

# Working Together for Our Community

2020 ANNUAL MEDSTAR CAREHOLDERS' REPORT



[medstar911.org](http://medstar911.org)

To provide **world-class** mobile healthcare with the highest-quality **customer service** and **clinical excellence** in a **fiscally responsible** manner.

MEDSTAR MISSION STATEMENT

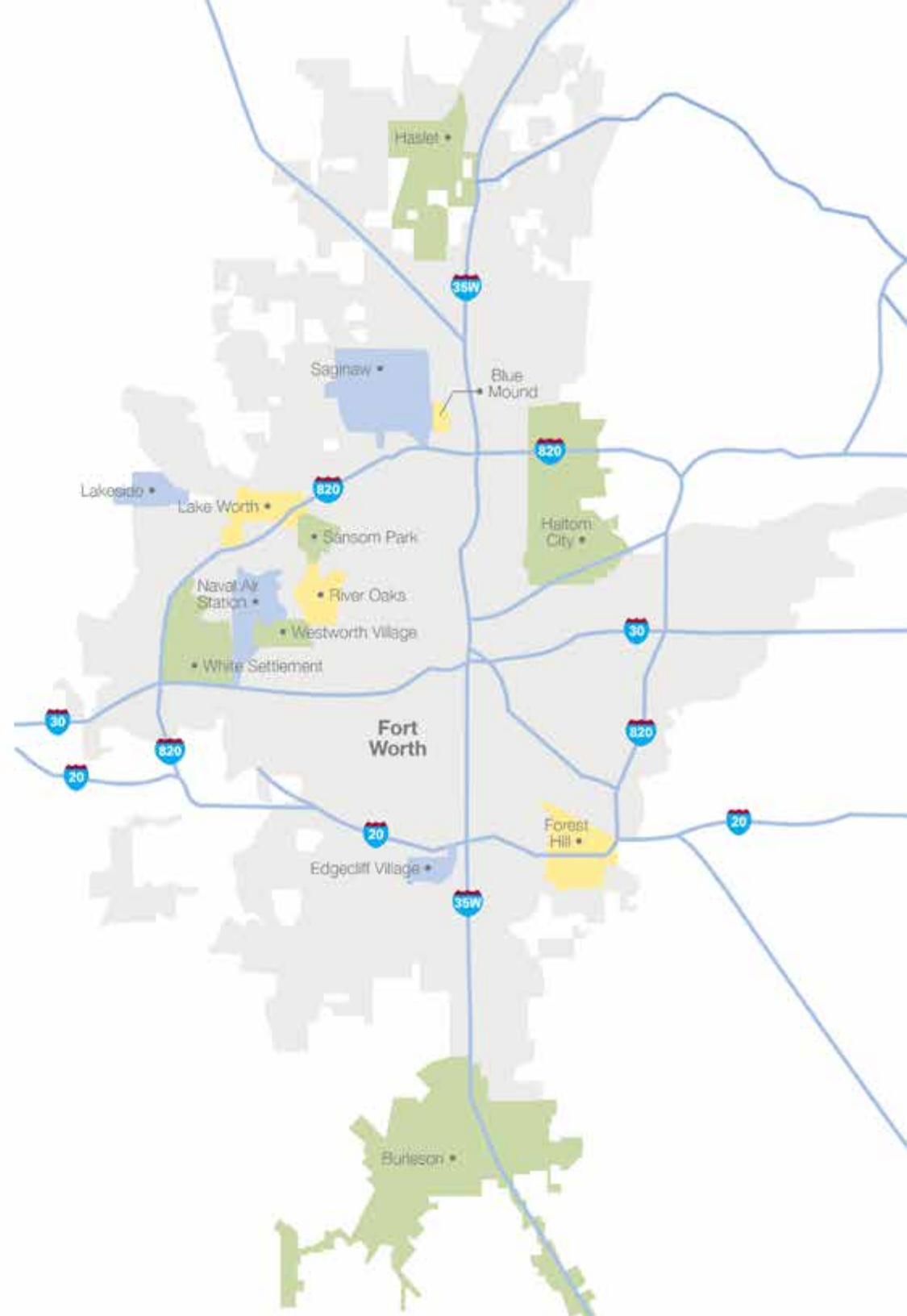


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MedStar's service area encompasses 15 cities, 437 square miles, and a population of over 1 million residents.





# CEO MESSAGE

## 2019 Brought Revolutionary Change For MedStar

We made a significant investment in our community this year. Since MedStar's inception as a regional governmental administrative agency in 1986, we have operated a Dynamic Resource Management (DRM) system, deploying ambulances into our service area from a single, centralized deployment center. The dramatic growth, including the evolution of specialty services at hospitals of north Fort Worth, has increased our call volume in that area to the level that it makes operational and financial sense to open a hub deployment center in that region.



The North Deployment Center rendering and the North Deployment Center groundbreaking



We broke ground on a new North Deployment Center (NorthStar) on April 30, 2019 and plan to start deploying ambulances from that location in March 2020.



Hope Squad team members at the Equine Training Center

## Hope Squad

Our team provides incredible service to our community, but sometimes the stressors of work and the pressures of everyday life can take an emotional toll. This past year, we began a new initiative to assure we are doing everything we can to provide resources to our valuable team members. We started a program called Hope Squad, which trains specially selected peers to recognize signs of stress and depression in their co-workers, and provides tools on how to approach those who may be struggling with stress or depression.

We are very thankful to the many MedStar folks who are part of our Hope Squad.

MedStar continues to be the “go to” source for healthcare partners, payers and EMS agencies across the country who are considering testing new models for EMS service delivery. Our Mobile Integrated Healthcare (MIH) delivery model continues to lead the EMS industry’s transformation from simply a “you call, we haul” model, to a model that helps navigate patients through the healthcare system to improve patient outcomes, enhance the patient’s experience of care, and reduce expenditures.

This year, we assisted the Centers for Medicare and Medicaid Services (CMS) with the development of a new initiative called Emergency Triage, Treatment and Transport (ET3). The ET3 pilot will dramatically change the economic model for agencies such as MedStar by reimbursing providers for things like 9-1-1 dispatch center call triage (with no ambulance response), treatment on scene without transport, or transport to alternate destinations from 9-1-1 scene calls such as urgent care clinics. Historically, ambulance services have only been reimbursed if we transport patients from the scene of a 9-1-1 call to a hospital emergency department. This pilot program will allow specially selected agencies to develop and implement programs that appropriately navigate 9-1-1 patients to the right care, at the right time, at the right place, thereby avoiding unnecessary emergency department visits.

