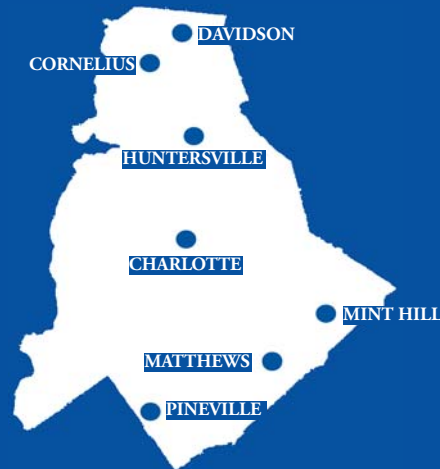




Medical Excellence. Compassionate Care.

Mecklenburg EMS Agency FY 2013 Annual Report



Celebrating 35 Years of Medical Excellence and
Compassionate Care to Mecklenburg County



9

Emergency Departments Served

920

Total Number of Lay Persons Trained in CPR

114,579

Calls for Service

Medic FY 2013 Fast Facts

503

Medic Employees

70%

Percentage of Patients Surveyed Who Rated Medic's Service as Excellent

91,558

Patient Transports

999,060

Mecklenburg County Residents Served

Medic's Vision Statement

Medic will be a patient-centered system that achieves evidence-based quality outcomes by investing in our workforce, leveraging multiple resources and collaborating with the community.



Carolinus HealthCare System



N NOVANT
HEALTH

For an organization to be successful, everyone within it must be uniformly focused on the same overarching set of objectives. I believe we have that clarity here at Mecklenburg EMS Agency (Medic), and this should be evident through the goals and results outlined on the following pages. It is my desire for anyone reviewing this annual report to come away knowing that this community has the right people looking out for them and their emergency medical needs.

Medic is very much a data driven organization; whether managing day to day operations or strategic improvement initiatives, everyone within Medic is keyed in on appropriate measures to monitor Agency performance vs. expectations. Nowhere is this more apparent than with the outcomes this Agency has achieved related to cardiac emergencies. Medic not only leads the state of North Carolina in survival for out of hospital sudden cardiac arrest patients, but our results are among the top 1% of all EMS Agencies nationwide. The same can be said for our time to treatment for heart attack victims.

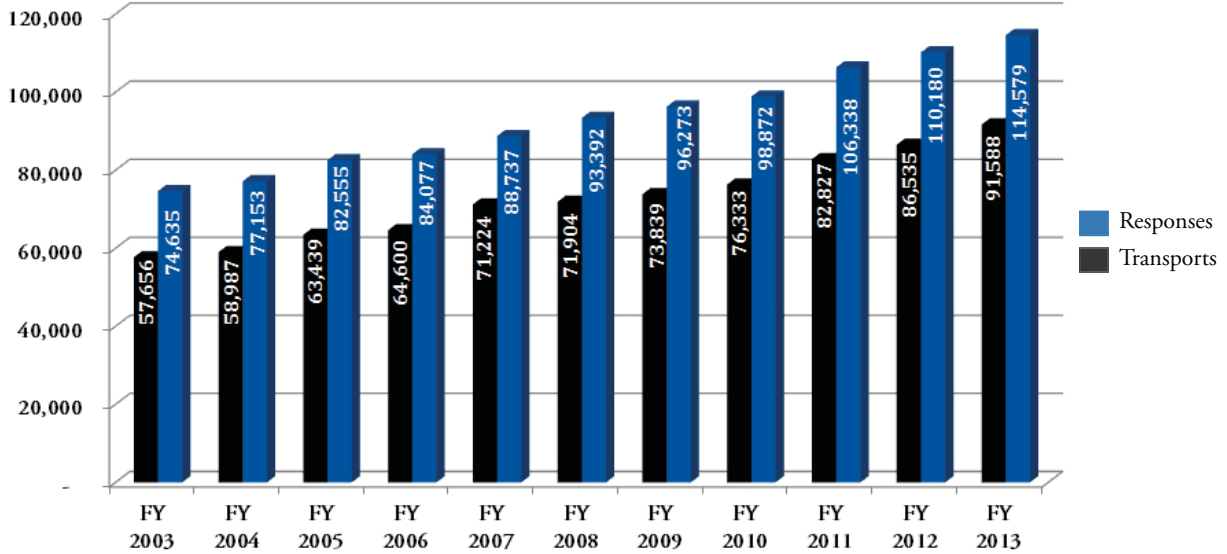
I am particularly proud of this past year's performance seeing as these results were achieved while simultaneously managing the enormous responsibilities associated with supporting the Democratic National Convention (DNC) in Charlotte this past September. This Agency maintained its performance requirements across Mecklenburg County throughout the DNC despite the tremendous resource allocation required to support a localized National Security function; that is a testament to the planning and commitment of every employee in this Agency.

