 EMTs for Every 1,000 Residents
Operating Budget	$33.70 per Resident	$45.25 per Resident
Payroll Expenses	$22.78 per Resident	$20.35 per Resident
EMS Call Volume	73.5 Calls per 1,000 Residents	48.93 Calls per 1,000 Residents
Number of EMS Transports	45 Transports per 1,000 Residents	39.32 Transports per 1,000 Residents

Based on this modified pool of information, it was determined that the population density of Rittman EMS' service area is 164.71 residents more per square mile than the remaining departments. It was also noted that Rittman EMS staffs an average of 3.3 EMTs or paramedics for every 1,000 residents, compared to the 4.57 EMTs or paramedics for every 1,000 residents on average in the surveyed area. The City of Rittman spent an average of $33.70 per resident for EMS services in 2005, while the average department within this area spent $45.25 per resident; that was $11.55 less per resident than the average department. Rittman EMS' payroll expense of $22.78 per resident was noted slightly above that of the average department's expense of $20.35 per resident.

The performance output of Rittman EMS was measured at an average of 2.01 calls per day. The overall daily call average of the departments falling within this modified budget range was

1.19 calls per day. On a per capita basis, Rittman EMS responded to 73.5 calls per 1,000 residents,

and made 45 transports per 1,000 residents. The average was 48.93 calls per 1,000 residents and

39.32 transports per 1,000 residents.

The following table identifies the remaining performance indicators as they compare to

Rittman EMS' baseline after being adjusted by the modified budgetary threshold.

Table 11. Modified Comparison of Benchmark Averages against Rittman EMS   (N=24)

Performance Measure	Rittman EMS	Average Benchmark
Square Miles	25	36.37
Method of Funding	Levy, Billing	Levy, General Fund, Billing
Highest Level of Service	Paramedic	20 at Paramedic Level
Collection Rate	83%	66.95%
Average Response Times (From Dispatch to On-Scene)	5.70 Minutes	6.51 Minutes

The final performance measure this study looked at was response times. According to

NFPA 1710, EMS units should set response goals to four minutes or less for the arrival of a unit

with first responder or higher level capability at an emergency medical incident, and eight minutes

or less for the arrival of an advanced life support unit at an emergency medical incident. The

expected result is a department that reaches the defined goal on 90% or more of their responses

(2001, p. 6). During the preliminary research of this study, it was noted that most departments

were not yet using this fractile method of response time measurement; they were utilizing an

average response time measurement. For the purpose of this study, the definition of response time

was defined as from the time of dispatch, until the first unit arrives at the scene (Appendix 2). The

following chart shows how Rittman EMS compared to the average response times of the

departments that provided data on response times, which was 5.83 minutes. It should be noted that the data from this chart is based on 31 respondents, as two departments did not provide data on response times.

Figure 1. Comparison of Average Response Times From Dispatch to Arrival   (N=31)
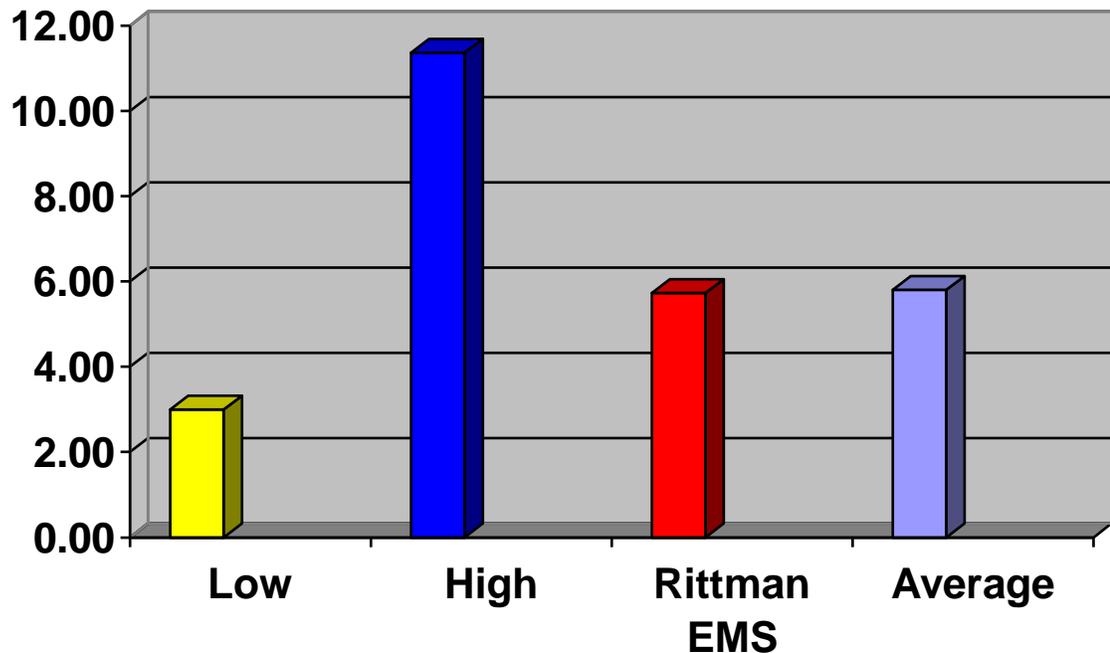
Based on the data received for response times noted in Figure 1, the average department falls within the response time goal set by NFPA 1710-- an ALS transport unit on scene within eight minutes. Comparatively, Rittman EMS averaged slightly quicker response times than the average. The caveat of NFPA 1710 is this response goal should be met on 90% of the EMS responses (2001, p.6). Early research noted the relatively few departments utilize this fractile method for tracking response time statistics. This study chose to concentrate on seeking out data that was easily accessible (Altieri, et al, p. 22). By using the average method, it should be noted that only four departments surveyed had response times that averaged above the NFPA and AHA recommended response time goals.

3. Can performance goals be used to fill gaps in efficiency and effectiveness?

In order to determine if there were any performance gaps, Table 12 was compiled to show the results of the modified comparisons, the overall comparisons, and Rittman EMS.