*We are extremely blessed to have the opportunity to serve this community. It is an honor that I and all our team members work tirelessly to earn, every day, every time, every patient.*

**Douglas R. Hooten, MBA, CEO**

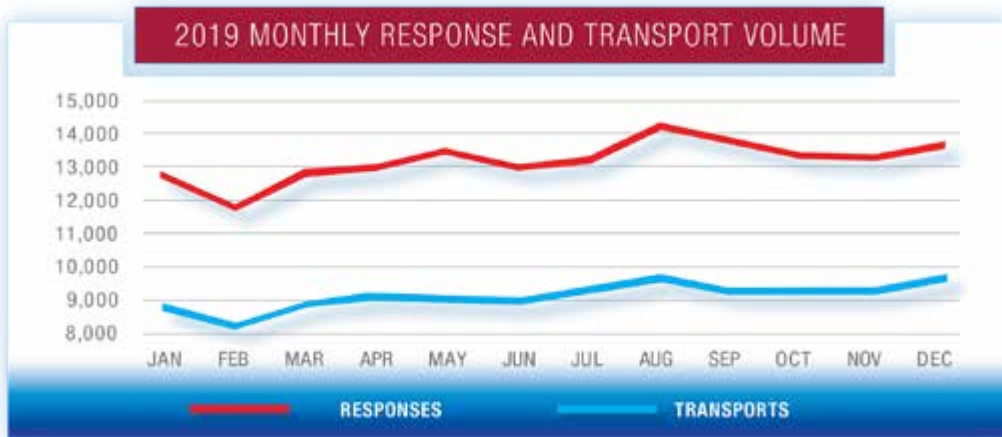


Department of Health and Human Services Press Release addressing the new ET3 model.



# MEDSTAR AT A GLANCE

MedStar responded to 158,015 ambulance requests in 2019, and transported more than 108,102 people to area facilities. We transport an average of 296 patients per day.



**COMMUNITY PROFILE**

POPULATION	1,072,179
SERVICE AREA SQUARE MILES	437
MEDIAN HOUSEHOLD INCOME	\$58,448
MEDIAN AGE	33.2
MEDIAN RESIDENTIAL PROPERTY VALUE	\$189,300

Since MedStar's start in 1986, we have been committed to excellence in EMS delivery and innovation. In 2019, MedStar deployed 276,095 staffed-ambulance unit hours into our service area to meet our community's need, 18% more than the staffed unit hours we deployed in 2015.



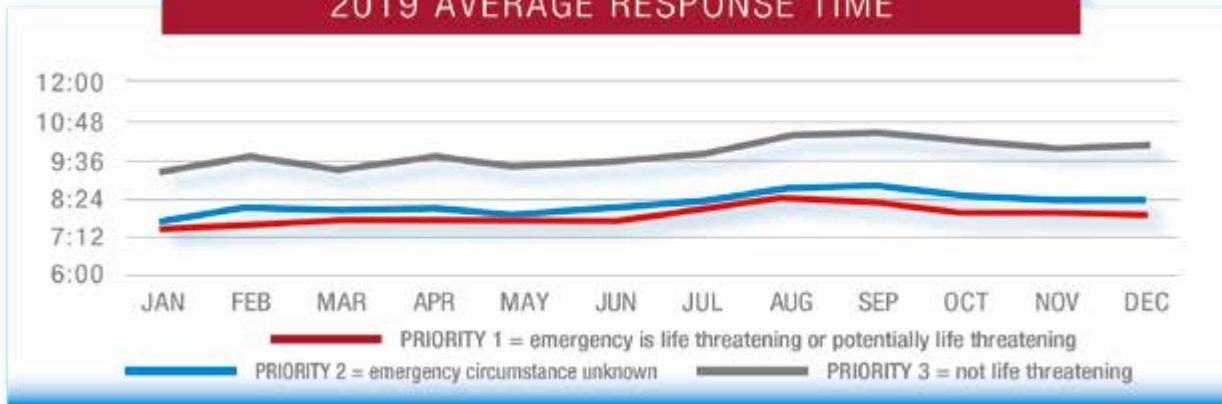
## Fleet Facts

**3,074,318** | Miles Driven

**443,298** | Gallons of Fuel Used



## 2019 AVERAGE RESPONSE TIME



## Fun Facts

1,928 | CPR Defibrillation Pads Used

633,700 | ECG Electrodes Used

31,810 (21.29 acres) | Blankets Used

190,100 (21,122 sq ft/.48 acres) | 4x4 Gauze Used

13,192 (15.62 miles) | Rolled Gauze Used



MedStar crews provided much-needed service in Hardeman and Foard Counties, supporting the Texas Emergency Medical Task Force with wildfire operations. Crews were providing rapid transport for firefighters working the front line.

# ACHIEVING OUR MISSION

MedStar's mission is to provide **world-class mobile healthcare** with the highest quality customer service and clinical excellence in a fiscally responsible manner. We are achieving that mission as demonstrated through our positive **clinical outcomes, customer service, and economic efficiency.**

## CLINICAL EXCELLENCE

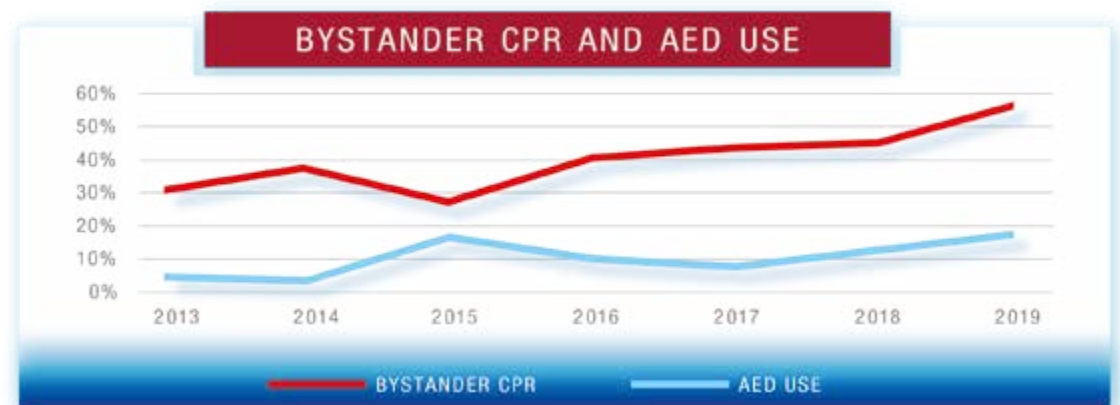
MedStar's clinical outcomes are among the best in the nation. To help reach this goal, the Office of the Medical Director (OMD) evaluates the care of every out-of-hospital cardiac arrest patient, measuring clinically-significant metrics such as Chest Compression Fraction (CCF), which represents the percent of time cardiac arrest patients are receiving life-saving chest compressions. The American Heart Association recommends a CCF of 80%, and we have met this goal 98% of the time. To further push the clinical excellence of the system, the benchmark used in the MedStar system is a CCF of 90%. Since 2012, MedStar has trained 32,989 people in hands-only CPR, starting with our "25 in 5" program to educate 25,000 people in five years. Since 2017, an additional 7,889 people have been included in the continued drive to use bystander CPR to increase the survival of those in cardiac arrest. In October 2019, **77.6%** of cardiac arrest patients treated by MedStar received hands-only CPR from a bystander before EMS arrival.