I hope the information shared through this report makes you proud to call Medic your EMS Agency. On behalf of all of our employees, thank you for the opportunity to serve the residents and visitors of Mecklenburg County.

Josef Penner
Executive Director, Medic

SERVICE

PATIENT CARE GROWTH



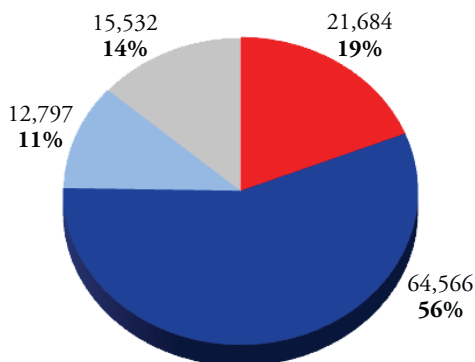
Medic operates the largest and busiest 911 Emergency Medical Services Agency in the state of North Carolina. With over 500 employees, Medic provides emergency medical care each day to more than 1,000,000 residents and visitors to Mecklenburg County.

Overall call volume increased by nearly 6% for the fiscal year. Medic's call volume is primarily divided between emergency calls made into the Agency's dispatch center and scheduled, non-emergency transports (NET). Agency personnel forecast and monitor call volume on a daily, monthly and yearly basis to ensure necessary resource adjustments are made to maximize effectiveness and efficiency levels.

FY 2013 Top Ten Calls by Chief Complaint

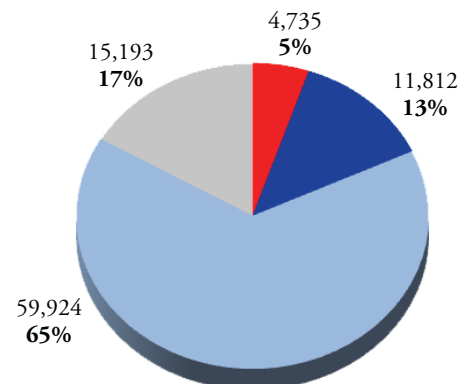
(1) Unconscious/Fainting	10,508 (9%)	(6) Sick Person	6,667 (6%)
(2) Breathing	9,827 (8%)	(7) Unknown Problem	4,976 (4%)
(3) Chest Pain	8,420 (7%)	(8) Abdominal Pain	4,339 (4%)
(4) Traffic Accident	8,006 (7%)	(9) Convulsion/Seizure	4,135 (4%)
(5) Fall/Back Injury	7,902 (7%)	(10) Assault	3,549 (3%)