Table 12. At-a-Glance Comparison: Rittman EMS versus Overall and Modified Baselines

Performance Indicator	Overall Baseline (N=33)	Rittman EMS	Modified Baseline (N=24)
Population Served	781 Residents per Square Mile	400 Residents per Square Mile	235.29 Residents per Square Mile
Number of Personnel	2.7 EMTs for Every 1,000 Residents	3.3 EMTs for Every 1,000 Residents	4.57 EMTs for Every 1,000 Residents
Operating Budget	$90.55 per Resident	$33.70 per Resident	$45.25 per Resident
Payroll Expenses	$63.86 per Resident	$22.78 per Resident	$20.35 per Resident
EMS Call Volume	69.38 Calls per 1,000 Residents	73.5 Calls per 1,000 Residents	48.93 Calls per 1,000 Residents
Number of EMS Transports	53.97 Transports per 1,000 Residents	45 Transports per 1,000 Residents	39.32 Transports per 1,000 Residents
Square Miles	35.08	25	36.37
Method of Funding	Levy, General Fund, Billing	Levy, Billing	Levy, General Fund, Billing
Highest Level of Service	28 at Paramedic Level	Paramedic	20 at Paramedic Level
Collection Rate	69.84%	83%	66.95%
Average Response Times (From Dispatch to On-Scene)	5.83 Minutes	5.70 Minutes	6.51 Minutes

With the exception of the population density, overall budget, and payroll budget the use of an overall comparison did not cause drastically disproportional gaps. Rittman EMS' population

density fell almost twice as high as the modified average, and nearly one half that of the overall

average density. The operating budget for the department was noted to be lower than that of the

average department using both methods. The overall comparison method had a very large

discrepancy in operating budgets due to including a wide range of departments, both volunteer and

career. When the modified budgetary threshold was used, Rittman EMS was still noted to spend

less per resident that the average department did. This fact was interesting when it was noted that

Rittman EMS averaged more calls per 1,000 residents that the average department utilizing either

method of comparison. The payroll expenses for Rittman EMS were noted slightly above average

in the modified comparison; while when compared to the overall average Rittman EMS spent

approximately one-third the amount of the average department. Another notable result from this

table shows that Rittman EMS averages a quicker response time that the average using either

method of comparison. After identifying these gaps, the department will have the opportunity to

use these benchmarks to set performance goals. These goals help to facilitate improvement by

bringing to light the best practices of the other organizations (Fischer. 1994. p. S-4).

DISCUSSION

"Identifying a problem and taking steps to resolve it is certainly preferable to not knowing something is wrong, keeping your head in the proverbial sand, or maintaining an inefficient status quo" (Fischer, 1994. p. S-7). Through its 25-year history, Rittman EMS has maintained the status quo. There was no method by which to measure performance. By initiating this benchmarking study, Rittman EMS has taken steps to reassure taxpayers that their resources have been well spent (Ammons. 1997. p. 11). This study has supplied the leaders of Rittman EMS a starting point at which to set a baseline for performance.

This study gathered data from area fire and EMS departments to compare their performance against each other in terms of demographics, operations, and financial information. These departments ranged from rural volunteer departments, with little to no payroll expenses, to career departments in metropolitan areas with budgets over $13 million (Appendix 4). None of the departments in this study were identical; however, the information obtained was able to provide many useful, per capita comparisons. This process is considered a global approach, and therefore is appropriate for any size or shape of agency (Walter. 1996. p. 19).

During the course of this study, this researcher encountered several stumbling blocks while gathering and analyzing data. Initially this project was to include some additional performance indicators such as: number of training hours for the department, number of cardiac arrest patients that arrived at the ER with a pulse, number of on-the-job injuries in the past two years, and number of occupancies in the service area. However, it was determined that the definitions of data sets were interpreted much differently between organizations. Altieri, et al discusses how standardization of data among EMS providers would greatly increase the ability to document performance within the organization (1997. p. 19).

This researcher found some interesting results for some of the performance indicators. The number of calls per 1,000 was the most surprising. Rittman EMS ranked 10th overall for most calls per 1,000 residents in a direct comparison. By using the averages, the department had the highest call volume per 1,000 using either average method. This per capita comparison was interesting because of the sizes and populations of some of the participating departments. Another per capita comparison that was somewhat unexpected was the seemingly low amounts budgeted for overall operations and for payroll expenses. This researcher could understand why the results were disproportional when using the overall average, as nine departments had annual budgets higher that the overall average (See Figure 6); but it was surprising that after using the modified budgetary threshold that Rittman EMS was still below the average. The performance measure result to gain this researcher's attention was response times. The definition for average response times in this study was the time if dispatch, until the time of arrival. According to the results of this study only six departments averaged response times greater than the NFPA 1710 standard (2001). This is sufficient for setting a baseline; however this researcher believes that the definition needs to be standardized at the national level. It should reflect the use of a fractile method of response times as suggested in 1710, and set a goal for meeting the eight minute ALS transport time at 90% of emergency responses. This researcher also believes that the response times should accurately reflect the actual time from calling 911, until help arrives, and not simply from when EMS is dispatched. Although EMS systems typically do not have control over call-processing and dispatch times, this time is included in the public's perception of response times. By using the definitions found in NFPA 1710, the public will have the opportunity to see exactly where the time is spent getting EMS to the emergency (2001. p. 6).

In addition to statistical data, this study provided Rittman EMS with a means to gauge how well (or how poorly) the general public perceives the quality and efficiency of their service. The

use of a customer satisfaction survey, suggested by Altieri, et al has proven to lend insight into the external customer's attitude towards the department (1997. p. 18). The baseline for satisfaction was set at a 79.66% excellent rating; and allows for setting performance goals to achieve a higher rating of improved customer service. The overall implications this study has provided Rittman EMS is the foundation to build an effective performance improvement program to become a leading-edge organization (Al Gore.1997, p. 5)

RECOMMENDATIONS

As the literature review and research have shown, benchmarking and performance measurement in the public sector has provided fire and EMS agencies with a method of determining how they compare to other organizations. There is a wealth of information available to departments if they are willing to invest the time and energy into gathering data; and are willing to make the necessary organizational changes to facilitate performance improvement. As a result of this study, the following recommendations were made:

1. Work to establish standardized definitions for data. The use of standardized data sets allows for easier access to information, and the ability to compare "apples-to-apples."

