



MEDIC

Mecklenburg EMS Agency

FY '18 ANNUAL REPORT

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Cover photo: Jamaar Knowlden, patient Caitlin Ainsworth, Luke Danek and Jackson Langevoort

FY '18 MILESTONES

Re-accredited by the Commission on Accreditation of Ambulance Services (CAAS)

Re-accredited by the International Academies of Emergency Dispatch

American Heart Association Mission Lifeline Gold Plus Award

American Heart Association Workplace Health Achievement Bronze Award

Healthiest Employer Award from the Charlotte Business Journal

American Ambulance Association AMBY Award

National Association of Counties Award (NACo)

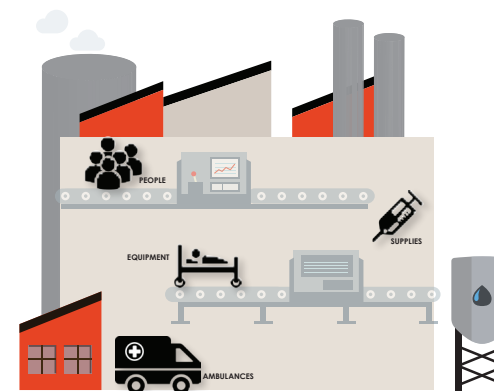
Agency host for the 2018 EMS Today Conference

Relocated to new Agency headquarters in January 2018



TO SAVE A LIFE, HOLD A HAND AND BE PREPARED TO RESPOND IN OUR COMMUNITY WHEN AND WHERE OUR PATIENTS NEED US.

- MEDIC'S MISSION



FY '18 marked the end of one historic chapter and the beginning of another. The transition to Medic's new headquarters is a testament to the substantial growth in demand for the Agency's services, which has increased by 34% in the past five years. The new facility not only gives Medic the space needed to handle future growth, it also provides the flexibility to improve the efficiency with which we produce ambulance unit hours.

A unit hour consists of a fully stocked ambulance paired with a crew of clinicians ready to work. Ambulances must be fully restocked and returned to a ready-state following each shift. How well our teams do this work is critical to the Agency's ability to meet the demands of the community. Similar to a factory that must manufacture enough product to fulfill orders, Medic produces ambulance unit hours to respond in the community when and where they are needed.

I am pleased with all of the Agency's success in improving efficiency during the past year. In addition to the workflow improvements achieved in the new building, Medic also collaborated with partner agencies to reduce unnecessary responses, which resulted in more resources being in position to serve our patients.

I have never been more proud of the system we have in place and, most importantly, the dedication and preparedness it took to get us here. I am delighted to present the accomplishments of the past fiscal year and look forward to what the next chapter brings.

JOSEF (JOE) H. PENNER
Executive Director



AGENCY OVERVIEW

Medic plays many roles in our community. Each layer of responsibility helps to keep Mecklenburg County visitors and residents safe while maintaining the appropriate levels of coverage at all times.

EMERGENCY MEDICAL DISPATCH

Medic maintains a state-of-the-art 911 communication center that is accredited by the International Academies of Emergency Dispatch (IAED). The Agency's certified telecommunicators are extensively trained to provide life-saving instructions to a caller before the arrival of first responders.

EMERGENCY FIRE DISPATCH

Medic's 911 communication center is also accredited in emergency fire dispatch by the IAED. Medic processed and dispatched 4,486 fire-related calls in FY '18.

911 RESPONSE & PATIENT CARE

Medic processed and responded to 149,680 emergency medical calls in FY '18. Medic clinicians treated and transported a total of 114,091 patients to 10 different emergency departments in and around Mecklenburg County. Some of these patients required life-saving interventions while others needed to be comforted and monitored while enroute to the hospital.

NON-EMERGENCY TRANSPORT

Medic provides both local and long-distance scheduled transports. Transports commonly take place between hospitals, physician's offices, skilled nursing facilities, treatment centers and residences. 20,843 (18%) of Medic's transports in FY '18 were classified non-emergency.

SPECIAL EVENT COVERAGE

Special events often require unique coverage plans to provide large crowds with access to emergency medical services. In FY '18, Medic provided dedicated coverage for numerous events in the county including: the PGA Championship, Speed Street, Taste of Charlotte, Pride Festival, the ACC Championship football game and all Carolina Panthers home games.

TACTICAL TEAM SUPPORT

Medic's team of tactical paramedics are fully integrated with local law enforcement agencies. The Agency invests hundreds of hours per year training to respond to high-risk situations with the Special Weapons & Tactics (SWAT) team, Bomb Squad and Civil Emergency Unit (CEU). This collaboration provides law enforcement with on-the-spot access to advanced medical care should a member of their team or a community member be injured in the line of duty.

