LifeNet

2016 Annual Report on
AMBULANCE SERVICE

LifeNet

EMERGENCY MEDICAL ● SERVICES

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Contents

LifeNet, Inc. is pleased to submit this report on ambulance service to the City of Hot Springs.

The report covers January 1, 2016 through December 31, 2016.

In addition to reporting on the items required in the agreement, we have included information related to contract performance. The report is assembled by sections:

> Outcomes
> Enhancements
> Response Time Performance
> Clinical Performance

Executive Summary

During the reporting period:

Within the city limits LifeNet responded to 8,175 emergency requests for ambulance service and 2,511 requests for non-emergency ambulance service.

95% of the time we responded to Life-Threatening Emergency calls within 8:59

96% of the time we responded to Non-Life-Threatening Emergency Calls within 10:59

99% of the time we responded to Non-Life-Threatening calls within 20:59

As a community-driven organization, our core values for treating our patients, customers, stakeholders, and each other with compassion and honesty complement the City's focus on integrity and cooperation. As a not-for-profit firm, we are free to concentrate on our bottom line—patient care.

LifeNet has proven our ability to consistently provide on-time ambulance services whenever a resident or visitor calls for help. For the past 135 months LifeNet has met or exceeded the contractual response-time requirement. This clearly validates LifeNet's ongoing commitment to response-time compliance from the inception of our Hot Springs contract in October 2005.

In October 2015, LifeNet was inspected by three national EMS experts. That evaluation resulted in national re-accreditation from the Commission on Accreditation of Ambulance Services (CAAS) in December 2015. LifeNet is one of the first ambulance services in Arkansas and the eightieth ambulance service in the nation to successfully complete the voluntary review process. This gold standard accreditation exemplifies our continued commitment to the patients and the communities we are privileged to serve. We will continue to maintain the high standards necessary for continued accreditation. Regular CAAS oversight, including onsite reviews, provides the City an additional measure of assurance regarding the quality of LifeNet's operation.

Outcomes

Nature of Complaints

The majority of ambulance transports may be grouped into two categories: medical and trauma. Of the medical complaints, "sick person" and breathing-related complaints are the two leading reasons for ambulance service.

Cardiovascular emergencies prompted almost 12% of the requests for ambulance service. Included in these types of complaints are individuals with chest pain, a CVA or stroke, cardiac arrest, and heart problems.

Breathing problems accounted for more than 9% of the requests for ambulance service.

Almost twenty percent (20%) of emergency calls in the City were for falls and traffic accidents.

City Response Zone

Nature	Hot Springs 1	Hot Springs 2	Hot Springs 3	Hot Springs 4	Hot Springs 5	Hot Springs 6	Grand Total
<None>	4	8	4		2	3	21
Abdominal Pain / Problems	60	55	57	26	57	30	285
Allergies / Envenomations	12	13	13	7	10	5	60
Amputation	1	2		1			4
Animal Bites / Attacks	2	5	2		3	2	14
Assault / Sexual Assault	39	110	60	32	54	11	306
Back Pain	24	31	19	14	24	13	125
Breathing Problems	195	222	110	128	225	118	996
Burns / Explosion	3	5	1	3	1		13
Carbon Monoxide/Inhalation / HazMat / CBRN	1	1	2	1	1		6
Cardiac or Resp Arrest / Death	29	10	18	15	27	26	125
Chest Pain	120	102	75	109	182	83	671
Choking	6	5	7	6	4	3	31
Convulsions / Seizures	82	110	51	63	89	37	432
Diabetic Problems	58	40	17	40	45	15	215
Drowning/Diving / SCUBA Accident	1		1		1		3
Electrocution / Lightning	2	1		2		1	6
Eye Problems / Injuries			1	1	3	1	6
Fall(s)	181	152	178	239	311	260	1321
Headache	8	4	3	3	7	9	34
Heart Problems / AICD	35	31	32	52	53	44	247
Heat/Cold Exposure	1	4	3	4	15		27
Hemorrhage / Lacerations	42	73	37	47	76	43	318
Inaccessible Incident / Other Entrapments		1				1	2
Overdose / Poisoning	41	39	33	28	29	10	180
Pandemic / Epidemic / Outbreak					1		1
Pregnancy / Childbirth / Miscarriage	14	10	7	9	6	2	48
Psychiatric / Abnormal Behavior / Suicide Attempt	126	204	126	96	146	91	789
Psychiatric / Suicide Attempt	4	5	5	4	4	3	25
Sick Person	385	361	218	233	543	309	2049
Stab / Gunshot / Penetrating Trauma	6	18	13	4	5	2	48
Stroke/CVA	29	33	16	32	64	38	212
Traffic / Transportation Incidents	66	120	110	151	198	110	755
Transfer / Interfacility / Palliative Care	2				2	2	6
Traumatic Injuries	23	28	23	25	45	18	162
Unconscious/Fainting	67	106	63	111	170	69	586
Unknown Problem	64	138	82	80	129	62	555
Grand Total	**1733**	**2047**	**1387**	**1566**	**2532**	**1421**	**10686**