2. Set specific goals for desired improvement, and set a time frame to accomplish those goals.

   a. Improve response times by 30 seconds for 2006. Response times have a direct impact on the external customers, and are the most frequent cause for complaints. It is also the area which will most directly demonstrate effectiveness and efficiency to the community.

   b. Improve customer satisfaction to at least an 85% excellent rating by January 1, 2007. Tradition in public safety has led us to believe that we are not customer driven. The next-generation of public safety administrators have realized the need to be responsible to their customers--the tax-payers.

3. Implement customer service training for all employees. An organized training program that places a customer-first mentality as the basis for the department's mission. This customer-centered approach will reduce the number citizen complaints and instill community pride in the department.

4. Embrace change. The information gathered by this research, will allow the administrators of Rittman EMS to make organizational decisions in order to improve the department.

While gathering the data for this project, there were other performance indicators that could potentially yield valuable information; however, due to differences in data definitions and time constraints these were not researched in depth. These performance indicators, which can assist future researchers with their OFE applied research projects, include, but are by no means limited to:

- Type of service: fire based, private, municipal 3rd service, other

- Transport fee structure

- Number of transport vehicles

- Number of stations

- Percentage of medical calls versus trauma calls

- Residential structures within the service area

- Commercial structures within the service area

- Annual training hours per year, per person

- Average length of service

- Additional programs or services offered

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APPENDIX 1– MAP OF OHIO THAT OUTLINES THE STUDY AREA

Source: http://www.dot.state.oh.us/map1/ohiomap/images.PlainCounty.gif

APPENDIX 2– A SURVEY OF OPERATIONS AND PERFORMANCE INDICATORS

Rittman Emergency Medical Services   *"To Save a Life"*
25 North State Street   **Andrew Baillis, Chief**
Rittman, Ohio 44270   **(330) 925-2065**

_____

March 27, 2006

My fellow chiefs:

My name is Andy Baillis. I am the Chief of Rittman EMS, and a member of the Ohio Fire
Executive Program. As a requirement of this course, we are to complete an applied
research project. I have decided to do a study in benchmarking and performance measures
within the fire service. The purpose of this attached survey is to gather some basic
demographic data to set the foundation for this study.

I'd like to ask you to take a few minutes and fill out the enclosed survey, and return the
results to me. The results of the surveys will be compiled into a database, which can then
be used to set the baseline of a department's performance. Once a baseline is set, a
department can begin to set goals for improvement. All individually identifying
information will be held with the strictest confidence.

Should you have any questions, feel free to contact me at 330-925-2065 or
Abaillis@rittman.com

Thank you in advance,

A. Baillis

Chief Andy Baillis
Rittman EMS

PLEASE DESCRIBE YOUR SERVICE AREA BY ANSWERING THE FOLLOWING QUESTIONS:

1. What is the total population served by your department?

2. How many square miles does your department cover?

3. How many occupancies do you estimate are within this area?

4. Do you cover any area under a contractual agreement? ☐Yes ☐No

If yes, please answer the following:

What is the population of your primary service area (Exclude any contracted areas)?

How many square miles does your department cover without this contracted area?

PLEASE ANSWER THE FOLLOWING QUESTIONS REGARDING THE OPERATIONS OF YOUR DEPARTMENT:

5. How many career personnel do you have? _____

6. How many part-time personnel do you have? _____

7. How many volunteer members do you have? _____

8. What is your total annual operating budget? _____

9. Where do your operations funds come from?

   ☐General Fund ☐Levy Supported ☐ Income Tax ☐Other

10. What is your annual payroll expense? _____

11. In the last two years, how many on-the-job injuries have members of your department suffered? _____

12. How many personnel do you average on duty at any given time? _____

13. How many hours of training does your department participate in annually? _____

14. How many citizens were trained in CPR by your staff last year? _____

PLEASE ANSWER THE FOLLOWING QUESTIONS REGARDING THE OPERATIONS OF YOUR DEPARTMENT:

15. What is the highest level of EMS care that your department provides?
☐ First Responder ☐EMT-Basic ☐ Intermediate ☐Paramedic ☐None

16. Number of EMS calls in 2005 _____

17. Number of EMS transports in 2005 _____

18. Number of transport vehicles _____

19. Average response time for EMS units in 2005?
(From time of dispatch to arrival on scene) _____min. _____sec.

20. Number of cardiac arrest patients delivered to the hospital with a pulse? _____

21. Do you bill for EMS service? ☐Yes ☐No
If yes what is your collection rate? _____%

For verification purposes, please fill out the following contact information:

ALL CONTACT INFORMATION WILL BE HELD IN STRICT CONFIDENCE.

Name: Rank:
Department:
Phone Number: Email:

☐Yes, please send me a summary of these survey results.

☐No, it is not necessary to send me a summary of these results.

Thank you for taking the time out of your busy schedule to answer my questions.

Please return this survey in the enclosed self-addressed stamped envelope.
If you desire, you may also fax the information to me at 330-925-2068.

If you have already received this survey via email, please accept my gratitude and disregard this mailing.

APPENDIX 3 – CUSTOMER SATISFACTION SURVEY

Your satisfaction is important to Rittman EMS. Please take a few moments of your time and tell us how we did on our last opportunity to serve you.

Date of service: _____

1. **Was your "911" call handled promptly, in a professional manner?**
   Yes   No   Did not use "911"

2. **How was our response time?**
   About right   Too slow   Other _____

3. **How would you rate our crew's professionalism and courtesy?**
   Excellent   Good   Fair   Poor

4. **How do you feel your emergency was handled?**
   Excellent   Good   Fair   Poor

5. **Please rate your overall satisfaction with the service that Rittman EMS provided to you.**
   Excellent   Good   Fair   Poor

   Comments: _____
   _____
   _____
   _____

   Would you like someone from the department to contact you? *Yes   No*
   In person _____ By Phone _____ Number_____

   Additional contact information (optional): _____
   _____
   _____

   Feel free to contact us at: *Rittman EMS*
   Attn: Chief Andy Baillis
   25 N. State Street
   Rittman, Ohio 44270

   Phone: 330-925-2065

Thank you for allowing us to serve you.