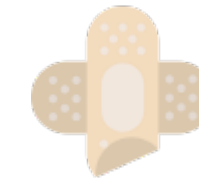
MASS CASUALTY PREPAREDNESS

Medic's team of Special Operations Technicians (SOTs) are prepared with training and assets to manage any mass casualty event. Medic's SOTs are also prepared to respond to incidents anywhere in the Southeast as requested by the North Carolina Division of Emergency Management as part of standing mutual-aid agreements. Medic has two fully equipped mass casualty transport buses and one mass casualty supply truck that can deploy on a moment's notice for days at a time.

AIRPORT EMS TEAM

The Charlotte Douglas International Airport, with an estimated 45 million passengers each year, has multiple dedicated Medic teams embedded in the facility each day. This dedicated coverage provides travelers with immediate access to emergency medical assessment and care while eliminating hundreds of unnecessary responses to the airport each year.

MEDIC: AT A GLANCE...



1,076,837
RESIDENTS IN THE SERVICE AREA



68%
PATIENTS WHO RATED OVERALL QUALITY OF CARE AS "EXCELLENT"



149,680
RESPONSES



114,091
TRANSPORTS



588
EMPLOYEES

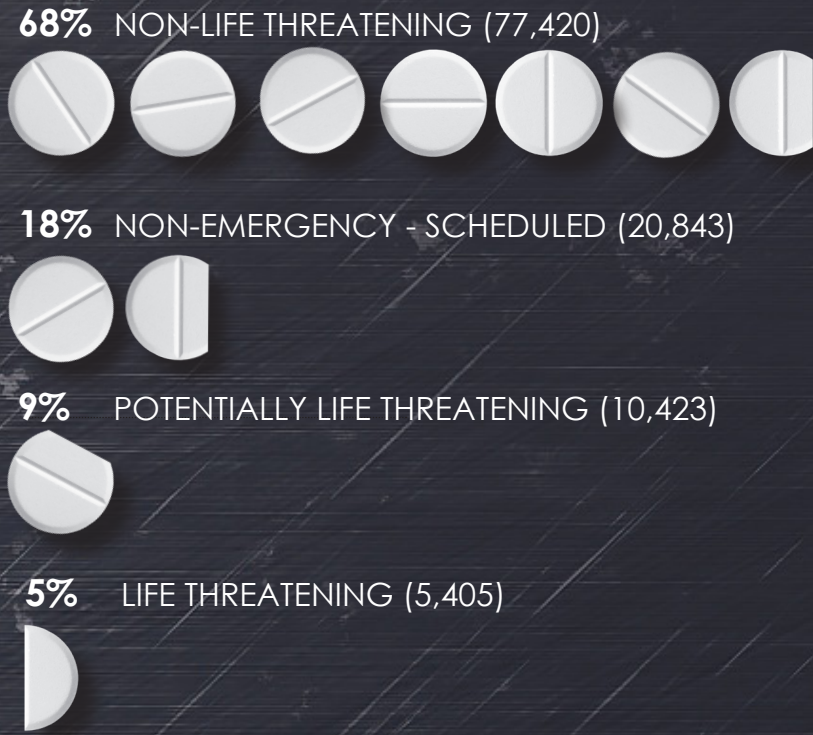


10
EMERGENCY DEPARTMENTS SERVED



109
EMERGENCY RESPONSE ASSETS

RESPONSE AND TRANSPORT



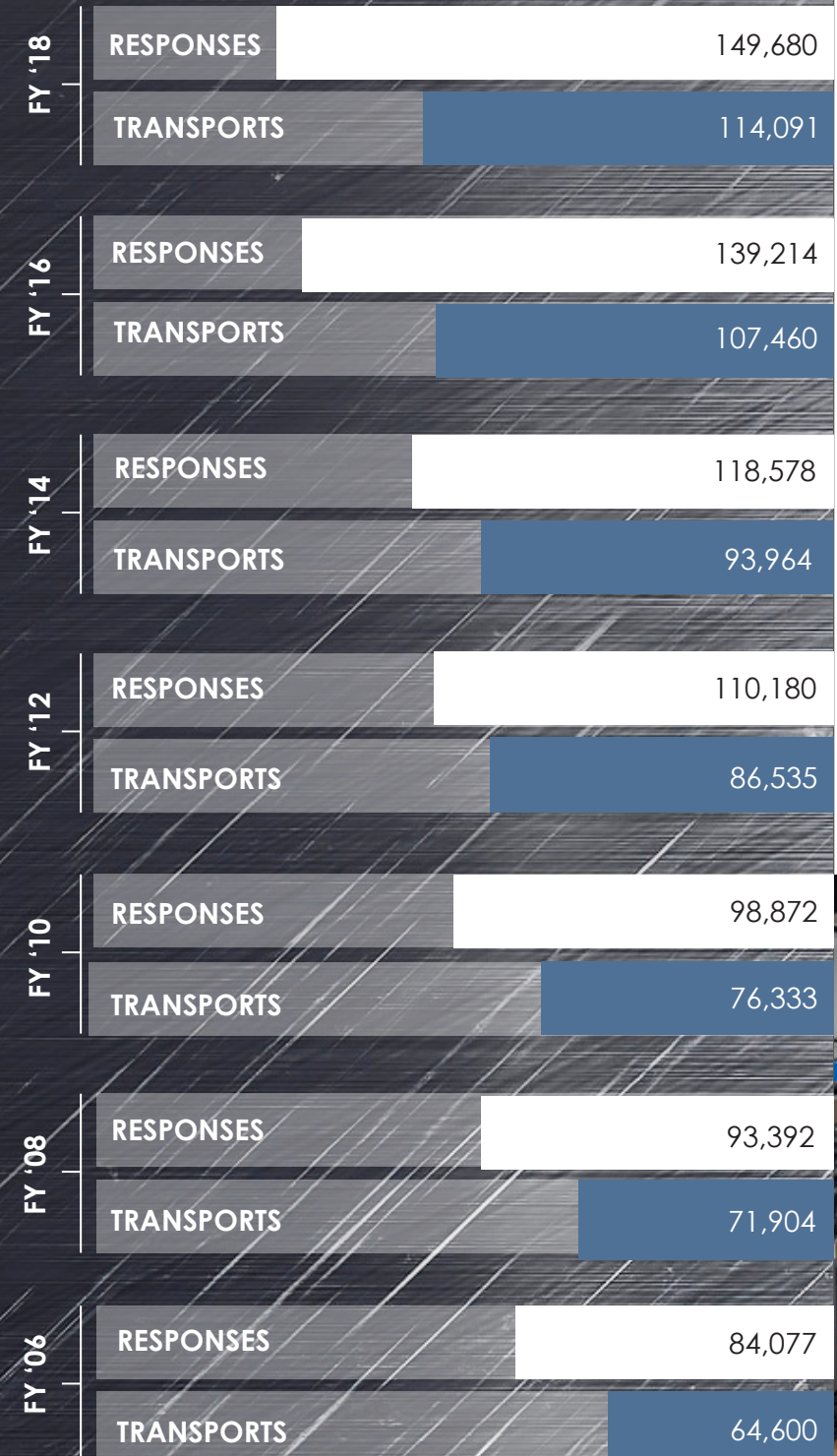
114,091
EMS TRANSPORTS

149,680
EMS RESPONSES

RESPONSE TIME COMPLIANCE: > 90%
GOAL OUTCOME : **MET**



EMS RESPONSE AND TRANSPORT GROWTH



BREAKDOWN OF ALL CALLS DISPATCHED

EMS	149,680
County 1st Responder - Medical	13,653