Hour of Day

LifeNet collects historical call volume data, response time data, and call location data to periodically review the scheduling plan for ambulance crews and post locations. The busiest hour of the day for responses in 2016 was during the 10:00 am hour, while the slowest part of the day is 4:00 am.

Responses by Hour of Day
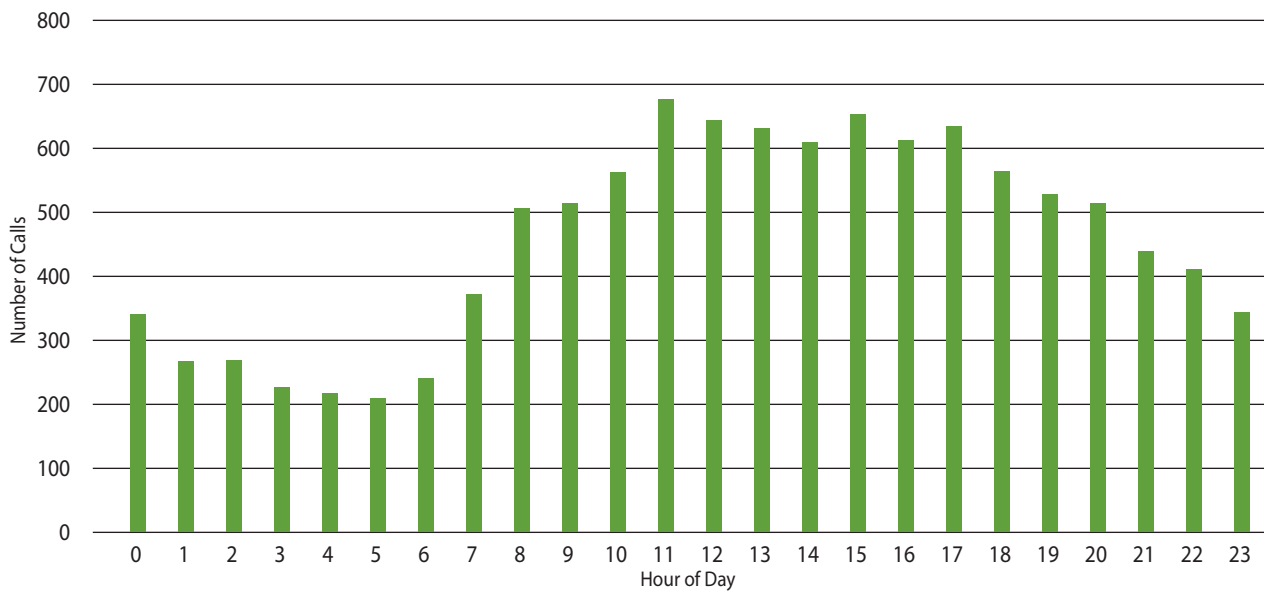
Enhancements

LifeNet has enacted several important enhancements to our services within this period.