APPENDIX 4 – SUMMARY SHEETS OF OFE DEMOGRAPHIC SURVEYS BY QUESTION

Wayne County	Total Population Served by the Department
Rittman EMS	10,000
Central Fire	15,470
Chippewa Township Fire	12,000
Wooster Township Fire	8,500
New Pittsburgh Fire	4,500
Town & Country Fire District	8,050
Apple Creek Fire	6,800
Orrville Fire	10,000
Sterling Fire District	2,400
Summit County	
Twinsburg Fire	21,000
Cuyahoga Falls Fire	50,515
Ashland County	
Polk-Jackson-Perry Fire	5,000
Ashland Fire	26,000
Loudonville Fire	4,800
Medina County	
Valley City Fire	4,761
Lafayette Township Fire	7,000
Medina Fire	33,312
Brunswick Fire	36,000
Wadsworth Fire	26,292
Hinkley Fire	7,000
Brunswick Hills Fire	6,200
Spencer Fire	3,800
Stark County	
Louisville Fire	9,000
Alliance Fire	23,000
Lexington Township Fire	5,580
Bethlehem Township Fire	5,000
Massillon Fire	31,325
Perry Township Fire	29,867
Greentown Fire	15,000
North Canton Fire	16,300
Brewster Fire	8,000
Beach City Fire	6,687
Unknown	15,000
East Sparta Vol. Fire	3,500
City of Canton	81,000
Holmes County	
Holmes District #1	10,000

Wayne County	Total Square Miles Covered by the Department
Rittman EMS	25
Central Fire	54
Chippewa Township Fire	26
Wooster Township Fire	63
New Pittsburgh Fire	63.9
Town & Country Fire District	70
Apple Creek Fire	37.5
Orrville Fire	35
Sterling Fire District	22
Summit County	
Twinsburg Fire	21.4
Cuyahoga Falls Fire	27
Ashland County	
Polk-Jackson-Perry Fire	45
Ashland Fire	60
Loudonville Fire	50
Medina County	
Valley City Fire	25
Lafayette Township Fire	23
Medina Fire	32.7
Brunswick Fire	12.5
Wadsworth Fire	25.2
Hinkley Fire	25
Brunswick Hills Fire	12.5
Spencer Fire	25
Stark County	
Louisville Fire	6.1
Alliance Fire	8
Lexington Township Fire	24
Bethlehem Township Fire	36
Massillon Fire	18.79
Perry Township Fire	24
Greentown Fire	12
North Canton Fire	5.6
Brewster Fire	70
Beach City Fire	9
Unknown	100
East Sparta Vol. Fire	54
City of Canton	25
Holmes County	
Holmes District #1	90

Wayne County	**Estimated Number of Occupancies Within the Area**
Rittman EMS	2,476
Central Fire	N/A
Chippewa Township Fire	1000
Wooster Township Fire	3000
New Pittsburgh Fire	N/A
Town & Country Fire District	5,000
Apple Creek Fire	6,800
Orrville Fire	10,000
Sterling Fire District	650
Summit County	
Twinsburg Fire	5,000
Cuyahoga Falls Fire	26,000
Ashland County	
Polk-Jackson-Perry Fire	1,500
Ashland Fire	9,700
Loudonville Fire	2,000
Medina County	
Valley City Fire	1,800
Lafayette Township Fire	2,500
Medina Fire	N/A
Brunswick Fire	10,000
Wadsworth Fire	11,000
Hinkley Fire	1,000
Brunswick Hills Fire	N/A
Spencer Fire	400
Stark County	
Louisville Fire	3,600
Alliance Fire	N/A
Lexington Township Fire	N/A
Bethlehem Township Fire	N/A
Massillon Fire	N/A
Perry Township Fire	N/A
Greentown Fire	5,000
North Canton Fire	6,099
Brewster Fire	2,500
Beach City Fire	3,500
Unknown	N/A
East Sparta Vol. Fire	3,000
City of Canton	45,000
Holmes County	
Holmes District #1	2,121

Wayne County	Do You Cover Any Area Under A Contract
Rittman EMS	Yes
Central Fire	Yes
Chippewa Township Fire	No
Wooster Township Fire	Yes
New Pittsburgh Fire	Yes (Private Company)
Town & Country Fire District	No
Apple Creek Fire	No
Orrville Fire	Yes
Sterling Fire District	No
Summit County	
Twinsburg Fire	Yes
Cuyahoga Falls Fire	Yes
Ashland County	
Polk-Jackson-Perry Fire	No
Ashland Fire	Yes
Loudonville Fire	Yes
Medina County	
Valley City Fire	No
Lafayette Township Fire	No
Medina Fire	Yes
Brunswick Fire	No
Wadsworth Fire	Yes
Hinkley Fire	No
Brunswick Hills Fire	No
Spencer Fire	Yes
Stark County	
Louisville Fire	No
Alliance Fire	No
Lexington Township Fire	Yes
Bethlehem Township Fire	No
Massillon Fire	No
Perry Township Fire	No
Greentown Fire	No
North Canton Fire	No
Brewster Fire	Yes
Beach City Fire	Yes
Unknown	Yes
East Sparta Vol. Fire	Yes
City of Canton	No
Holmes County	
Holmes District #1	Yes

Wayne County	Population of the Primary Service Area
Rittman EMS	6,195
Central Fire	15,100
Chippewa Township Fire	12,000
Wooster Township Fire	5,300
New Pittsburgh Fire	4500
Town & Country Fire District	8,050
Apple Creek Fire	6,800
Orrville Fire	8,500
Sterling Fire District	2,400
Summit County	
Twinsburg Fire	17,006
Cuyahoga Falls Fire	10,000
Ashland County	
Polk-Jackson-Perry Fire	5,000
Ashland Fire	22,000
Loudonville Fire	2,800
Medina County	
Valley City Fire	4,761
Lafayette Township Fire	7,000
Medina Fire	26,487
Brunswick Fire	36,000
Wadsworth Fire	18,437
Hinkley Fire	7,000
Brunswick Hills Fire	6,200
Spencer Fire	3,800
Stark County	
Louisville Fire	9,000
Alliance Fire	23,000
Lexington Township Fire	64
Bethlehem Township Fire	5,000
Massillon Fire	31,325
Perry Township Fire	29,867
Greentown Fire	15,000
North Canton Fire	16,300
Brewster Fire	2,400
Beach City Fire	3,200
Unknown	4,000
East Sparta Vol. Fire	3,500
City of Canton	81,000
Holmes County	
Holmes District #1	10,000