It is outcomes from these types of innovations that have led representatives from over 220 communities in 42 states and six foreign nations to visit MedStar and learn how to implement these programs.

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**4,325** | Number of People MedStar  
Trained in Hands-Only CPR in 2019

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A cardiac arrest survivor is alive due to bystander CPR and AED use.





## QUALITY CUSTOMER SERVICE



In contrast to many EMS service providers, MedStar uses an outside agency to conduct patient experience surveys of ambulance and Mobile Integrated Healthcare (MIH) patients we care for. Each month, MedStar's patient experience scores are in the top 5% of EMS agencies in the EMS Survey Team database.

In December 2019, our quarterly overall patient experience score for ambulance patients was 96.01%, and 100% for our MIH-enrolled patients.

## Fun Facts

- 1,532 | ET Tubes Used
- 36,982 | Nasal Capnography Sensors Used
- 6,513 | Nebulizers Used

## WORLD-CLASS MOBILE HEALTHCARE

MedStar is more than just ambulance responses and emergency department visits. For the past decade, we have been recognized as a leader in the EMS transformation into patient navigation, not simply ambulance transport. Our Mobile Integrated Healthcare (MIH) program has significantly reduced ambulance, emergency department, and inpatient hospital admissions for high-utilizer and readmission-risk patients. Our specially trained team of paramedics and nurses work to reduce 9-1-1 utilization and navigate low-acuity 9-1-1 callers to clinically appropriate healthcare resources. This program has prevented 10,584 ambulance transports, 7,740 ER visits, and 1,748 inpatient hospital admissions. Using the average payments for these encounters as an economic basis, we have saved over \$30.2 million in healthcare expenditures since 2009.

MEDSTAR'S MOBILE INTEGRATED HEALTHCARE EXPENDITURE SAVINGS ANALYSIS									
JUNE 2012 - SEPTEMBER 2019									
	Ambulance Transports			ED Visits			Hospital Admissions		
	Avoided	Expenditure	Savings	Avoided	Expenditure	Savings	Avoided	Expenditure	Savings
9-1-1 Nurse Triage	4,594	\$419	\$1,924,886	4,166	\$969	\$4,036,854			
High Utilizer Program	5,909	\$419	\$2,475,871	3,496	\$969	\$3,387,624	1,569	\$10,500	\$16,474,500
Readmission Prevention <sup>1</sup>	81	\$419	\$33,939	78	\$969	\$75,582	179	\$10,500	\$1,879,500
<b>SUB-TOTAL</b>	<b>10,584</b>		<b>\$4,434,696</b>	<b>7,740</b>		<b>\$7,500,060</b>	<b>1,748</b>		<b>\$18,354,000</b>
<b>TOTAL EXPENDITURE SAVINGS</b>									<b>\$30,288,756</b>

<sup>1</sup>-Data through October 2018

# ECONOMIC EFFICIENCY | One of MedStar's primary goals is fiscal responsibility, and an external analysis reveals we are easily achieving that goal.

## FISCALLY RESPONSIBLE

For the past several years, public ambulance agencies have been eligible to participate in a Medicaid Ambulance Supplemental Payment Program (ASPP). The program is designed to provide supplemental reimbursement for ambulance transports of Medicaid patients. As a requirement of participation, ambulance agencies must submit a cost report, often done by an outside agency, detailing the ambulance agency's cost of service delivery.

The Public Consulting Group (PCG) completes these cost reports for 53 public ambulance agencies in Texas. For the most recent reporting year (2018), cost report data from PCG reveals that MedStar's \$402.53 cost per transport is the lowest of ALL PCG reporting agencies, and \$1,806.08 less than the average cost of a fire department-based transport of \$2,208.61.

*These key measures demonstrate the economic value that MedStar, and all our team members, bring to the member cities!*



*MedStar's innovations have led representatives from over 220 communities in 42 states and six foreign nations to visit MedStar and learn how to implement these programs in their community.*



Training exercises



MedStar on standby at an area football game



MedStar is committed to training best practices



# PEOPLE

## Fun Facts

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**772**

**Preventative Maintenance Completed**

**52,200**

**IV Catheters Used**

**16,425 liters (4,339 gallons)**

**Total IV Fluid Administered**

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**ATTRITION** | MedStar's overall 2019 attrition rate averages 2% per month and 24.37% for the calendar year. According to the American Ambulance Association/Avesta 2019 Ambulance Industry Employee Turnover Study, attrition is "one of the most critical issues impacting ambulance service providers due to its numerous negative consequences."

MedStar's overall turnover is significantly lower than the industry average. The study estimated the turnover in the EMS industry by occupations:

EMTS (FT 30%/PT 44%)

PARAMEDICS (FT 22%/PT 28%)

SUPERVISORS (12%)

DISPATCH (36%)

BILLING OFFICE (26%)

WHEELCHAIR VEHICLE OPERATORS (39%)



## SURVIVORS MEET AND GREET

Many patients who are saved by the EMS system want to meet their rescuers. MedStar routinely hosts "Survivor Reunions" that include ALL the people who contributed to the successful outcome: the dispatcher who took the 9-1-1 call, the fleet and logistics technicians who serviced and stocked the vehicle, bystanders who provided medical care, the first responders, and the MedStar crew. Moments like these reinforce why we do what we do every day, in every response.



The Hope Squad is a peer support team at MedStar that acts as the eyes and ears for the organization to assist team members who may be struggling. The Squad members are nominated by their peers and represent almost every department in the organization. They are specifically trained on suicide and mental health warning signs; peer-to-peer interactions; navigating our team members to the most appropriate resources (i.e. EAP, Stay the Course, and other mental health organizations); and understanding the philosophy behind resiliency and living well. The team is made up of folks who genuinely care about the well-being of their peers. They are ears to listen, voices to provide support, and hearts offering hope.