County Fire Incidents	4,486
Total Dispatched Calls	167,819

TOP TEN 911 CALL TYPES BY PATIENT COMPLAINT

SICK PERSON	14,389
TRAFFIC ACCIDENT/ENTRAPMENT	14,074
FALLS/BACK INJURY	12,140
BREATHING PROBLEMS	11,807
UNCONSCIOUSNESS/FAINTING	11,476
CHEST PAIN	9,190
UNKNOWN PROBLEM/MAN DOWN	7,222
PSYCHIATRIC/SUICIDE ATTEMPT	5,953
OVERDOSE/INGESTION/POISON	4,826
ASSAULT	4,717



STRATEGIC OBJECTIVES

Medic went into FY '18 with three strategic objectives aimed at making improvement to key areas which include reducing unnecessary call volume, upgrading critical data collection tools and maximizing efficiencies at the new Wilkinson Boulevard headquarters.

These areas of focus were identified following an extensive process involving input from Medic staff. This work ultimately yielded a set of projects that would have the greatest impact on achieving the strategic objectives.

Each of the projects were prioritized and timed to ensure necessary resources would be available to achieve success. Many will span multiple fiscal years, allowing ample time for small scale testing, learning and redirection. Medic's disciplined approach to managing change and improvement will help this Agency evolve and thrive regardless of the challenges posed by the ever changing healthcare industry.

1.

STRATEGIC OBJECTIVES

Utilize the flexibility of the new building to improve how we produce and distribute resources, and receive requests for services by the end of June 2018.