King Vision

In October 2016 we added the King Vision Video Laryngoscope to our Supervisor Unit. The King Vision is a portable video laryngoscope featuring a durable, reusable display paired with a disposable blade. The full-color, non-glare and anti-scratch display enables high performance visualization capabilities for both difficult and routine intubations. It is ergonomically designed with an integrated blade/handle for maximum control and minimal lifting of soft tissue and impact on teeth. The lightweight and battery-operated device can use a channeled or standard disposable blade for guided or standard intubations.
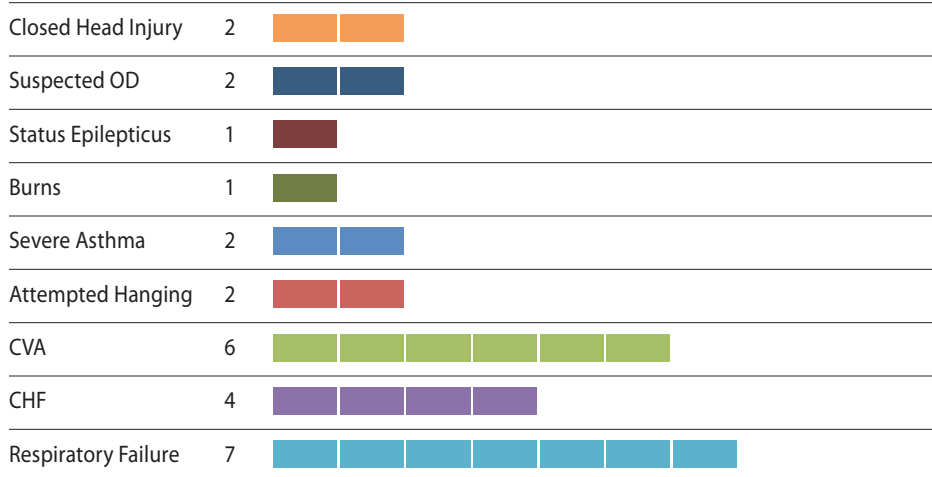
Baker Dispatch Console

In March 2016, LifeNet installed a new Baker Console System valued at $261,000. This console system replaced all hardware and software infrastructure used to receive phone calls as well as handle all radio transmissions. This system replaced the legacy 911 system that had been used to receive 911 calls as well as the previous radio system used to communicate call information to ambulances and volunteer first responders.

The previous systems were not integrated and therefore required the use of multiple keyboards, screens, microphones, etc. The Baker Console is fully integrated into one system, which allows call takers and dispatchers to use a single system for all their communications, vastly improving their efficiency and ability to multitask.

Rapid Sequence Intubation (RSI)

In 2016 we expanded our RSI program beyond Operations Managers to include the Field Training Officers and Operations Supervisor staff. RSI allows our clinicians to support and control a patient's airway and respiration through the use of medication-facilitated intubation. This enables our teams to secure the airway and breathing of critically ill or injured victims who previously may not have had access to this life-saving measure outside of the hospital setting. RSI is a skill that requires State Health Department authorization and requires intense participation and case review by our medical director, Dr. Karl Wagenhauser. In 2016, there were 27 patients that required the use of this advanced skill. The chart below illustrates the patient conditions that warranted the use of the RSI procedure.

During the last year, we added four new ambulances in Hot Springs. Ambulance 540 was remounted onto a new Chevy 3500 chassis. During the remount process the ambulance module also is completely refurbished, including new flooring, upholstery, and lighting. Ambulances 542 - 544 are all new Frazier units on Chevy 3500 chassis. These units are all in service now and we expect each unit will remain in service for approximately 5 years.

Indications for RSI

Condition	Count
Closed Head Injury	2
Suspected OD	2
Status Epilepticus	1
Burns	1
Severe Asthma	2
Attempted Hanging	2
CVA	6
CHF	4
Respiratory Failure	7

New Fleet Replacements

The Fleet Department's primary focus is to ensure crew safety and vehicle reliability. The Fleet staff is responsible for the entire complement of vehicles including ambulances, supervisor, and administration vehicles. Our fleet manager has more than ten years of experience and is ASE (Automotive Service Excellence) certified.

In 2016, LifeNet retrofitted an ambulance with equipment specifically designed to assist in the care of obese patients. The ambulance is equipped with a stretcher that is rated to carry up to 1,600 pounds as well as a winch system and ramps to aid in loading and unloading patients into the ambulance. This addition to the fleet will significantly improve the safety and comfort of the patients as well as reduce the potential for injuries to crew members.