Responses By Priority

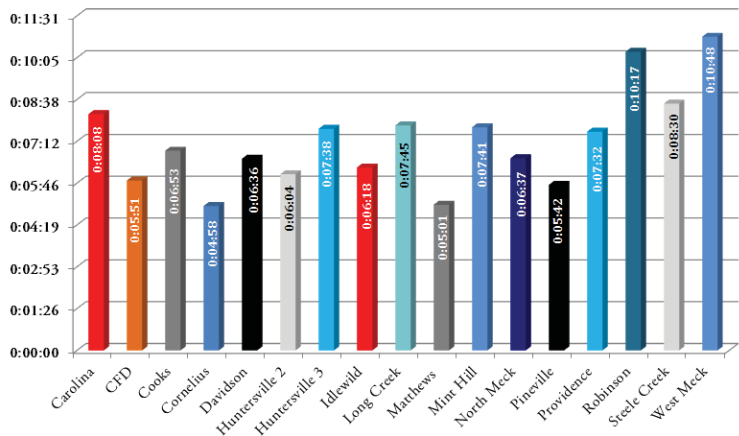


Priority Levels
P1 - Life Threatening
P2 - Potentially Life Threatening
P3 - Non-Life Threatening
NET - Non-Emergency Transport

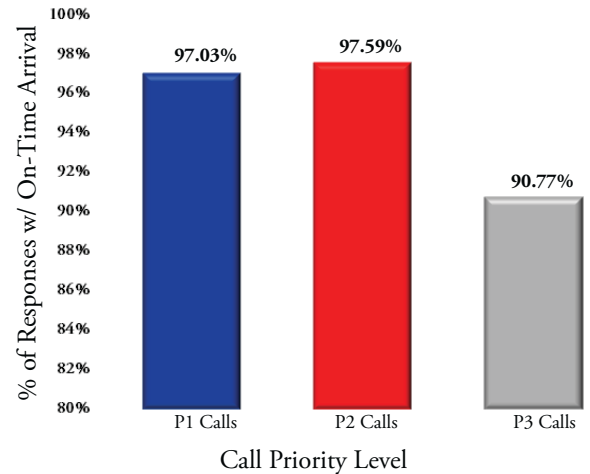
Transports By Priority



FY 2013 Response Times By First Responder Dept



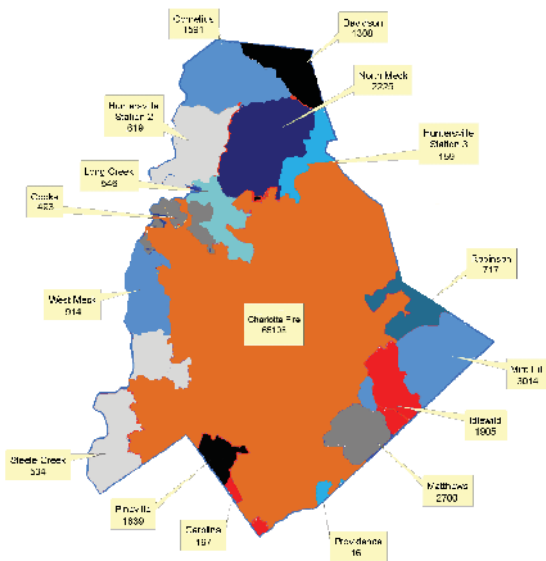
Medic County Contract Compliance



Emergency Dispatch (Communications)

The first line of care provided to patients who call 911 for a medical emergency in Mecklenburg County occurs in Medic’s Central Emergency Medical Dispatch Center (CMED). It is here that all incoming calls are processed and triaged, ultimately resulting in appropriate resource allocation and pre-arrival instructions from a certified Emergency Medical Dispatcher (EMD).

Medic’s EMDs follow very strict protocols designed by the National Academies of Emergency Dispatch (NAED). This strategy ensures consistent processes are followed by all Agency personnel in addition to providing a very strong platform for conducting post call quality assurance checks. Medic’s EMDs collectively posted a compliance score of 97.48 on a 100 point scale for FY ‘13. The NAED benchmark is 90 in order for a dispatch center to maintain its accreditation.