Wayne County	Square Miles of the Primary Area
Rittman EMS	6
Central Fire	51
Chippewa Township Fire	26
Wooster Township Fire	21
New Pittsburgh Fire	63.9
Town & Country Fire District	70
Apple Creek Fire	37.5
Orrville Fire	4
Sterling Fire District	22
Summit County	
Twinsburg Fire	13.8
Cuyahoga Falls Fire	5
Ashland County	
Polk-Jackson-Perry Fire	45
Ashland Fire	10.7
Loudonville Fire	5
Medina County	
Valley City Fire	25
Lafayette Township Fire	23
Medina Fire	11.32
Brunswick Fire	12.5
Wadsworth Fire	17.3
Hinkley Fire	25
Brunswick Hills Fire	12.5
Spencer Fire	25
Stark County	
Louisville Fire	6.1
Alliance Fire	8
Lexington Township Fire	1
Bethlehem Township Fire	36
Massillon Fire	18.79
Perry Township Fire	24
Greentown Fire	12
North Canton Fire	5.6
Brewster Fire	6
Beach City Fire	2
Unknown	5
East Sparta Vol. Fire	54
City of Canton	25
Holmes County	
Holmes District #1	90

Wayne County	Number of Career Personnel
Rittman EMS	1
Central Fire	2
Chippewa Township Fire	1
Wooster Township Fire	5
New Pittsburgh Fire	0
Town & Country Fire District	1
Apple Creek Fire	0
Orrville Fire	1
Sterling Fire District	0
Summit County	
Twinsburg Fire	33
Cuyahoga Falls Fire	84
Ashland County	
Polk-Jackson-Perry Fire	0
Ashland Fire	35
Loudonville Fire	3
Medina County	
Valley City Fire	1
Lafayette Township Fire	1
Medina Fire	3
Brunswick Fire	26
Wadsworth Fire	15
Hinkley Fire	0
Brunswick Hills Fire	0
Spencer Fire	0
Stark County	
Louisville Fire	0
Alliance Fire	30
Lexington Township Fire	0
Bethlehem Township Fire	0
Massillon Fire	48
Perry Township Fire	8
Greentown Fire	0
North Canton Fire	13
Brewster Fire	0
Beach City Fire	0
Unknown	0
East Sparta Vol. Fire	0
City of Canton	164
Holmes County	
Holmes District #1	2

Wayne County	Number of Part-Time Personnel
Rittman EMS	6
Central Fire	9
Chippewa Township Fire	45
Wooster Township Fire	0
New Pittsburgh Fire	0
Town & Country Fire District	2
Apple Creek Fire	0
Orrville Fire	0
Sterling Fire District	0
Summit County	
Twinsburg Fire	25
Cuyahoga Falls Fire	0
Ashland County	
Polk-Jackson-Perry Fire	0
Ashland Fire	0
Loudonville Fire	0
Medina County	
Valley City Fire	45
Lafayette Township Fire	0
Medina Fire	2
Brunswick Fire	4
Wadsworth Fire	47
Hinkley Fire	0
Brunswick Hills Fire	0
Spencer Fire	1
Stark County	
Louisville Fire	25
Alliance Fire	0
Lexington Township Fire	2
Bethlehem Township Fire	0
Massillon Fire	0
Perry Township Fire	0
Greentown Fire	30
North Canton Fire	52
Brewster Fire	6
Beach City Fire	0
Unknown	1
East Sparta Vol. Fire	0
City of Canton	0
Holmes County	
Holmes District #1	24

Wayne County	Number of Volunteer/POC Personnel
Rittman EMS	26
Central Fire	30
Chippewa Township Fire	0
Wooster Township Fire	28
New Pittsburgh Fire	29
Town & Country Fire District	38
Apple Creek Fire	42
Orrville Fire	39
Sterling Fire District	25
Summit County	
Twinsburg Fire	0
Cuyahoga Falls Fire	0
Ashland County	
Polk-Jackson-Perry Fire	30
Ashland Fire	0
Loudonville Fire	22
Medina County	
Valley City Fire	0
Lafayette Township Fire	47
Medina Fire	37
Brunswick Fire	0
Wadsworth Fire	0
Hinkley Fire	34
Brunswick Hills Fire	25
Spencer Fire	24
Stark County	
Louisville Fire	0
Alliance Fire	0
Lexington Township Fire	30
Bethlehem Township Fire	25
Massillon Fire	0
Perry Township Fire	63
Greentown Fire	30
North Canton Fire	0
Brewster Fire	31
Beach City Fire	22
Unknown	26
East Sparta Vol. Fire	No Response
City of Canton	0
Holmes County	
Holmes District #1	23

Wayne County	Total Operating Budget 2005
Rittman EMS	$337,000
Central Fire	$389,268
Chippewa Township Fire	$475,000
Wooster Township Fire	$550,000
New Pittsburgh Fire	$72,500
Town & Country Fire District	$338,500
Apple Creek Fire	$115,000
Orrville Fire	$426,955
Sterling Fire District	$85,000
Summit County	
Twinsburg Fire	$4,200,000
Cuyahoga Falls Fire	$8,600,000
Ashland County	
Polk-Jackson-Perry Fire	$150,000
Ashland Fire	$2,500,000
Loudonville Fire	$212,000
Medina County	
Valley City Fire	$316,272
Lafayette Township Fire	$400,000
Medina Fire	$868,000
Brunswick Fire	$2,900,000
Wadsworth Fire	$2,200,000
Hinkley Fire	$270,000
Brunswick Hills Fire	$650,000
Spencer Fire	$250,000
Stark County	
Louisville Fire	$495,000
Alliance Fire	$2,500,000
Lexington Township Fire	$245,000
Bethlehem Township Fire	$75,000
Massillon Fire	$3,400,000
Perry Township Fire	$1,404,164
Greentown Fire	$850,000
North Canton Fire	$1,790,000
Brewster Fire	$180,000
Beach City Fire	$109,000
Unknown	$140,000
East Sparta Vol. Fire	$100,000
City of Canton	$13,000,000
Holmes County	
Holmes District #1	$900,000