Response Time Performance

Background

Response Time is defined as the interval between the moment that the callback number, location, and priority determination/chief complaint are first made known to LifeNet's dispatch center (Clock Start) at the moment the first ambulance Arrival-at-Accident/Incident Location (Clock End). All response times are measured in seconds, not whole minutes.

Using system status management, LifeNet aligns the locations of available ambulances to best serve the population and meet response time criteria. We use three physical locations to stage ambulances between calls to best serve customers within the city limits of Hot Springs, Arkansas, including incorporated areas. These include:

—— 220 Ouachita Ave.   —— 3610 Central Ave.   —— 1550 Albert Pike Rd.

All locations house at least one unit, unless on a call and, at times, two or more units when the system is temporarily slow. The Ouachita station also houses the reserve fleet units. These are positioned at this location so that certified management and administrative staff can more rapidly deploy extra units when system demand exceeds planned resources.

Classifications

The City currently designates three response time classifications with which LifeNet must comply to meet the specified response times. The designation of an assignment is accomplished by presumptive prioritization in accordance with protocols. LifeNet is deemed to be in compliance if 90% or more of all responses measured monthly meet the specified response time criteria.

- Life Threatening Emergency Calls will have a response time of 8 minutes and 59 seconds.
- Non-Life Threatening Emergency Calls will have a response time of 10 minutes and 59 seconds.
- Non-Life Threatening Non-Emergency Calls will have a response time of 20 minutes and 59 seconds.

The following definitions and protocols are employed for purposes of response time measurement:

Call Classification

For purposes of response time measurement, the applicable standard is based on each request's presumptive run code classification (i.e., Emergency Response or Immediate Response) as established at the time the call is dispatched by a person trained in the use of and correctly employing Medical Priority Dispatch Protocols (MPDS) proposed by the Medical Director. (Retrospective classification of priority code does not affect measurement of response time compliance.)

Percentage of Responses by Call Classification

	Priority 1 Life Threatening Emergencies	Priority 2 Non-Life Threatening Emergencies	Priority 3 Non-Life Threatening Non Emergencies
January	39%	24%	37%
February	43%	24%	33%
March	39%	23%	38%
April	47%	20%	33%
May	45%	23%	32%
June	44%	22%	34%
July	41%	22%	37%
August	39%	24%	37%
September	39%	23%	38%
October	37%	22%	41%
November	41%	25%	34%
December	42%	26%	32%
Average	41%	23%	36%

Response Time Calculations

LifeNet maintains mechanisms for reserve production capacity to increase production should temporary system overload persist. However, it is understood that, from time to time, unusual factors beyond LifeNet's reasonable control affect the achievement of the specified response time standards. For purposes of determining compliance with the response time standards every request for ambulance service originating within the City is counted, except as follows:

> Responses not resulting in patient contact, unless the call was cancelled by the caller after expiration of the applicable response time standard.

No other causes of late response (e.g., equipment failures, traffic congestion, and vehicular accident regardless of origin, ambulance failures, dispatch errors, or inability to staff units) can serve to justify exemption from response time requirements.

In the current agreement, the City acknowledged that not all requests for ambulance service require lights and sirens. LifeNet uses MPDS to classify calls in a way to avoid the unnecessary use of lights and sirens responses. In these instances where lights and sirens are not used, the Response Time compliance is 20 minutes, 90% of the time.

“ Very professional but still got a laugh out of me. Excellent. ”

Survey Response #2247057

> " I like all the ambulance personnel. They are just great. "
>
> Survey Response #2240210

> " LifeNet is awesome. You should really break your arm or something. "
>
> Survey Response #2240195

In October 2005, the City's EMS Advisory Council adopted the following definitions:

Response Time Measurement – Clock Start
Emergency response times shall be measured via the CAD System from the moment of receipt at LifeNet's Communications Center of the 911 data transmission (i.e., location, callback number and priority determination/chief complaint), or, in the case of 7-digit access, the receipt of location, callback number and priority determination/chief complaint. In situations where the determination of the priority and chief complaint exceeds 120 seconds, the clock will have considered started at the moment that the callback number and location are first made known.