In addition to its countywide EMS responsibilities, Medic also handles all fire-related dispatch responsibilities in Mecklenburg County outside of the city of Charlotte. It is for this reason that the Agency’s dispatch center also earned Emergency Fire Dispatch accreditation through NAED. Medic is one of only sixteen dispatch centers in the world to hold this dual certification. Medic dispatched 3,125 fire-related calls across Mecklenburg County in FY ‘13.

First Responders

Area first responders play a critical role in the EMS system of care. They provide an additional layer of response capability, assist with patient care and serve as a key partner in the chain of survival. The average response time to EMS-related calls by area first responders was 7:12 in FY ‘13.

The above map shows the number of EMS-related calls Medic dispatched to each of the 17 First Responder areas during FY 2013.

Employee Satisfaction

In FY '13 Medic increased the number of times employee satisfaction was measured from once annually to quarterly. This change was made to provide Agency leadership with more timely feedback relative to the effectiveness of new initiatives and interventions.



Pillar Goal: 81
 FY '13 Performance: 75
 Goal Outcome: **Did Not Meet**

Electronic survey distribution and management was also introduced to the Agency for the first time in FY '13. Employee participation was 64% for the fiscal year; this was significantly higher than expected, given participation was optional. Though the Agency's mean employee satisfaction score fell below the target, there was encouraging movement in key driver areas that suggests the resulting interaction and dialogue between supervisors and employees is having a positive impact on overall employee morale.

Patient Satisfaction

Medic set a new high for patient satisfaction in FY '13, with 70% of all patients independently surveyed rating the Agency's overall care as excellent.



Pillar Goal: 68%
 FY '13 Performance: 70%
 Goal Outcome: **Met**

The three key drivers of patient's perception of care are the overall teamwork between EMS personnel, the knowledge and skill displayed by caregivers and the level of technology available to treat the patient. Medic regularly monitors this data, communicates performance shifts and interventions to employees, and invests in new strategies for impacting the patient's overall satisfaction with the level of care delivered.

Clinical Research and Publications

Patient care at Medic is driven by evidence-based medicine; it is for this reason that the Agency invests considerable time and resources into conducting clinical research. The areas of focus for this research are driven in large part by the Agency's Research Committee, a team that meets monthly and is comprised of Agency leadership, physicians and researchers from both area hospital systems.

Following is a list of the clinical research that Medic published in FY '13:

Papers in Refereed Journals

- Studnek JR, Asimos A, Dodds J, Swanson D (2013). Assessing the Validity of the Cincinnati Prehospital Stroke Scale and the Medic Prehospital Assessment for Code Stroke in an Urban Emergency Medical Services Agency. *Prehospital Emergency Care*. 17(3):348-53.
- Studnek JR, Fernandez AR, Vandeventer S, Davis S, Garvey L (2013). The Association between Patients' Perception of their Overall Quality of Care and their Perception of Pain Management in the Prehospital Setting. *Prehospital Emergency Care*. 17(3):348-53.
- Studnek JR, Watts J, Vandeventer S, Pearson D (2012). Assessing the Influence of Insulation upon Intravenous Fluid Infusion Temperature. *Academic Emergency Medicine*. 19(11):1309-12.

Papers in Press

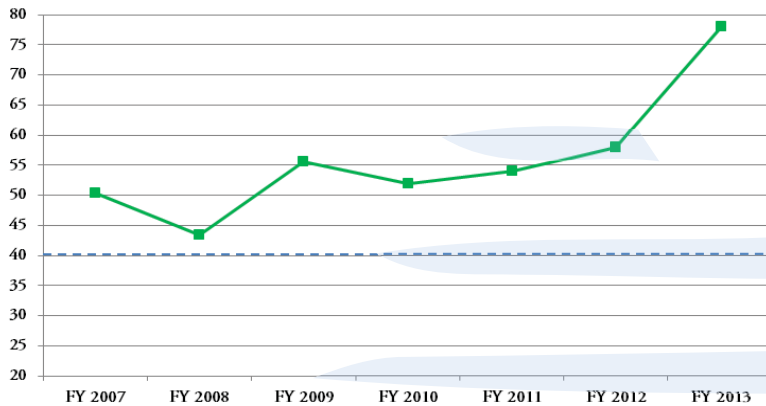
- Infinger A, Studnek JR, Hawkins E, Vandeventer S, and Swanson D (2013). Implementation of Prehospital Dispatch Protocols to Triage Low Acuity Patients to Advice Line Nurses. *Prehospital Emergency Care*.