Wayne County	How Are Operations Supported
Rittman EMS	Levy, Other
Central Fire	Levy
Chippewa Township Fire	Levy
Wooster Township Fire	General Fund, Levy, Other
New Pittsburgh Fire	Other (Contracts)
Town & Country Fire District	Levy
Apple Creek Fire	Levy
Orrville Fire	General Fund
Sterling Fire District	Levy
Summit County	
Twinsburg Fire	General Fund
Cuyahoga Falls Fire	General Fund, Levy, Other
Ashland County	
Polk-Jackson-Perry Fire	Levy
Ashland Fire	General Fund
Loudonville Fire	General Fund, Levy, Income Tax
Medina County	
Valley City Fire	Levy
Lafayette Township Fire	Levy
Medina Fire	Income Tax
Brunswick Fire	Income Tax, Other
Wadsworth Fire	General Fund, Levy
Hinkley Fire	Levy
Brunswick Hills Fire	Levy
Spencer Fire	Levy
Stark County	
Louisville Fire	General Fund, Income Tax
Alliance Fire	General Fund
Lexington Township Fire	Levy
Bethlehem Township Fire	Levy
Massillon Fire	General Fund
Perry Township Fire	Levy
Greentown Fire	Levy
North Canton Fire	General Fund, Levy
Brewster Fire	Levy
Beach City Fire	Levy, Other
Unknown	General Fund
East Sparta Vol. Fire	Other
City of Canton	General Fund
Holmes County	
Holmes District #1	Levy

Wayne County	Annual Payroll Expense 2005
Rittman EMS	$227,800
Central Fire	$151,000
Chippewa Township Fire	$120,000
Wooster Township Fire	$310,000
New Pittsburgh Fire	$0
Town & Country Fire District	$93,000
Apple Creek Fire	$0
Orrville Fire	$319,775
Sterling Fire District	$0
Summit County	
Twinsburg Fire	$3,200,000
Cuyahoga Falls Fire	$6,500,000
Ashland County	
Polk-Jackson-Perry Fire	$40,000
Ashland Fire	$2,400,000
Loudonville Fire	$140,000
Medina County	
Valley City Fire	$202,077
Lafayette Township Fire	$100,000
Medina Fire	$576,014
Brunswick Fire	$2,500,000
Wadsworth Fire	$1,400,000
Hinkley Fire	$150,000
Brunswick Hills Fire	$290,000
Spencer Fire	Unknown
Stark County	
Louisville Fire	$340,000
Alliance Fire	$2,000,000
Lexington Township Fire	N/A
Bethlehem Township Fire	$0
Massillon Fire	$3,325,000
Perry Township Fire	$800,000
Greentown Fire	$500,000
North Canton Fire	$1,173,000
Brewster Fire	$80,000
Beach City Fire	$25,000
Unknown	$70,000
East Sparta Vol. Fire	$0
City of Canton	$9,000,000
Holmes County	
Holmes District #1	$286,472

Wayne County	On-the-Job Injuries (Past 2 Years)
Rittman EMS	2
Central Fire	5
Chippewa Township Fire	2
Wooster Township Fire	6
New Pittsburgh Fire	0
Town & Country Fire District	0
Apple Creek Fire	0
Orrville Fire	3
Sterling Fire District	2
Summit County	
Twinsburg Fire	10
Cuyahoga Falls Fire	10
Ashland County	
Polk-Jackson-Perry Fire	2
Ashland Fire	2
Loudonville Fire	3
Medina County	
Valley City Fire	0
Lafayette Township Fire	3
Medina Fire	2
Brunswick Fire	2
Wadsworth Fire	3
Hinkley Fire	3
Brunswick Hills Fire	1
Spencer Fire	2
Stark County	
Louisville Fire	0
Alliance Fire	6
Lexington Township Fire	2
Bethlehem Township Fire	0
Massillon Fire	16
Perry Township Fire	8
Greentown Fire	4
North Canton Fire	0
Brewster Fire	1
Beach City Fire	3
Unknown	0
East Sparta Vol. Fire	2
City of Canton	200*
Holmes County	
Holmes District #1	4

*Needs validation

Wayne County	Average Number of Personnel On Duty
Rittman EMS	3
Central Fire	3
Chippewa Township Fire	2
Wooster Township Fire	3
New Pittsburgh Fire	8
Town & Country Fire District	3
Apple Creek Fire	N/A
Orrville Fire	1
Sterling Fire District	0
Summit County	
Twinsburg Fire	8
Cuyahoga Falls Fire	21
Ashland County	
Polk-Jackson-Perry Fire	10
Ashland Fire	8
Loudonville Fire	1
Medina County	
Valley City Fire	3
Lafayette Township Fire	1
Medina Fire	3
Brunswick Fire	6
Wadsworth Fire	8
Hinkley Fire	0
Brunswick Hills Fire	3
Spencer Fire	0
Stark County	
Louisville Fire	2
Alliance Fire	7
Lexington Township Fire	15
Bethlehem Township Fire	6
Massillon Fire	10
Perry Township Fire	2
Greentown Fire	4
North Canton Fire	7
Brewster Fire	1
Beach City Fire	10
Unknown	12
East Sparta Vol. Fire	0
City of Canton	37
Holmes County	
Holmes District #1	2