# PEOPLE



*"We know that ambulance bills typically occur at the worst time. My role at MedStar is to do all that I can to try to minimize the impact of our fees on the people who need our services."*

Traci Randolph | MEDSTAR BILLING TEAM MEMBER

**National and State Industry Leadership** | Members of MedStar's leadership team continue to be major contributors to the advancement of the EMS profession, serving in leadership and other key roles in the following state and national associations and organizations:



### Academy of International Mobile Healthcare Integration

- Board of Directors
- Chair, Education Committee
- Chair, Reimbursement Committee
- Communications Committee



### CMS Quality Measures

- Member, ED Throughput Measures Task Force
- Member, Acute Coronary Syndrome Outcome Measures Task Force



### National Association of Emergency Medical Technicians

- President
- Chair, EMS Transformation Committee
- Education Committee
- State Education Coordinator
- EMS Education Committee



### National Association of EMS Physicians | Texas Chapter

- Board of Directors



### National EMS Management Association

- EMS Health and Safety Officer Committee



### National Fire Protection Association

- EMS 450 Standards Committee
- EMS 451 Mobile Integrated Healthcare Committee



### Texas EMS Alliance

- Board of Directors



### Texas Medical Association

- EMS and Trauma Committee



### U.S. Fire Administration National Fire Academy

- Instructor, Mobile Integrated Healthcare Administration



NAEMT board members visit MedStar

## COMMUNITY COURSES

Class	# of External Students	# of Internal Students	Approx. Total Hours
<b>EMT Courses</b>	<b>109</b>	<b>1</b>	<b>27,500</b>
Cardiopulmonary Resuscitation (CPR)	149	199	100
Advanced Cardiovascular Life Support (ACLS)	64	84	88
Pre-Hospital Trauma Life Support (PHTLS)	110	53	112
Emergency Pediatric Care (EPC)	15	22	48
Pediatric Advanced Life Support (PALS)	12	33	32
Tactical Emergency Casualty Care (TECC)	18	0	32
Geriatric Education for Emergency Medical Services (GEMS)	1	4	16
Advanced Medical Life Support (AMLS)	99	81	176
Stop the Bleed/Hands-Only CPR (STB/CPR)	494	0	66
Community CPR/First Aid	284	0	72
<b>Total</b>	<b>1,355</b>	<b>477</b>	<b>28,242</b>

**OVERALL TOTAL STUDENTS 1,832**

# COMMUNITY



## The MedStar Foundation

Diversifying our fundraising initiatives, the MedStar Foundation hosted our first annual clay shoot in 2019. We had previously conducted 12 annual golf tournaments, but had reached our maximum attendance limits, which prompted us to try a clay shoot (this is Texas after all!).

The beneficiary of our inaugural clay shoot was DRC Solutions. Through this event we were able to donate over \$15,000 to DRC Solutions. The mission of the DRC is to provide respectful, responsible, and effective community-based solutions to help individuals and families emerge from homelessness as productive, healthy people.



## Holiday Festivities

We continued a MedStar tradition of taking two medically challenged children and their families trick or treating in decorated ambulances. Our staff got into the holiday spirit by dressing up and decorating the ambulance, taking cues from the costumes of the patients and their families.

The program gives families the opportunity to create lasting memories they would not otherwise have been able to enjoy.



## Fort Worth Safe Communities Coalition

MedStar serves in leadership roles for several Fort Worth Safe Communities Coalition task forces:

- Falls Prevention
- Road Safety
- Elder Abuse
- Disaster Preparedness
- Overdose Prevention and Drug Safety



### MedStar Standby and Event Services 2019

<i>Total Donated</i>		\$124,045	<i>Standby Events</i>		599
<i>Donated Services</i>		\$87,056	<i>Community Events</i>		240
<i>Discounted Services</i>		\$36,989			

# COMMUNITY

## MAJOR EVENTS:

- All Western Parade
- Fort Worth Stock Show and Rodeo (7 days a week for 3 weeks)
- Cowtown Marathon
- Spring Break at the Zoo
- Texas Motor Speedway (3 times per year)
- Main Street Arts Festival
- Alliance Air Show
- ArtGoggle, Mayfest
- Tour de Fort Worth
- Fort Worth Fourth
- Tarrant County Back to School Round Up
- TCU Football (6 home games)
- Almost all TCU Sporting Events
- Tarrant County Heart Walk
- Parade of Lights
- Armed Forces Bowl (at TCU)
- Sundance Square New Year's Eve
- West 7th Friday and Saturday Night Coverage (year around)

## Toy Drive for One Safe Place

MedStar conducted our second annual Christmas toy drive for One Safe Place, a comprehensive agency devoted to preventing crime and violence in Tarrant County's neighborhoods. One Safe Place coordinates shelter activities for children and families who are the victims of domestic violence. This year, we included a "Fill the AMBUS" community event to fill our AMBUS with toys.



## MEDSTAR MEDIA INTERVIEWS: Keeping our community informed with over 70 interviews on a wide range of topics.

- Surviving During Extreme Weather
- Flu Prevention
- Disinfecting Ambulances After an EMS Call
- Trick or Treat Halloween Event
- Christmas Toy Drive for One Safe Place
- Trauma and CPR Survivors' Reunions
- Drowning Prevention
- Stop the Bleed Kit Distribution and Training
- Opioid Impact on the Community



# SERVICES

## Specialty/Standby FWPD/MEDSTAR PARTNERSHIP

In 2019, the Fort Worth Police Department and MedStar joined forces to enhance the safety of people visiting Fort Worth's W. 7th Street District on Friday and Saturday nights. MedStar's Bicycle Emergency Response Team (BERT) imbeds with FWPD's Bike Officers to provide first-on-scene medical care responses in the District. This partnership has reduced ambulance responses into the W. 7th District by 27.5% and reduced fire engine responses by 64%.



## HOME HEALTH PARTNERSHIP

Through an innovative partnership with local home health agencies, MedStar and the agencies collaborate to provide effective after-hours episodic care for the agencies' patients, and notify the agencies' on-call nurses in the event of a 9-1-1 call for a patient enrolled in this program. Working together, the agencies' staff and the MedStar Mobile Health Paramedic (MHP) determine the most appropriate care for patients.

Since the program's inception, 2,650 patients in the MedStar service area have been enrolled. Of these, 1,901 accessed the 9-1-1 system and MedStar had a specially trained MHP on the scene as a co-responder for 987 calls. As a result, care was coordinated with the MHP on the scene with the respective agency on-call nurse and only 714 patients (72.3%) required transport to the ED. Additionally, the agencies requested a MedStar MHP on 454 occasions, out of which only 27 patients (5.9%) required transport to the ED.