Refereed Abstracts

- Pearson, DA, Runyon MS, Studnek JR, Ward SL, Kraft KM, Heffner AC (2013). Emergent CT Does Not Delay Cooling In Patients After Cardiac Arrest. Poster Presentation at the annual meeting of the Society for Academic Emergency Medicine.
- Pearson, DA, Runyon MS, Studnek JR, Ward SL, Kraft KM, Heffner AC (2013). Lactate Clearance Is Not Prognostic In Cardiac Arrest Patients. Poster Presentation at the annual meeting of the Society for Academic Emergency Medicine.
- Studnek JR, Vandeventer S (2013). The Timing of Prehospital Initiation of Therapeutic Hypothermia Intra-arrest versus Post-arrest: a Randomized Controlled Trial. Poster presentation at the annual meeting of the National Association of Emergency Medical Service Physicians.
- Studnek JR, Asimos A, Dodds J, Swanson D (2013). Assessing the Validity of the Cincinnati Prehospital Stroke Scale and the Medic Prehospital Assessment for Code Stroke in an Urban Emergency Medical Services Agency. Poster presentation at the annual meeting of the National Association of Emergency Medical Service Physicians.
- Infinger A, Studnek JR, Hawkins E, Vandeventer S, and Swanson D (2013). Implementation of Prehospital Dispatch Protocols to Triage Low Acuity Patients to Advice Line Nurses. Poster presentation at the annual meeting of the National Association of Emergency Medical Service Physicians.

Cardiac Arrest: ROSC/Utstein

Medic continues to make tremendous progress with regard to outcomes for out of hospital cardiac arrest victims. Extreme clarity related to the key drivers of excellent CPR and subsequent communication and training for field personnel is largely responsible for these gains.

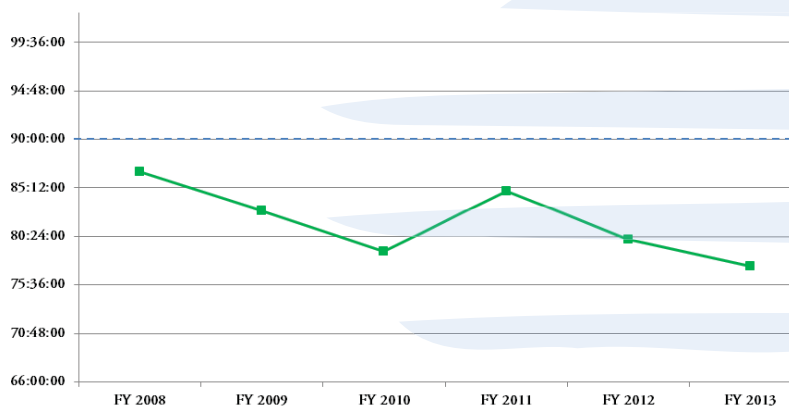


Pillar Goal: 40%
 FY '13 Performance: 78%
 Goal Outcome: **Met**

This past year Medic's first responders were retrained in performing high-quality CPR at adequate depth and strategies for reducing rotation time between compression cycles, while paramedics were trained on reducing time to defibrillation and pre-charging the defibrillator at the 180th compression. Of those patients who presented a witnessed ventricular fibrillation cardiac arrest, 78% achieved prehospital ROSC with 55% surviving to hospital discharge.

Cardiac Triage Composite: Call Pick Up in CMED to Lesion Treatment ≤90 minutes

The amount of time from when an individual begins to experience symptoms of a heart attack until definitive treatment is received at a cardiac catheterization lab is directly linked to a patient's overall outcome.