Wayne County	Annual Training Hours by Department
Rittman EMS	860.5
Central Fire	84
Chippewa Township Fire	110
Wooster Township Fire	2,500
New Pittsburgh Fire	48
Town & Country Fire District	168
Apple Creek Fire	1,300
Orrville Fire	3,500
Sterling Fire District	480
Summit County	
Twinsburg Fire	3,000
Cuyahoga Falls Fire	10,000
Ashland County	
Polk-Jackson-Perry Fire	40
Ashland Fire	4,500
Loudonville Fire	100
Medina County	
Valley City Fire	72
Lafayette Township Fire	120
Medina Fire	120
Brunswick Fire	4,800
Wadsworth Fire	110
Hinkley Fire	100
Brunswick Hills Fire	3,500
Spencer Fire	105
Stark County	
Louisville Fire	72
Alliance Fire	4,500
Lexington Township Fire	N/A
Bethlehem Township Fire	200
Massillon Fire	N/A
Perry Township Fire	80
Greentown Fire	1,800
North Canton Fire	595
Brewster Fire	150
Beach City Fire	80
Unknown	1,500
East Sparta Vol. Fire	50
City of Canton	200
Holmes County	
Holmes District #1	384

Wayne County	Number of Citizens Trained in CPR (2005)
Rittman EMS	150
Central Fire	0
Chippewa Township Fire	250
Wooster Township Fire	0
New Pittsburgh Fire	0
Town & Country Fire District	50
Apple Creek Fire	0
Orrville Fire	0
Sterling Fire District	25
Summit County	
Twinsburg Fire	300
Cuyahoga Falls Fire	300
Ashland County	
Polk-Jackson-Perry Fire	0
Ashland Fire	180
Loudonville Fire	139
Medina County	
Valley City Fire	320
Lafayette Township Fire	0
Medina Fire	0
Brunswick Fire	59
Wadsworth Fire	200
Hinkley Fire	12
Brunswick Hills Fire	N/A
Spencer Fire	105
Stark County	
Louisville Fire	100
Alliance Fire	0
Lexington Township Fire	0
Bethlehem Township Fire	10
Massillon Fire	N/A
Perry Township Fire	60
Greentown Fire	115
North Canton Fire	205
Brewster Fire	N/A
Beach City Fire	0
Unknown	0
East Sparta Vol. Fire	0
City of Canton	100
Holmes County	
Holmes District #1	40

Wayne County	**Highest Level of EMS Care Provided**
Rittman EMS	Paramedic
Central Fire	Paramedic
Chippewa Township Fire	Paramedic
Wooster Township Fire	Paramedic
New Pittsburgh Fire	Intermediate
Town & Country Fire District	Intermediate
Apple Creek Fire	Paramedic
Orrville Fire	Paramedic
Sterling Fire District	Paramedic
Summit County	
Twinsburg Fire	Paramedic
Cuyahoga Falls Fire	Paramedic
Ashland County	
Polk-Jackson-Perry Fire	Intermediate
Ashland Fire	Paramedic
Loudonville Fire	Paramedic
Medina County	
Valley City Fire	Paramedic
Lafayette Township Fire	Paramedic
Medina Fire	None
Brunswick Fire	Paramedic
Wadsworth Fire	Paramedic
Hinkley Fire	Paramedic
Brunswick Hills Fire	Paramedic
Spencer Fire	Paramedic
Stark County	
Louisville Fire	Paramedic
Alliance Fire	First Responder
Lexington Township Fire	First Responder
Bethlehem Township Fire	Paramedic
Massillon Fire	Paramedic
Perry Township Fire	Paramedic
Greentown Fire	Paramedic
North Canton Fire	Paramedic
Brewster Fire	Paramedic
Beach City Fire	Paramedic
Unknown	None
East Sparta Vol. Fire	None
City of Canton	Paramedic
Holmes County	
Holmes District #1	Paramedic

Wayne County	EMS Calls in 2005
Rittman EMS	735
Central Fire	404
Chippewa Township Fire	567
Wooster Township Fire	580
New Pittsburgh Fire	187
Town & Country Fire District	293
Apple Creek Fire	271
Orrville Fire	302
Sterling Fire District	139
Summit County	
Twinsburg Fire	1,827
Cuyahoga Falls Fire	5,850
Ashland County	
Polk-Jackson-Perry Fire	200
Ashland Fire	3,049
Loudonville Fire	660
Medina County	
Valley City Fire	414
Lafayette Township Fire	327
Medina Fire	N/A
Brunswick Fire	2,150
Wadsworth Fire	1,728
Hinkley Fire	361
Brunswick Hills Fire	412
Spencer Fire	125
Stark County	
Louisville Fire	780
Alliance Fire	141
Lexington Township Fire	0
Bethlehem Township Fire	296
Massillon Fire	2,933
Perry Township Fire	1,825
Greentown Fire	405
North Canton Fire	1,824
Brewster Fire	N/A
Beach City Fire	132
Unknown	0
East Sparta Vol. Fire	0
City of Canton	9,900
Holmes County	
Holmes District #1	638

Wayne County	EMS Transports in 2005
Rittman EMS	450
Central Fire	315
Chippewa Township Fire	475
Wooster Township Fire	560
New Pittsburgh Fire	148
Town & Country Fire District	231
Apple Creek Fire	260
Orrville Fire	245
Sterling Fire District	95
Summit County	
Twinsburg Fire	1,284
Cuyahoga Falls Fire	4,506
Ashland County	
Polk-Jackson-Perry Fire	175
Ashland Fire	2,473
Loudonville Fire	430
Medina County	
Valley City Fire	361
Lafayette Township Fire	288
Medina Fire	N/A
Brunswick Fire	1,682
Wadsworth Fire	1,282
Hinkley Fire	279
Brunswick Hills Fire	430
Spencer Fire	105
Stark County	
Louisville Fire	586
Alliance Fire	0
Lexington Township Fire	0
Bethlehem Township Fire	238
Massillon Fire	2,799
Perry Township Fire	1,357
Greentown Fire	322
North Canton Fire	1,091
Brewster Fire	N/A
Beach City Fire	127
Unknown	0
East Sparta Vol. Fire	0
City of Canton	7,500
Holmes County	
Holmes District #1	600