PROJECTS

The new warehouse space afforded a complete redesign of the process for building and sealing supply bins for use in restocking ambulances. An assembly line approach was crafted with multiple stations that resulted in a more standardized process and an 81.20% reduction in the amount of time required to build a bin.

The vastly expanded ambulance recovery line enables significantly improved workflow relative to recovering and restocking ambulances between shifts. The newly revamped process enables greater efficiencies to be realized, resulting in a 43.21% reduction in the time required to fully restock an ambulance.

Workflow redesign built around the new facility relative to field crew shift starts and stops has resulted in a 25.49% decrease in late shift changes.

2.

In June 2018 Medic's response and transport volume will be 3.5% less than June 2017.

Implemented an alternative response time protocol to reduce responses to specific call types generated by first responders that have historically had a very low transport rate. Testing in FY '18 showed an 18.6% reduction in unnecessary responses without adverse impact to patient care. Wider scale testing and implementation will continue in FY '19.

Program development and testing began to equip Paramedics with the ability to discuss healthcare options with patients who have low acuity conditions. This process is still in the testing phase while showing early promise; 87.8% of those patients successfully chose other available options as opposed to ambulance transport to an area emergency department. Work will continue in FY '19.

3.

Complete the upgrade of Medic's ePCR and reporting software by the end of June 2018, with minimal disruptions of critical Agency activities.

Significant progress was made with the complex patient care reporting software conversion project. Final product configuration has been reached and work has begun on data capture rules and mandatories while mapping of the new data fields to identical fields in Medic's data warehouse gets underway. The upgrade is slated for completion in August of 2019.

The ePCR software change coincided with Medic's mobile tablets replacement cycle. Mobile tablets are used to temporarily house patient data, collected by caregivers in the field. The project team tested different, ruggedized tablets and selected a model produced by Getac. The Getac tablet is lighter, higher resolution and slightly less expensive than the option previously used by Medic caregivers.

OUR PATIENTS

68%

PATIENTS WHO RATED OVERALL QUALITY OF CARE AS "EXCELLENT"

TARGET:
> 65%

GOAL OUTCOME: **MET**

7:27

AVERAGE PRIORITY ONE TRAUMA PATIENT SCENE TIME

TARGET:
< 10:00

GOAL OUTCOME: **MET**



Providing outstanding patient care is at the core of Medic's role in the community. Whether it be a non-emergency transport to and from radiation treatment or paramedic-level care delivered to someone experiencing an acute medical emergency, the professionals who work at Medic are laser-focused on the needs of the people our Agency serves.

Patient feedback greatly influences the work of this organization. 68% of Medic's patients rated the overall quality of care they received in FY '18 as being excellent when surveyed by an independent third party.

Many patients also feel compelled to connect with the Agency directly following their experience. A total of 681 patients reached out to Medic throughout FY '18 to commend their care providers or arrange a face-to-face reunion.

#DYK

To learn more, visit medic911.com

QUOTES FROM OUR PATIENTS

"Their knowledge of what's going on, my symptoms, they knew what was going on and explained it to me, they did a really terrific job."

- Tim O.

"It was a frightening experience and they were so helpful. [They] kept [our] fears to a minimum and I was very grateful."

- Debbie R.

"Made me feel real confident that I was safe in her hands."

- Cathy T.

"They took care of me immediately, understood what was going on [and] got it under control. [They] were professional. They explained things as they were doing it to put my mind at ease."

- Stephen J.

"When they came to get me, the transition was smooth. They talked to me, [made] me comfortable and reassured me all the way to the hospital."

- Kenya C.

PATIENT REUNION VIDEOS ATTRACTED >35K VIEWS ON SOCIAL MEDIA IN FY '18

A PATIENT STORY: JEFF IRELAND

The day started out like many others, with a tennis match on the agenda. Jeff Ireland was volleying on the court just before his life abruptly changed. Jeff went into cardiac arrest and his playing partner called 911. Assistant CMED Supervisor Erin Mitchell calmly gave bystander CPR instructions until first responders and Paramedics Kyle Gilliam and Kyle Sheehan arrived on the scene. Treatment was continued, including multiple shocks from an AED and ongoing CPR, for 19 pulse-less minutes.

Jeff's heart finally began to beat again prior to arrival at the hospital where he spent 41 days, including 3 weeks in a coma. After recovering, Jeff was able to meet the team of people that saved his life. It was an emotional reunion during which Jeff presented Paramedic Kyle Gilliam with his first ever ROSC pin, which is awarded to Medic caregivers to signify a cardiac arrest save. Jeff credits that life-changing day as the motivation for living every day like it could be his last. He recently authored a book and dedicated it to the caregivers who saved his life.