## Fun Facts

**775 doses** | Naloxone/NARCAN® Used

**5,241 doses** | Epinephrine Used



# Special Programs

## HOSPICE REVOCATION AVOIDANCE

Patients/families at risk of having their hospice status revoked by calling 9-1-1 for an urgent trip to the Emergency Department (ED) are identified by the hospice agency. MedStar and several of the hospice agencies coordinate efforts to reduce the possibility of the patient/family losing hospice status. Through September 2019, 565 patients whom hospice agencies felt would lose their hospice status were enrolled in the program. Only 102 (19.3%) were disenrolled from hospice care.

HOSPICE PROGRAM SUMMARY		
SEPT 13 TO SEPT 19	NUMBER	PERCENT
Referrals <sup>1</sup>	757	
Enrolled <sup>2</sup>	565	74.6%
Deceased	380	67.3%
Active	47	8.3%
Revoked <sup>3</sup>	102	18.1%
Activity		
EMS Calls	245	
Transports	129	
Transports to In-Patient Unit	17	
Transports to ER	112	

- 1 - Patients referred who are identified as at high risk for voluntary disenrollment, or involuntary revocation.
- 2 - Difference results from referrals outside the MedStar service area, or patients who declined program enrollment.
- 3 - Patient who either voluntary disenrolled, or had their hospice status revoked.

### 9-1-1 NURSE TRIAGE

Patient satisfaction scores whose 9-1-1 call resulted in a disposition other than an ambulance response

Satisfaction Score  
**100% BEST**



MedStar 9-1-1 dispatcher handling their call	94.0%
Triage Nurse handling their call	94.0%
Nurse's understanding of the medical issue	94.3%
Alternate transportation arrangements	92.0%
Nurse's suggestion saving the patient time and money	87.0%
How 9-1-1 call was handled to address medical issue	87.1%

Low acuity 9-1-1 callers are referred to specially trained RNs in our call center who help patients find appropriate resources for their medical issues. Since June 2012, 12,226 low-acuity 9-1-1 callers have been referred to this program, and 37.6% of these patients have received a response other than an ambulance transport to the emergency department.

This reduction has saved \$6 million in Ambulance Transport and Emergency Department expenditures (\$1,298 per enrolled patient).

### PATIENT SELF-ASSESSMENT OF HEALTH STATUS<sup>1</sup>

	High Utilizer Group			Readmission Avoidance		
	Enrollment	Graduation	Change	Enrollment	Graduation	Change
<b>Sample Size</b>	403	244		756	611	
Mobility <sup>2</sup>	2.36	2.52	6.7%	2.31	2.55	10.1%
Self Care <sup>2</sup>	2.60	2.78	6.9%	2.59	2.76	6.3%
Perform Usual Activities <sup>2</sup>	2.31	2.64	14.5%	2.29	2.60	13.3%
Pain and Discomfort <sup>2</sup>	1.99	2.37	18.9%	2.46	2.63	6.8%
Anxiety/Depression <sup>2</sup>	2.20	2.48	12.5%	2.48	2.69	8.7%
<b>Overall Health Status<sup>3</sup></b>	<b>5.15</b>	<b>7.00</b>	<b>35.9%</b>	<b>5.48</b>	<b>6.96</b>	<b>27.0%</b>

1 - Average scores of pre- and post- enrollment data from EuroQol EQ-5 D-3 Assessment Questionnaire

2 - Score 1-3 with 3 most favorable

3 - Score 1-10 with 10 most favorable

AS OF 8.1.2019

# SERVICES

## CALL VOLUME

138,939 | Total 9-1-1 Incidents

257,487 | Total Processed Incoming/Outgoing Calls



## Performance Metrics

### PATIENT EXPERIENCE FOCUS AND OUTCOMES

Like all successful healthcare systems, MedStar prioritizes accountability to patient experience. Out of more than 20,000 EMS agencies nationwide, MedStar is among the top 150 that apply the highest survey standards, using pure data collection methods generated by an outside agency.

MedStar's EMS Survey Team (EMSST)

Patient Experience reports for 2019 were exceptional.



- MedStar's overall average score of 96.2% stands among the top scores ever attained since starting the EMSST patient experience surveying process in October 2013.
- Every department of the MedStar organization receives exceptionally high patient satisfaction scores.
- MedStar routinely scores the highest in every category for similar-sized agencies, all agencies in Texas (EMSST's largest participation state), and all agencies accredited by the Commission on Accreditation of Ambulance Services (CAAS).

#### MedStar's 2019 Monthly Score Averages

OVERALL SCORE	Dispatch Analysis	Ambulance Analysis	Crew Analysis	Billing Office Analysis
96.2%	95.8%	94.9%	96.5%	85.2%



## HIGH UTILIZER GROUP (“EMS LOYALTY”) PROGRAM

This program consists of patients who use 9-1-1 fifteen or more times in 90 days, or who are referred into the program by healthcare system partners due to high ED utilization. MedStar’s Mobile Healthcare Providers (MHPs) conduct regular home visits, connect the patients to available resources, and teach the patients how to better manage their healthcare.

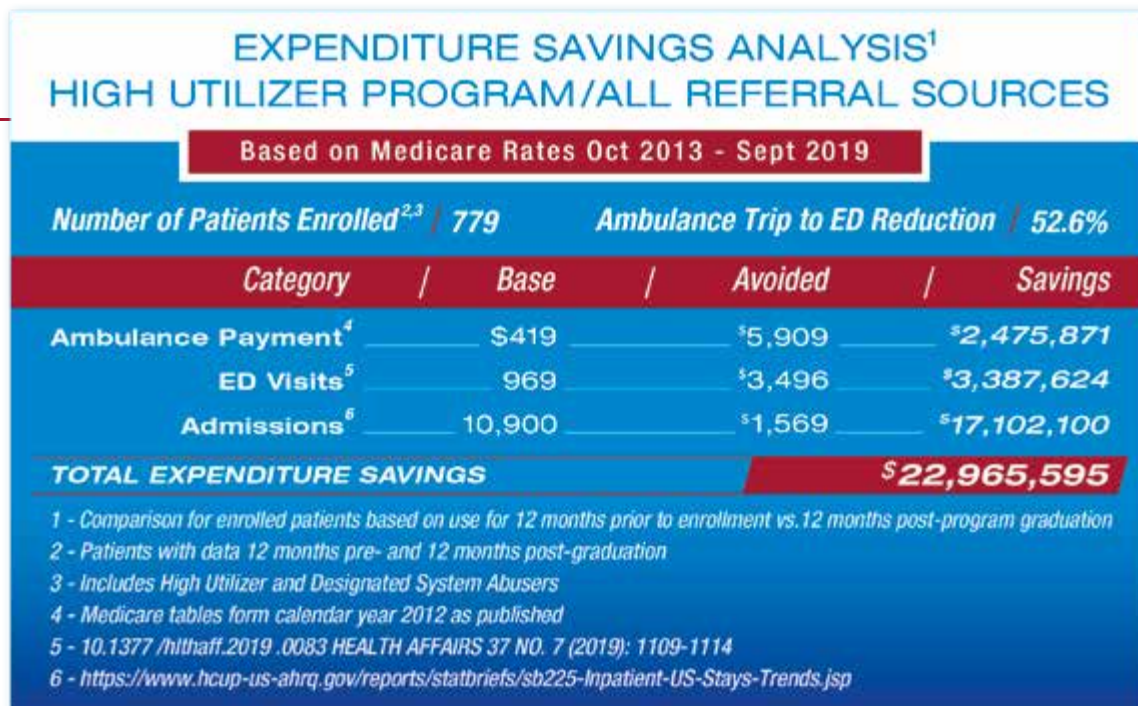
The typical enrollment period is 30-to-90 days.