Wayne County	Number of EMS Transport Vehicles
Rittman EMS	2
Central Fire	2
Chippewa Township Fire	3
Wooster Township Fire	2
New Pittsburgh Fire	1
Town & Country Fire District	2
Apple Creek Fire	2
Orrville Fire	2
Sterling Fire District	2
Summit County	
Twinsburg Fire	3
Cuyahoga Falls Fire	8
Ashland County	
Polk-Jackson-Perry Fire	2
Ashland Fire	4
Loudonville Fire	2
Medina County	
Valley City Fire	2
Lafayette Township Fire	2
Medina Fire	0
Brunswick Fire	4
Wadsworth Fire	4
Hinkley Fire	2
Brunswick Hills Fire	2
Spencer Fire	1
Stark County	
Louisville Fire	2
Alliance Fire	0
Lexington Township Fire	0
Bethlehem Township Fire	2
Massillon Fire	Private Service For Transport
Perry Township Fire	5
Greentown Fire	2
North Canton Fire	4
Brewster Fire	2
Beach City Fire	2
Unknown	0
East Sparta Vol. Fire	0
City of Canton	4
Holmes County	
Holmes District #1	2

Wayne County	Average Response Time (2005) From Dispatch to Arrival
Rittman EMS	5.70
Central Fire	5.15
Chippewa Township Fire	5.41
Wooster Township Fire	6.50
New Pittsburgh Fire	11.30
Town & Country Fire District	9.00
Apple Creek Fire	5.16
Orrville Fire	7.00
Sterling Fire District	7.23
Summit County	
Twinsburg Fire	4.01
Cuyahoga Falls Fire	3.80
Ashland County	
Polk-Jackson-Perry Fire	10.00
Ashland Fire	4.75
Loudonville Fire	5.50
Medina County	
Valley City Fire	8.00
Lafayette Township Fire	11.36
Medina Fire	N/A
Brunswick Fire	4.33
Wadsworth Fire	3.88
Hinkley Fire	4.00
Brunswick Hills Fire	6.35
Spencer Fire	5.33
Stark County	
Louisville Fire	4.00
Alliance Fire	4.00
Lexington Township Fire	N/A
Bethlehem Township Fire	8.00
Massillon Fire	3.83
Perry Township Fire	4.50
Greentown Fire	3.70
North Canton Fire	5.00
Brewster Fire	N/A
Beach City Fire	7.00
Unknown	N/A
East Sparta Vol. Fire	N/A
City of Canton	4.06
Holmes County	
Holmes District #1	3.00

Wayne County	Number of Cardiac Arrest Patients Delivered with A Pulse
Rittman EMS	0
Central Fire	1
Chippewa Township Fire	1
Wooster Township Fire	N/A
New Pittsburgh Fire	N/A
Town & Country Fire District	0
Apple Creek Fire	N/A
Orrville Fire	50*
Sterling Fire District	0
Summit County	
Twinsburg Fire	3
Cuyahoga Falls Fire	5
Ashland County	
Polk-Jackson-Perry Fire	0
Ashland Fire	N/A
Loudonville Fire	0
Medina County	
Valley City Fire	1
Lafayette Township Fire	3
Medina Fire	N/A
Brunswick Fire	1
Wadsworth Fire	N/A
Hinkley Fire	0
Brunswick Hills Fire	N/A
Spencer Fire	1
Stark County	
Louisville Fire	N/A
Alliance Fire	0
Lexington Township Fire	0
Bethlehem Township Fire	N/A
Massillon Fire	N/A
Perry Township Fire	2
Greentown Fire	2
North Canton Fire	N/A
Brewster Fire	N/A
Beach City Fire	2
Unknown	N/A
East Sparta Vol. Fire	0
City of Canton	Unknown
Holmes County	
Holmes District #1	2

*Needs validation

Wayne County	EMS Collection Rate (If Billed)
Rittman EMS	83.00%
Central Fire	62.60%
Chippewa Township Fire	No
Wooster Township Fire	60.00%
New Pittsburgh Fire	No
Town & Country Fire District	30.00%
Apple Creek Fire	56.00%
Orrville Fire	70.60%
Sterling Fire District	65.00%
Summit County	
Twinsburg Fire	60.00%
Cuyahoga Falls Fire	80.00%
Ashland County	
Polk-Jackson-Perry Fire	85.00%
Ashland Fire	80.00%
Loudonville Fire	70.00%
Medina County	
Valley City Fire	Yes, Unknown %
Lafayette Township Fire	60.00%
Medina Fire	No
Brunswick Fire	54.00%
Wadsworth Fire	86.00%
Hinkley Fire	75.00%
Brunswick Hills Fire	No
Spencer Fire	60.00%
Stark County	
Louisville Fire	80.00%
Alliance Fire	No
Lexington Township Fire	No
Bethlehem Township Fire	50.00%
Massillon Fire	No
Perry Township Fire	82.00%
Greentown Fire	74.00%
North Canton Fire	90.00%
Brewster Fire	Not Provided
Beach City Fire	75.00%
Unknown	Not Provided
East Sparta Vol. Fire	No
City of Canton	88.00%
Holmes County	
Holmes District #1	Yes, Unknown. %

APPENDIX 5– SUMMARY OF CUSTOMER SURVEYS

WAS YOUR "911" CALL HANDLED PROMPTLY, IN A PROFESSIONAL MANNER?				
Yes	No	Did Not Use 911	No Response	
48	1	4	4	
How was our response time?				
About Right	Too Slow	Other	No Response	
41	0	13	2	
Other: "Perfect" x 2, "Excellent" x 4, "Don't Know", "Great", "Very Prompt"				
"Very Good" x 2, "About 15 Min", "Good"				
How would you rate our crew's professionalism and courtesy?				
Excellent	Good	Fair	Poor	No Response
49	7	0	0	1
How do you feel your emergency was handled?				
Excellent	Good	Fair	Poor	No Response
46	10	0	0	1
Please rate your overall satisfaction with the service that Rittman EMS provided to you.				
Excellent	Good	Fair	Poor	No Response
49	7	0	0	1
Number of Surveys Sent Out: 168				
Number of Surveys Returned Undelivered: 9				
Number of Surveys Potentially Received: 159				

Number of Responses Returned (As of 5/30/2006): 57		
Percentage Returned: 35.84%		