Kyle Sheehan, Jeff Ireland and Kyle Gilliam

OUR PEOPLE

Medic's status as an industry leader is a direct result of our skilled workforce. This is no accident. Medic uses a multi-faceted approach to recruit, educate and foster ownership of the Agency's mission by each and every employee. Medic's culture of high standards and individual accountability helps yield lower turnover, higher employee satisfaction and some of the best patient outcomes in the country.

Each year, Medic recognizes multiple employees for outstanding achievements and their commitment to fulfilling our purpose. In FY '18, award winners were:

American Ambulance Association's Star of Life: **Tim Brake, Nick Heasley and Sharon Taulbert**

Burnette-Nobles: **Lester Bailey**

Top Call: **Max Adams and Meghan Clark**

Unsung Hero: **Scott Bodien, Darlene Hicks and Veronica Michaelis**

73

EMPLOYEE SATISFACTION
MEAN SCORE
(OUT OF 100)

TARGET:
> 82

GOAL OUTCOME:
DID NOT MEET



INVESTING IN OUR PEOPLE

HIRING PROCESS

Paramedics and EMTs are required to be credentialed eligible before applying at Medic. After which, each candidate must undergo a one-day assessment to be considered for employment. The process includes a written test, physical agility evaluation, trauma scenarios, medical knowledge oral examination and a panel interview. Only 47% percent of assessment day participants are successful and receive an offer to join Medic.

ON-BOARDING

Each new hire at Medic is required to attend an 11-week series of training sessions covering diversity, corporate compliance, departmental overviews, driving, navigation, and field training time. Over the past three years Medic has reduced average on-boarding time from 98 days to 77 days by improving the efficiency of curriculum delivery without compromising the quality of education.

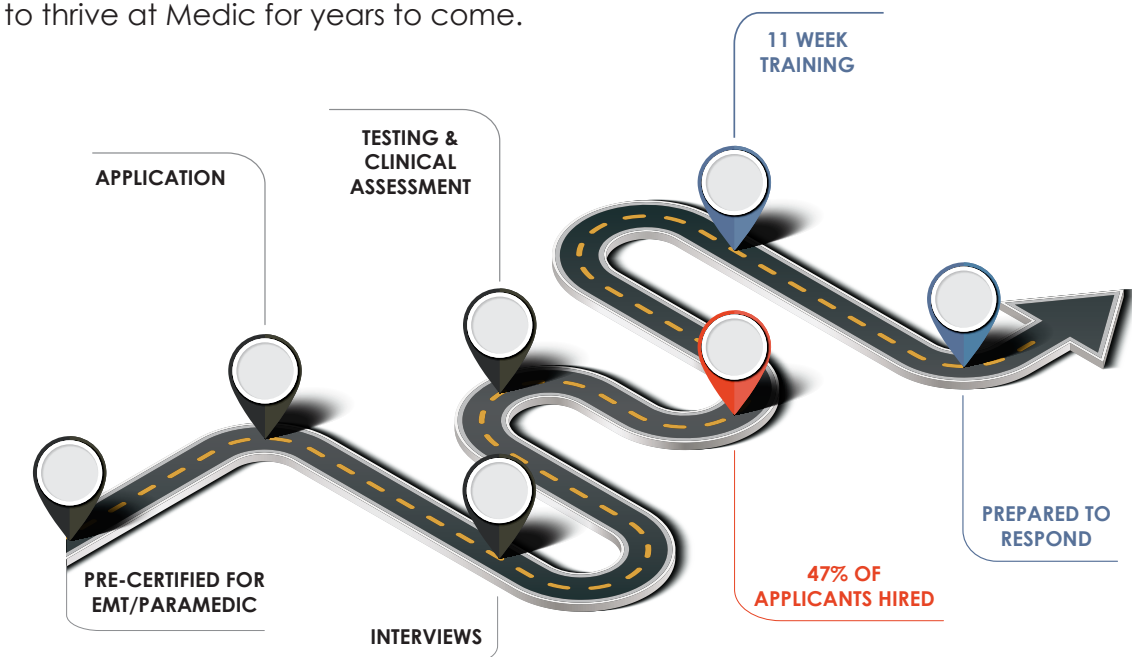
CAREER DEVELOPMENT

Agency employees are afforded a variety of unique opportunities to thrive at Medic for years to come.

For example, Medic launched the Paramedic Incentive Program in November of 2017 to make it easier for EMTs to pursue their next certification while maintaining full-time employment with the Agency. The program eliminates roadblocks by providing an adjusted schedule to accommodate school commitments, tuition reimbursement, funds to purchase books and materials and a sign-on bonus following successful graduation. To date, the program has enrolled 45 of Medic's current EMTs.