Since July 2009, 779 patients with two years of utilization data available (one year pre- and one year post-enrollment) have experienced 5,909 (49%) fewer ambulance transports to the emergency department. Patients designated as “system abusers” experienced a corresponding reduction of 70%. The program also has reduced ED visits in this patient population by 3,496, and averted 1,596 hospital admissions. This reduction has saved \$23 million in healthcare expenditures for ambulance, ED, and admissions (\$29,481 per enrolled patient).

## READMISSION AVOIDANCE

Patients at risk for a readmission within 30 days of the discharge are referred to MedStar by the patient’s case manager or primary care physician (PCP).

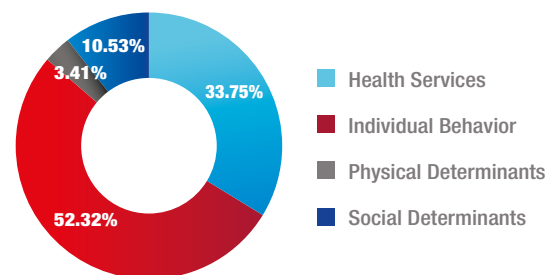
MedStar conducts a series of home visits to educate the patient and family on appropriate care



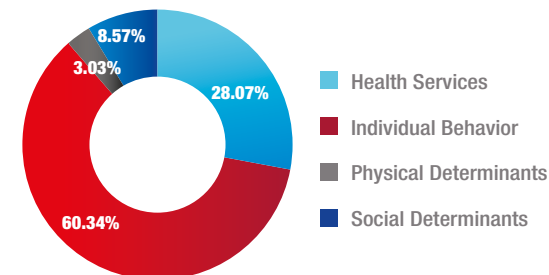
management and loops the patient to their PCP. If the patient needs intervention, the MedStar MHP may coordinate in-home diuresis or other treatments with the patient’s PCP, along with a follow-up PCP appointment.

Since October 2013, 348 patients who had a prior 30-day readmission AND those whom the referring agency felt would have a 30-day readmission have been referred into the program. Of those, only 169 had a 30-day readmission, a 52.5% reduction in readmissions for this high-risk readmission cohort.

**Determinants of Health Identified & Addressed HIGH UTILIZER PATIENTS**



**Determinants of Health Identified & Addressed ADMISSION/READMISSION AVOIDANCE PATIENTS**



# SERVICES

## MEDSTAR PAYER MIX ANALYSIS

Reimbursement continues to be a challenge for all healthcare providers. It is no different for MedStar. Over the past four years, MedStar has seen our payer mix impacted by patients who lack insurance, as well as the increasing number of services provided to Medicare and Medicaid patients. Medicare and Medicaid payments are fixed, and generally do not cover the full cost of providing services to patients covered by these programs.

MedStar continues to work with the community and payers to help stabilize the revenue stream for the services we provide through a variety of activities. Among them are promoting new payment arrangements better aligned with the goals of both patients and payers, and testing new economic models for Medicare and Medicaid payments.

One such initiative is a new payment model being offered to ambulance providers by Medicare. This new Emergency Triage, Treatment and Transport (ET3) model reimburses ambulance providers for the service provided, including payment for treatment in place, or transport to a destination other than a hospital emergency department, such as an urgent care clinic or primary care physician office. We have worked with Medicare on the development of this new model, and have been engaged in conversations with our other local payers (commercial insurance and Medicaid) in an effort to stabilize the ambulance service economic model.

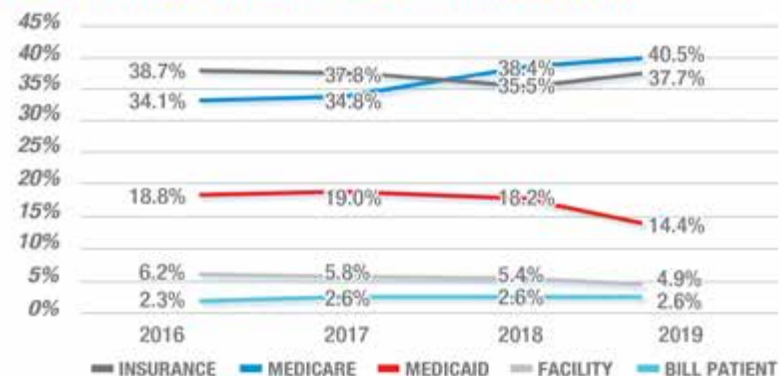


## FISCAL YEAR TRENDS

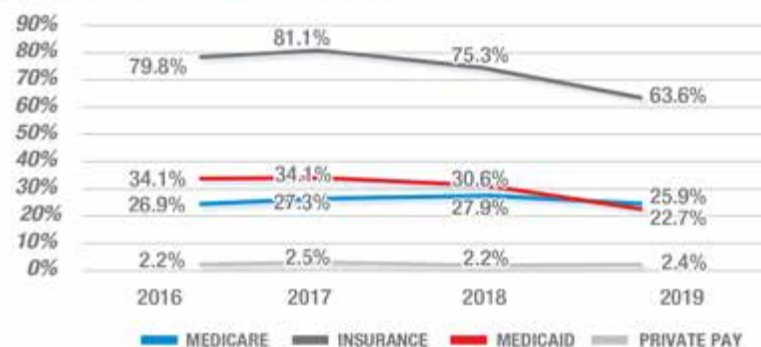
### 1 AVERAGE BILLED VS. COLLECTED SERVICE FEES



### 2 PAYER MIX AS A % OF CASH COLLECTED



### 3 COLLECTION % BY PAYER



**1** The **AVERAGE BILLED VS. COLLECTED SERVICE FEES'** graph reflects the average from all the entities and individuals billed for MedStar services versus the average MedStar collected by year.