Response Time Measurement – Clock End
As a general rule for all types of calls, the response time clock shall be stopped upon Arrival At Incident Location of the first arriving ALS ambulance. In instances when the ambulance fails to report their Arrival At Incident Location, the time of the next communication with that ambulance will be used as the Arrival At Incident Location time. However, LifeNet may appeal such instances when it can document the actual arrival time through another means, including First Responder reports or communications tapes.

Upgrades, Downgrades, and Reassignments
From time to time, special circumstances may cause changes in priority determination.

Upgrades: if a Response is upgraded prior to Arrival At Incident Location (e.g., from Immediate Response to Emergency Response), LifeNet's compliance will be calculated based on the shorter of:

- Time elapsed from call receipt to time of upgrade plus the higher Response time standard, or the lower (i.e., Immediate Response) response time standard.

Downgrades: If a Response is downgraded prior to Arrival at incident location (e.g., from Emergency Response to Immediate Response), LifeNet's compliance and penalties will be calculated based on the time of receipt of the downgrade as follows:

- If the Response is downgraded after the original response time standard (i.e., Emergency Response) has elapsed, the Response will be recorded as a late Emergency Response, or if the Response is downgraded before the original response time standard has elapsed, the lower priority Response time standard (i.e., Immediate Response) will be applicable.

- All downgrades will be subject to protocols developed by the Medical Director. No 911 emergency call may be downgraded to a priority lower than Immediate.

Reassignment Enroute: if an ambulance is reassigned enroute prior to Arrival At Incident Location (e.g., to respond to a higher priority request), LifeNet's compliance will be calculated based on the response time standard applicable to the assigned priority of the initial Response. The response time clock will not stop until the arrival at incident location on the scene from which the ambulance was diverted.

Emergency Responses

The table below breaks down the emergency responses by month and call classification.

Response Time Reliability

The table below details the emergency response time reliability for each month during the reporting period.

Emergency Compliance by Month

Month	Priority 1 Life Threatening Emergencies	Priority 2 Non-Life Threatening Emergencies	Priority 3 Non-Life Threatening Non Emergencies
January	91.4%	93.3%	99.1%
February	93.6%	95.0%	99.6%
March	96.6%	96.2%	99.4%
April	95.7%	97.1%	99.7%
May	96.6%	95.9%	99.0%
June	93.3%	93.8%	99.7%
July	93.9%	94.3%	98.9%
August	92.2%	97.3%	100%
September	96.3%	97.4%	100%
October	95.6%	97.5%	99.5%
November	94.2%	96.3%	99.7%
December	96.0%	97.6%	99.7%
Average	94.8%	96.0%	99.5%

During 2016, LifeNet responded within 8:59 to 95% of the Priority 1 – Life Threatening Emergencies.

Clinical Performance

Sudden Cardiac Arrests (SCA)

Survival from SCA depends on the interval between the patient's collapse and the delivery of the first defibrillation (shock). This becomes remarkably time-dependent where minutes and even seconds will equal living, dying or becoming neurologically impaired due to lack of oxygen being sufficiently supplied to a patient's brain. Creating an optimal opportunity for a successful resuscitation includes very specific time-critical components; early recognition, early access to emergency medical services, early initiation of cardiopulmonary resuscitation (CPR), early access to defibrillation, and a timely response and superior skill from the community's EMS system.

According to the American Heart Association, clinical and epidemiological studies have confirmed two observations:

1. Almost every adult (over 90% in most studies) who survives sudden non-traumatic cardiac arrest was resuscitated from Ventricular Fibrillation (VF)
2. The success of defibrillation is remarkably time-dependent

The probability of defibrillating (shocking) someone back to a perfusing heart beat declines about 2% to 10% per minute, starting with the estimated probability of 70% to 80% survival at time zero. These depressing statistics mean that if we have not managed to shock a patient within 10 minutes from their collapse, the probability of surviving the event approaches zero. More recent studies are demonstrating that CPR prior to defibrillation can significantly improve the likelihood of defibrillation success.