CONTINUING EDUCATION

Medic employees receive 38 hours of fully-paid continuing education hours each year, which is more than required by the State of North Carolina. All continuing education is provided in house and allows Medic to control the quality and relevancy of the training curriculum. Medic also benefits from an on-site, state-of-the-art simulation center that enables scenario based training, bringing unparalleled realism to the training environment.



MEDICAL EXCELLENCE

Medic's performance with cardiac arrest care continued to excel far above the national average in FY'18, with 81% of such patients (Utstein Template) regaining a pulse prior to hospital arrival. To reach and sustain this remarkable rate of success, the Agency monitors key performance metrics and provides feedback to crews following each case.

Medic also excels at diagnosing and caring for heart attack victims, posting some of the fastest times to treatment at a percutaneous coronary intervention (PCI) center in the country. There is a familiar saying among healthcare providers when it comes to heart attack patients: time is tissue. This refers to the fact that a blocked blood vessel slows blood flow to the heart and often results in heart tissue being permanently damaged, leading to long term health issues.

It is for this reason that Medic tracks time to PCI intervention starting with 911 call pick-up as apposed to time of patient contact by EMS, which is the current industry standard.



INDUSTRY - LEADING RESEARCH

The time it takes for a patient experiencing a heart attack to receive intervention at a hospital matters greatly. Though this is a widely known fact, the specific impact that EMS providers have on the long-term prognosis for heart attack victims has never been clearly established. Medic recently completed a study to try and clarify this linkage.

A total of 550 heart attack victims in Mecklenburg County were included in Medic's research project. The objective of the study was to determine if differences in mortality at one year post-intervention existed based on variation in the time interval of 911 call pick up to treatment.

Results indicated that the likelihood of survival at one year post-intervention decreased by 3% for every one minute increase in time to treatment. The results of this study were published in Prehospital Emergency Care in February of 2018.

#DYK

To learn more, visit medic911.com

MEDIC'S ROSC RATE IS AMONG THE TOP 1% IN THE NATION

88:25

HEART ATTACK:
TIME BETWEEN RECEIVED 911 CALL
AND CATH LAB INTERVENTION

TARGET:
< 90:00

GOAL OUTCOME : **MET**

93%

HEART ATTACK:
PREHOSPITAL
DETERMINATION

TARGET:
> 85%

GOAL OUTCOME : **MET**

81%

PATIENTS IN CARDIAC ARREST
WHO ACHIEVE ROSC*

TARGET:
> 40%

GOAL OUTCOME : **MET**

*ROSC: Return of Spontaneous Circulation
- Utstein Template

NEW HEADQUARTERS

- 181,073 total square feet
- Three structures situated on 20 acres of land
- Environmentally friendly design
- Secure, covered parking for up to 94 emergency response assets
- Capable of launching hundreds of ambulance shifts per day with greater efficiency
- Accommodates Medic's 588 current employees with ample room to grow
- Location provides improved access to high call volume areas
- Original building constructed in 1952 as a Ford Motor Company factory



MAKING THE MOVE

In January of 2018, Medic's staff transitioned from the Agency's Statesville Road headquarters to a brand new, custom-built facility on Wilkinson Boulevard. The move to this 181,000 square foot, state-of-the-art facility was the culmination of over two years of collaboration between Mecklenburg County, Medic, ADW Architects and Edifice Construction.

The building was designed to provide at least 25 years of growth capacity for Agency operations while maintaining the ability to accommodate future changes and improvement of workflow. There was a tremendous amount of employee input gathered during the design process, resulting in a building that best addresses the needs of employees.

The move itself occurred in stages and was managed over a three week time-frame. The most complex component of this process was moving the Agency's 911 emergency medical dispatch center. In order to do this without interruption to service, a plan was orchestrated and implemented by Medic's Information Technology and 911 Communication Center teams involving use of the Agency's emergency 911 backup center. The transition went flawlessly.

Medic celebrated the new facility with an April ribbon cutting ceremony that included Agency employees, County officials, County and Agency Board members, Agency partners and various members of the community.



COMMUNITY ENGAGEMENT

Medic actively engages with the community in many meaningful ways including bystander CPR trainings, educational opportunities, and in support of various community initiatives. These efforts meet the diverse population of Mecklenburg County in their neighborhoods and businesses and provide opportunities to share information that can make a significant difference in a life or death situation.