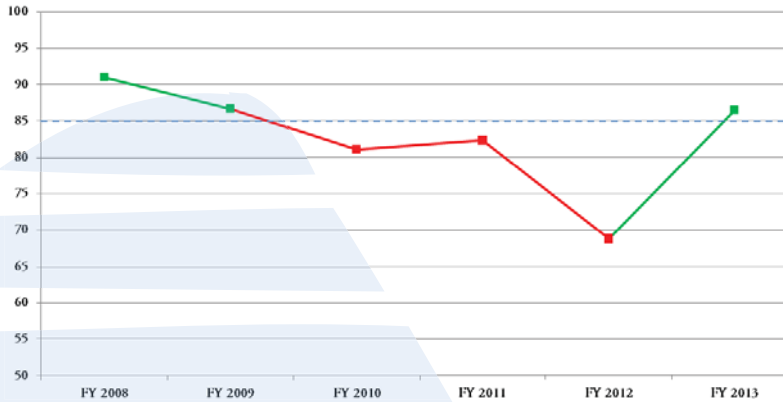


Pillar Goal: ≤90 minutes
 FY '13 Performance: 77:28
 Goal Outcome: **Met**

Medic works closely with both area hospital systems to enable its paramedics to bypass the emergency department and take patients directly to the catheterization lab for treatment. On average, patients experiencing a heart attack who are treated by Medic receive catheterization in less than 78 minutes from their initial phone call into the Agency's 911 dispatch center. This is significantly better than the national standard of less than 90 minutes from initial patient contact by first responders. The overall system performance in Mecklenburg County is undeniably among the best in the country.

Cardiac Triage Composite: Accurate Determination Prehospital

Accurately determining if a patient is experiencing the type of heart attack that would benefit from rapid cardiac catheterization is an important component in the overall process that helps speed treatment for the sickest patients.

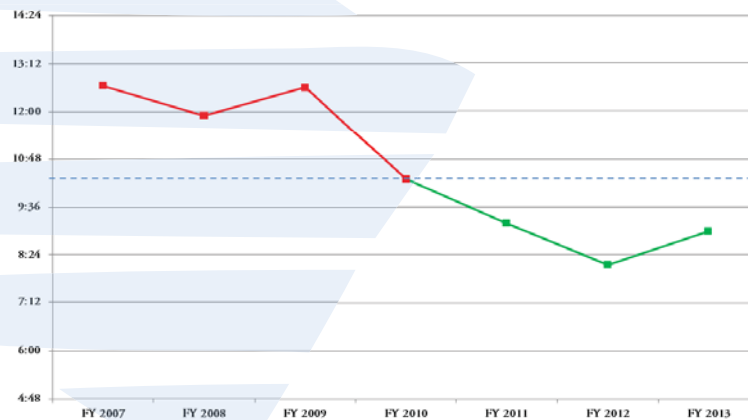


Pillar Goal: > 85%
 FY '13 Performance: 86%
 Goal Outcome: **Met**

Thanks to focused in-service training on 12-lead interpretation coupled with sensitivity modifications made to the software on all Agency 12-lead monitors, Medic's paramedics exceeded the target in FY '13, correctly interpreting patient 12-leads 86% of the time.