Measuring Success – Utstein Style

Since 2005, LifeNet has classified all instances of SCA using the Utstein Style for uniform reporting of cardiac arrest. The Utstein Style was first proposed for emergency medical services in 1991 to provide a uniform method of collecting and reporting cardiac arrest statistics. By using many of the same quality improvement strategies, we are able to measure our success nationally as well as using the information to assist in planning and education.

Data is collected using information from pre-hospital Patient Care Reports (PCRs) prepared by the paramedic. In addition to the PCR, all paramedics complete a supplemental Utstein Style form to better capture important data relating to the SCA patient. Specific information from these documents is manually entered and recorded in a Utstein Style computer software program developed to provide information on bystander CPR, ECG rhythms and survival to discharge statistics.

The table opposite describes company-wide SCA responses and outcomes.

Company-wide SCA Responses and Outcomes

CRITERIA	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Non-Traumatic SCD	447	610	610	641	690	622	745	825	801	913	846
Resuscitations NOT Attempted	261 58%	388 64%	403 66%	446 70%	473 68%	436 70%	494 66%	529 64%	520 65%	593 65%	532 63%
Resuscitations Attempted	186 42%	222 36%	207 34%	195 30%	217 31%	186 30%	251 34%	296 36%	281 35%	320 35%	314 37%
Resuscitation Attempts Transported to Local ED	131 70%	154 69%	155 75%	141 72%	147 68%	131 70%	175 70%	206 70%	188 67%	211 66%	211 67%
Resuscitation Attempts that ended in Field Termination	55 30%	68 31%	52 25%	54 28%	70 33%	55 70%	76 30%	90 30%	93 33%	109 34%	103 33%
Resuscitation Attempts that achieved ROSC*	47 25%	67 30%	85 41%	75 38%	84 39%	70 38%	107 43%	116 39%	111 40%	132 41%	131 42%
Total Resuscitation Attempts that Survived to Discharge	18 10%	21 9%	27 13%	23 12%	23 11%	24 13%	39 16%	48 16%	38 14%	52 16%	72 23 %

 * Return of Spontaneous Circulation

Garland County SCA Responses and Outcomes

CRITERIA	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Non-Traumatic SCD	211	205	203	201	171	160	214	226	211	201	212
Resuscitations NOT Attempted	147 70%	103 50%	128 63%	134 67%	115 67%	112 70%	141 66%	150 66%	129 61%	121 60%	116 55%
Resuscitations Attempted	64 30%	102 50%	75 37%	67 33%	56 33%	48 30%	73 34%	76 34%	82 39%	80 40%	96 45%
Resuscitation Attempts Transported to Local ED	52 81%	50 49%	61 81%	57 85%	33 59%	34 71%	51 70%	58 76%	62 76%	62 77%	69 72%
Resuscitation Attempts that ended in Field Termination	12 19%	47 46%	14 19%	10 15%	23 41%	14 29%	22 30%	18 24%	20 24%	18 23%	27 28%
Resuscitation Attempts that achieved ROSC*	17 27%	24 24%	24 32%	30 45%	22 39%	15 31%	26 36%	37 49%	29 35%	37 46%	30 31%
Total Resuscitation Attempts that Survived to Discharge	8 13%	4 4%	9 12%	5 7%	7 13%	8 17%	7 10%	16 21%	8 10%	21 26%	13 14%

 * Return of Spontaneous Circulation

LifeNet continues to strive to improve our delivery of this important, life-saving care to our friends and neighbors in the communities that we serve. This document and the data contained within serves as a testimony to LifeNet's dedication to evaluating and improving the emergency cardiac care that we provide.

The American Heart Association has periodically published CPR guidelines since 1966. The most recent guidelines were published in 2015. The 2015 AHA Guidelines for CPR and Emergency Cardiac Care (ECC) focuses on topics with significant new science or ongoing controversy, and so serves as an update to the 2010 AHA Guidelines for CPR and ECC rather than a complete revision of the Guidelines.