FY '18 HIGHLIGHTS

- Partnered with North Carolina Office of EMS and Cardinal Health to distribute Narcan kits in the community
- Led presentations at multiple Title 1 schools detailing employment opportunities within the EMS industry
- Participated in the American Cancer Society's Relay for Life event
- Partnered with Charlotte-Mecklenburg Schools to incorporate EMS operations into the school's public safety curriculum
- Collaborated with Atrium and Novant to provide heart health educational resources during the American Heart Walk
- Trained attendees of the UNC Charlotte Health Fair in bystander CPR



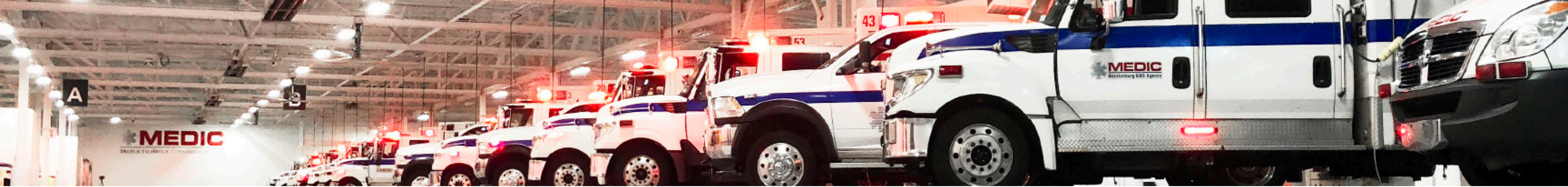
NARCAN DISTRIBUTION

Though our providers usually encounter patients after an emergency occurs, Medic also seeks proactive approaches to stop tragedies before they happen. This year, Medic joined forces with the North Carolina Office of EMS and Cardinal Health to combat the alarming rise in opioid-induced overdose deaths.

In April 2018, the Agency began to distribute doses of Narcan in the community when field providers encountered people who are at a high risk for opioid overdose. In addition to administration instructions, Agency personnel also provide information on resources available in the community to assist those dealing with addictions.

As of June 30, 2018, Medic had distributed 287 Narcan kits in Mecklenburg County, averaging 17 per week. There have already been 20 documented cases of a Narcan kit being appropriately used by a bystander on scene prior to EMS arrival.