P1 Trauma Scene Time

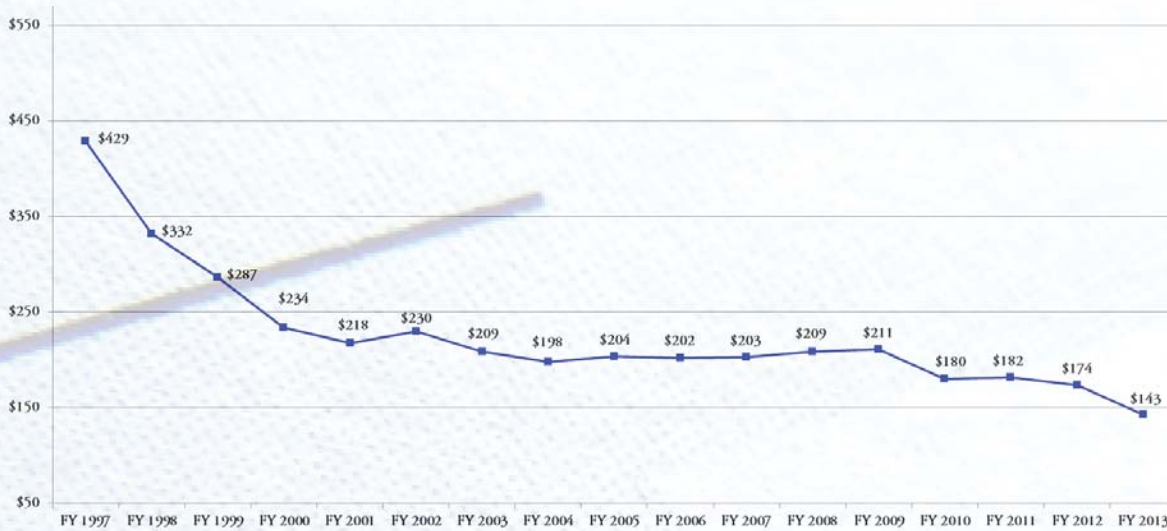
It is crucial that high acuity trauma patients receive diagnostic and interventional care in an emergency department as quickly as possible following injury. That's why Medic trains its caregivers and first responders to assess, package and treat high-priority trauma patients quickly and safely with a goal of spending less than ten minutes on scene.



Pillar Goal: ≤ 10:00 minutes
 FY '13 Performance: 8:59
 Goal Outcome: **Met**

In FY '13 it took Medic paramedics, on average, less than nine minutes to recognize an acute trauma patient, begin treatment and initiate transportation. This helps to ensure that high-priority trauma patients are able to receive definitive treatment in an emergency department within the first 60 minutes after the occurrence of a major trauma.

County Funded Cost Per Transport By Fiscal Year



Service	FY 2013 Operating Budget	% of Total City/ County Budget	Total Population Served	Per Capita	Property Tax Funded/Rate
Fire	\$103,213,100	6.07%	796,921	\$129.51 (per person)	\$0.12
Police	\$211,714,774	12.45%	796,921	\$265.67 (per person)	\$0.24
Medic	\$51,255,414	3.00%	999,060	\$51.30 (per person)	\$0.01

Medic’s county funding for FY ‘13 was \$13,080,000. The remaining funds required to support Agency operations were generated through fees for service from sources such as private paying customers, commercial insurance, Medicare and Medicaid.

Medic’s Leadership spends a great deal of energy strategizing on ways to improve the effectiveness and efficiency of the Agency to continue minimizing reliance on county funding. To this point, county funding on a per transport basis continued to drop in FY ‘13, hitting a new low at \$143 per.

Medic brought all billing related activity in-house in 2012. As a result, we have gained efficiencies and experienced significant improvement in our overall accounts receivable performance. The following improvements have resulted in more predictable revenue cycle performance, increased cash flow and less reliance on county funding:

- Enhanced patient demographic and insurance data by utilizing an HL7 match process with both hospital systems; current match percentage is at 92%
- Increased our accounted for funds to 73%, a 10% increase over the results generated by Medic’s former billing company
- Reduced claim denials to 3% of gross revenue

	FY 2013	FY 2012
Current & Other Assets	\$20,264,789	\$22,009,970
Capital Assets	\$6,852,708	\$6,688,590
Total Assets	\$27,117,497	\$28,698,560
Liabilities & Other Post Employment Benefits	\$23,010,028	\$17,212,369
Total Liabilities	\$23,010,028	\$17,212,369
Restricted & Unrestricted Net Assets	(- \$2,745,240)	\$4,797,601
Capital & Other Fixed Assets	\$6,852,708	\$6,688,590
Total Net Assets	\$4,107,468	\$11,486,191