According to the AHA guidelines, survival from cardiac arrest "has increased over the past decade, but there is still tremendous potential for improvement. It is clear that successful resuscitation depends on coordinated systems of care that start with prompt rescuer actions, require delivery of high-quality CPR, and continue through optimized ACLS and post–cardiac arrest care. Systems that monitor and report quality-of-care metrics and patient-centered outcomes will have the greatest opportunity through quality improvement to save the most lives.[1]"

In an effort to review and implement the recommended changes in care as described in the ECC Guidelines, LifeNet's Clinical Steering Committee (CSC) meets regularly to discuss the overall performance of our system.

1 Source: 2015 ECC Guidelines - American Heart Association. Web-based Integrated Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care – Part 1: Executive Summary. ECCguidelines.heart.org.

Narcotic Administration

LifeNet promotes aggressive management of pain for all patients. Our Medical Director believes that the relief of pain and suffering must be a priority for our EMS system. The need and ability to manage pain or provide procedural sedation varies widely across various pre-hospital situations. LifeNet's paramedics assess for pain in all patient encounters and determine the appropriate interventions necessary to manage pain and discomfort for each patient situation and intervention. The optimal goal of pain management is total alleviation of the pain and pain responses; however, this is often not feasible based on the injury or illness. Reasonable patient satisfaction will include relief or near relief of severe pain and appropriate modification to exacerbation of chronic pain.

Pain Management

Primary Impression	Haldol	Fentanyl	Morphine	Versed	Total Administrations
Abdominal Pain/Problems	0	24	10	0	34
Burns	0	2	1	1	4
ACS	0	7	30	0	37
Seizure	1	0	0	44	45
Sedation	72	21	0	145	238
Excited Delirium	1	2	0	0	3
Musculoskeletal Pain	1	311	173	6	491
Totals	75	367	214	196	852

"Great guys & felt like family members! Excellent men & very knowledgeable."

Survey Response #2249491

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Customer Satisfaction

Each month, EMS Survey Team (EMSST) randomly selects patients from data provided by LifeNet. These patients are mailed the survey tool and are requested to fill out the single page form, adding their comments throughout. Patients then return the survey in the postage paid envelope to EMSST. Returned results are scanned and tabulated in the EMSST survey database.

From these results, EMSST develops statistical reports which numerically and graphically show how our patients view key aspects of the service they received.

Furthermore, these results are compared to the benchmarked (Total DB) results of all the companies using the survey. In this way, we can evaluate how our scores stack up against the aggregate "universe" of all ambulance scores.

During 2016, 238 surveys were returned with an overall score of 93.46.

"Lifesaving service for me."

Survey Response #2240203

Question	LNI Score	Comparison
Helpfulness of the person you called for ambulance service	93.82	92.49
Concern shown by the person you called for ambulance service	92.88	92.36
Extent to which you were told what to do until the ambulance arrived	90.73	90.72
Extent to which the ambulance arrived in a timely manner	91.42	91.80
Cleanliness of the ambulance	94.36	94.05
Comfort of the ride	87.39	87.26
Skill of the person driving the ambulance	94.70	93.43
Care shown by the medics who arrived with the ambulance	94.68	94.08
Degree to which the medics took your problem seriously	95.03	94.00
Degree to which the medics listened to you and/or your family	94.99	93.67
Skill of the medics	94.37	90.04
Extent to which the medics kept you informed about your treatment	93.23	92.45
Extent to which medics included you in the treatment decisions (if applicable)	93.80	92.15
Degree to which the medics relieved your pain or discomfort	91.30	90.40
Medics concern for your privacy	94.51	93.09
Extent to which medics cared for you as a person	94.79	94.06
Professionalism of the staff in our billing office	88.32	88.50
Willingness of the staff in our billing office to address your needs	88.72	88.58
How well did our staff work together to care for you	94.17	93.27
Extent to which our staff eased your entry into the medical facility	93.29	93.35
Appropriateness of Emergency Medical Transportation treatment	93.66	93.09
Extent to which the services received were worth the fees charged	88.94	87.38
Overall rating of the care provided by our Emergency Medical Transportation service	93.46	93.27
Likelihood of recommending this ambulance service to others	94.29	92.79

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