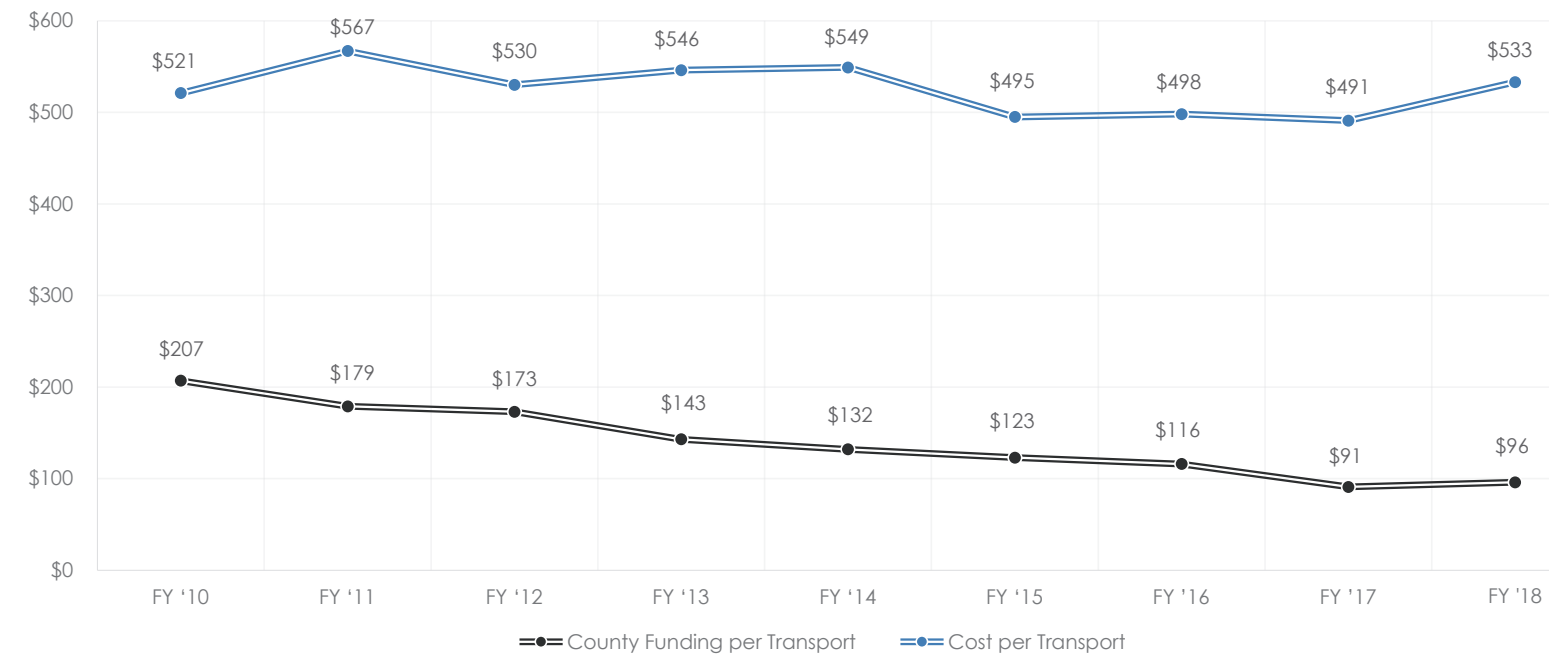




OUR STEWARDSHIP

COST PER TRANSPORT

Agency funding comes from two primary sources: fees for services provided and county funding. Medic's reliance on county funding has reduced considerably over the years, a testament to the Agency's improved efficiencies with both service delivery and revenue cycle management. The Agency reduced county funded transport costs from \$207 in FY'10 to \$96 in FY'18.



PERFORMANCE AGAINST PLAN

Building Medic's budget centers on two drivers: what the predicted demand for service will be for the fiscal year, and what improvement work the Agency is going to invest in. With these elements established, Agency leaders then build a budget to accomplish the set targets for the year.

FY '18 MODIFIED ACCRUAL FINANCIAL STATEMENTS ADJUSTED FOR ENCUMBRANCES

	Adopted Budget	Actual
REVENUE		
County Subsidy	10,959,729	10,959,729
Transport Revenue	41,251,378	40,676,986
Medicaid Cost Report	4,555,162	4,009,993
911 Surcharge Funds	350,250	299,901
Other Income	1,454,969	1,610,932
Fund Balance	1,602,925	1,602,925
Total Revenue	60,174,413	59,160,466
EXPENDITURES		
Labor and Labor Related	46,300,498	44,972,386
Operating	11,267,376	11,185,656
Capital	2,606,539	2,598,615
Total Expenditures	60,174,413	58,756,657
TOTAL EXCESS REVENUE v. EXPENDITURES	0	403,809



Photo by Deanna Vandeventer



FY '18 LEADERSHIP

AGENCY BOARD OF COMMISSIONERS

- Amy Vance, Chair – NH
- Katie Kaney, Vice Chair – AH
- Alishaha Cole, MD – AH
- Mark Foster – MC
- Matthew Hanley, MD – AH
- Paula Vincent – NH
- Tom Zweng, MD – NH

AGENCY MANAGEMENT COMMITTEE

Voting Members

- Amy Vance – NH
- Katie Kaney – AH
- Derrick Ramos – MC

Non-Voting Members

- Joe Penner – EMS
- Doug Swanson, MD – EMS
- Shelly Forward – EMS

FINANCE COMMITTEE

Voting Members

- Bill Lyle – AH
- Mark Foster – MC
- Peter Ostiguy – NH

Non-Voting Members

- Shelly Forward – EMS
- Joe Penner – EMS

AGENCY OFFICERS

- Joe Penner, Executive Director
- Doug Swanson, MD, Medical Director
- Shelly Forward, Finance Manager, Budget Officer

LEGEND

- Atrium Health (AH)
- Novant Health (NH)
- Mecklenburg County (MC)
- Mecklenburg EMS Agency (EMS)

MEDICAL CONTROL BOARD

Voting Members

- Mike Gibbs, MD, Chair – AH
- Eric Eskioglu, MD – NH
- Sid Fletcher, MD – NH
- Sandra Giller, MD – NH
- Gary Niess, MD – NH
- David Pearson, MD – AH
- Bradley Thomas, MD – AH
- Brad Watling, MD – AH

Non – Voting Members

- Joe Penner – EMS
- Doug Swanson, MD – EMS
- Gibbie Harris, Health Director – MC
- Reggie Johnson, City of Charlotte Fire Dept.
- David Leath – Mint Hill Volunteer Fire Dept
- Jason Schwebach – AH
- Tracy Foster – NH
- Community Representative

QUALITY MANAGEMENT COMMITTEE

Voting Members

- Doug Swanson, MD – EMS
- Mike Gibbs, MD – AH
- Eric Hawkins, MD – AH
- Richard Jacoby, MD – NH
- Jason Mutch, MD – NH
- Stephen Wright, RN – AH

Non-Voting Members

- Joe Penner – EMS
- Gibbie Harris – MC
- Kevin Staley – EMS
- Jon Studnek – EMS

Photo by Dan Sun



Mecklenburg EMS Agency (Medic)

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704-943-6000

OUR PATIENTS. OUR PEOPLE. OUR STEWARDSHIP. OUR PURPOSE.

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