**2** The **PAYER MIX AS A % OF CASH COLLECTED** reflects the percentage of revenue received from each source paying MedStar for services against the total collected payments for each given year, e.g. in 2019 Medicare accounted for 40.5% of all payments (collected \$18.2 million versus the \$45.0 million collected from all payers).

**3** The **COLLECTION % BY PAYER** reflects the percent collected from what was billed, e.g. in 2019 Private Insurance paid MedStar 63.6% of the \$26.7 million MedStar billed.



# MEDICINE

## LETTER FROM THE INTERIM MEDICAL DIRECTOR



The Emergency Physicians Advisory Board (EPAB), through the Office of the Medical Director (OMD), is responsible for medical direction and oversight of the entire 9-1-1 EMS system. Our perspective, however, is that of an integral part of this system, rather than an external force applied to the system. Medical Direction & Oversight spans multiple critical functions, including Quality Assurance (QA), protocol development, provider credentialing, training, education, research, and inter-hospital relations. We have continued to perform these critical functions with the same transparency, integrity, and independence required of us by the citizens we serve.

More specifically, credentialing addresses the provider's knowledge of medical protocols, skills, and procedures

to operate effectively under the Medical Director's license. QA assures that, once credentialed, pre-hospital personnel provide the highest quality medical care, from the first seconds of a 9-1-1 call to stabilization and transfer of patient care. Training and education develops the knowledge, skills, and attitudes requisite to clinically perform in a system such as ours.

The continuum of pre-hospital care has more recently been extended to the entire out-of-hospital environment, and now medical direction includes nontraditional oversight of a variety of programs for hospital readmission avoidance, chronic home care, hospice or palliative care, nurse triage, and alternative navigation of 9-1-1 patients.

We are proud to actively collaborate with our colleagues in operations, communications, administration, and finance as we navigate this exciting realm of patient-centered and population-based healthcare. We are equally privileged to work with our EMT and Paramedic colleagues, who are no longer technicians, but clinicians, and who provide the highest quality

*Veer D. Vithalani, MD, FACEP, FAEMS*



## CREDENTIALING

The OMD is responsible for the clinical proficiency of all pre-hospital providers who perform patient care in the system. All newly hired EMTs and Paramedics at MedStar go through a rigorous training process including in-classroom lectures, high-fidelity patient simulation, and field mentorship. Culminating in an in-person medical case interview, this process ensures that the clinicians of this system are held to the highest standard of care.

NUMBER OF PROVIDERS TRAINED AND CREDENTIALIED				
	PARAMEDICS		EMTS	
	TRAINED	CREDENTIALIED	TRAINED	CREDENTIALIED
2017	71	53	60	57
2018	45	31	53	49
2019	45	37	54	53

## QUALITY ASSURANCE

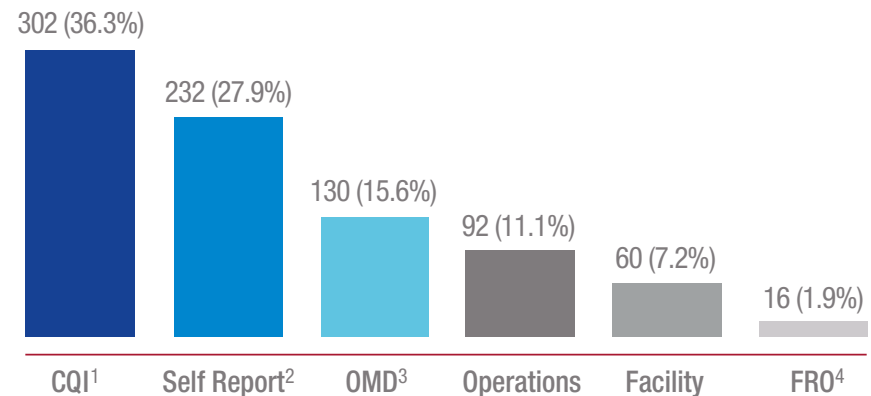
The OMD is committed to providing our community with the highest quality patient care, based on evidence-based best practices. Our success as an organization relies on developing a culture of clinical excellence and establishing a foundation for ingenuity, transparency, resourcefulness, and innovation.

To achieve these goals, our quality assurance (QA) processes are designed to track, monitor, and critically evaluate individual sentinel

events as well as system-based trends, and is founded on the following principles:

- *Quality cannot be assumed, but must actively be built into the system.*
- *If you do not measure, you cannot improve.*
- *Every clinical event provides an opportunity for individual and system improvement.*

Our QA program has been designed to be strictly educational in nature, with a keen focus on remediation and knowledge translation. Providers are encouraged to identify and refer all perceived clinical care concerns without fear of retribution for themselves or their peers. By fostering a culture of self-evaluation and growth, we have been proud to find that most cases are brought to our attention for review through this “self-report” process.



**FIGURE 1** | While QA cases come to our attention through a number of avenues (hospitals, patients, physicians, etc.), Figure 1 demonstrates the majority of these events are captured through OMD’s bundle of care QA or self reported by EMTs and Paramedics in the field.

- 1 - Continuous Quality Improvement Management identified 302 of the events noted
- 2 - 232 Quality Assurance reports were self reported by providers
- 3 - OMD identified 130 events
- 4 - First Response Organization identified 16 of the events

# MEDICINE

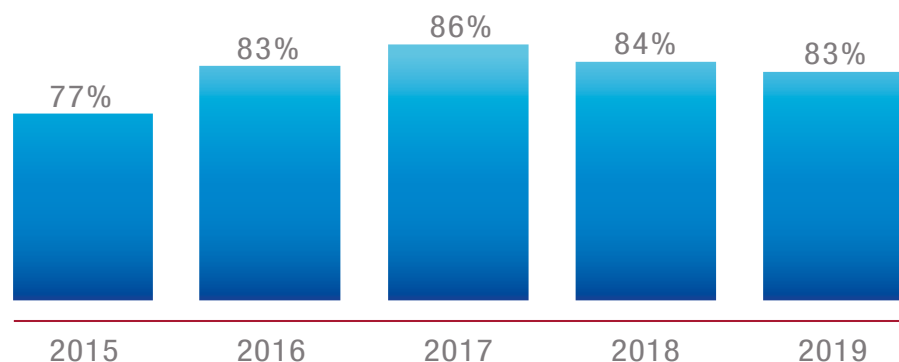
## OUT-OF-HOSPITAL CARDIAC ARREST

National survival rates from out-of-hospital cardiac arrest (OOHCA) remain dismal due to weak links in every step of the “chain of survival,” from 9-1-1 call to arrival in the Emergency Department.

Unfortunately, 9-1-1 EMS systems have traditionally focused most performance measures on response times, which evidence-based research proves has little impact on the outcomes of the vast majority of patients calling 9-1-1.

Even with the enormous resources devoted to narrowing the window for resuscitation, and even with national initiatives to improve the rates of bystander CPR, many of our communities have made little progress with this complex problem. To address this issue in our own community, the OMD has taken a laser-like focus on what actually happens on scene during a cardiac resuscitation, instead of solely focusing on how long it takes to get there. As such, every case of OOHCA is individually reviewed for the proportion of time spent doing chest compressions. These reviews also examine the rate, depth and quality of individual compressions, and recognition and treatment of lethal heart rhythms. In addition, these reviews provide confirmation of airway and breathing management.

For example, scientific research has proven the critical value of spending as much time as possible performing CPR on the patient’s chest, even while placing IVs, administering medications, and managing the patient’s breathing. The OMD has set the benchmark for time on the chest or chest compression fraction (CCF) at 90% (higher than the current AHA recommendation of 80%). MedStar CCF results reflected in Figure 2.



**FIGURE 2** | Over the last four years, MedStar CCF shows systemwide performance exceeds the AHA goal.



Source - Sudden Cardiac Arrest Foundation



Historical Photo



In addition to monitoring, measuring, and quality assuring overall 9-1-1 system performance, OMD’s responsibilities extend to the larger public health environment with the monitoring of our community’s critical involvement in the chain of survival for cardiac arrest in particular, as well as bystander CPR and the use of public access defibrillation (PAD).

To accomplish this, the entire system participates in the Cardiac Arrest Registry to Enhance Survival (CARES), which allows for the benchmarking of our community’s performance against national survival statistics. Figure 3 shows a continuous improvement in the rates of bystander CPR, bystander automated external defibrillator (AED) use, and neurologically intact survival, all of which exceed national averages.



FIGURE 3 | 2019 Preliminary Cares Data

Utstein-style guidelines use an established consensus process, endorsed by the international resuscitation community, to facilitate and structure resuscitation research and publication.

## AIRWAY MANAGEMENT

Pre-hospital advanced airway management for patients unable to effectively breathe on their own remains challenging for all EMS systems across the country. While anesthesiologists and emergency physicians spend years in training developing these skills in the relatively controlled and supervised environments of an operating room or emergency department, our EMS and first responder personnel have to perform these procedures in some of the most challenging situations imaginable, whether in the streets or in our homes.

While many systems rely solely on their EMS providers’ subjective assessment to measure the effectiveness of airway management, our system personnel are provided sophisticated electronic guidance and measuring tools that ensure effective performance. Figure 4 shows the significant improvement in the rate of unrecognized failed airways. This improvement is a direct result of a continuous and focused quality improvement initiative on recognition of airway placement.

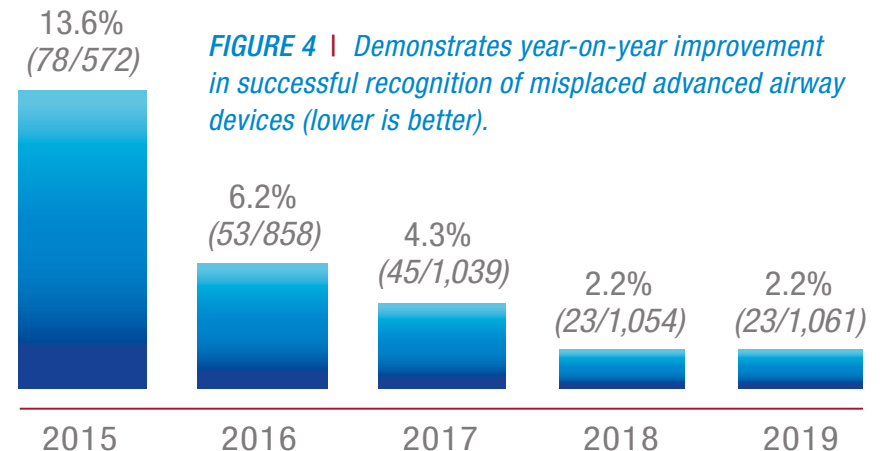


FIGURE 4 | Demonstrates year-on-year improvement in successful recognition of misplaced advanced airway devices (lower is better).

# LEADERSHIP



## EXECUTIVE TEAM:

- Douglas Hooten, CHIEF EXECUTIVE OFFICER
- Dr. Veer Vithalani, INTERIM MEDICAL DIRECTOR
- Dwayne Howerton, OMD CHIEF OF STAFF
- Steve Post, CHIEF FINANCIAL OFFICER
- Kristofer Schleicher, GENERAL COUNSEL
- Kenneth Simpson, CHIEF OPERATIONS OFFICER
- Matt Zavadsky, CHIEF STRATEGIC INTEGRATION OFFICER

## MANAGEMENT TEAM:

- Chad Carr, COMPLIANCE OFFICER, PARALEGAL
- Christopher Cunningham, FIELD OPERATIONS MANAGER
- Shaun Curtis, SUPPORT SERVICES MANAGER
- William Gleason, CLINICAL QUALITY MANAGER
- Ricky Hyatt, MEDICAL RECORDS MANAGER
- Dr. Brian Miller, INTERIM ASSOCIATE MEDICAL DIRECTOR
- Desiree Partain, MOBILE INTEGRATED HEALTHCARE MANAGER
- Leila Peoples, HUMAN RESOURCES MANAGER
- Michael Potts, RISK AND SAFETY MANAGER
- Pete Rizzo, INFORMATION TECHNOLOGY MANAGER
- Dale Rose, COMMUNICATIONS MANAGER
- Misti Skinner, CONTROLLER
- Heath Stone, ASSISTANT FIELD OPERATIONS MANAGER
- Bob Strickland, BUSINESS INTELLIGENCE MANAGER
- Susan Swagerty, BUSINESS OFFICE MANAGER
- Jennifer Terry Balcazar, CUSTOMER AND COMMUNITY RELATIONS MANAGER
- Macara Trusty, EDUCATION AND COMMUNITY PROGRAMS MANAGER



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