Medic Bystander CPR Rates by Fiscal Year



Pillar Goal: $\geq 44\%$
 FY '13 Performance: 39%
 Goal Outcome: **Not Met**

One Voice

Community engagement and education is a critical part of Medic’s strategy for supporting the healthcare needs of this community. More than two dozen Agency employees were trained in FY ‘13 to bring a consistent message to the residents of Mecklenburg County. The message centered on preventative actions and interventions which included bystander CPR awareness. Those paramedics, EMTs and telecommunicators spent over 306 hours out in the community engaging residents about their health, the Agency and the outreach programs it has to offer.

Bystander CPR

Medic’s CPR education program continued to grow through the Agency’s Lucky Hearts Campaign in FY ‘13. The Agency trained 920 people in hands-only CPR and donated its 111th AED through grants received on behalf of Representative Becky Carney, the Charlotte-Mecklenburg Police Department and the Mecklenburg Medical Alliance and Endowment.

The Agency also instated monthly Community CPR Certification classes at Medic in FY ‘13. This new class format gave individual members of the public an opportunity to earn CPR and First Aid certifications at Medic’s Headquarters

New Partnerships

FY ‘13 saw the formation of a new partnership between Medic and the Charlotte chapter of the American Heart Association (AHA); two agencies with clearly aligned goals and objectives. More than a dozen classes have been jointly organized and led by Medic and the AHA since the formation of this partnership.

An initiative to distribute 50 CPR Anytime Kits to local churches was also collectively launched, during which church parishes were taught CPR through a “train the trainer” program. Each church made a pledge to train at least 50 people in their congregation in exchange for being given a free CPR Anytime Training Kit.

A Healthier Community

During EMS Week 2013, Medic hosted its first ever Community Health Clinic in conjunction with the YMCA, the AHA and the Mecklenburg County Department of Social Services. The clinic was open to the entire community and offered blood pressure checks, glucose checks, summer water safety lessons for children and hands-only CPR lessons. The event was very successful and helped lay the groundwork for future collaborative endeavors.

CUTTING EDGE OF CARDIAC RESUSCITATION

In 2009, Medic embarked on a project aimed at improving survival from Out of Hospital Cardiac Arrest (OHCA) in Mecklenburg County. With the participation of Agency first responders from across the county, Medic moved along a four-year long pathway of learning that has resulted in the understanding of a concept that is becoming more accepted in medicine and more often discussed in the manufacturing industry: standardization of work.

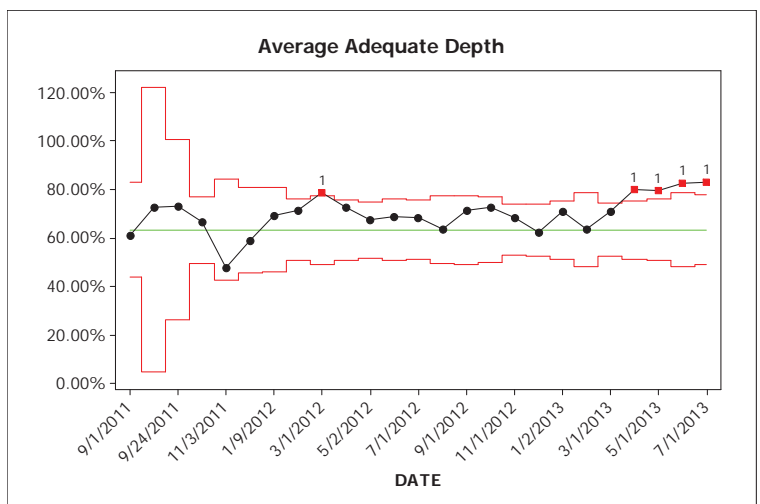
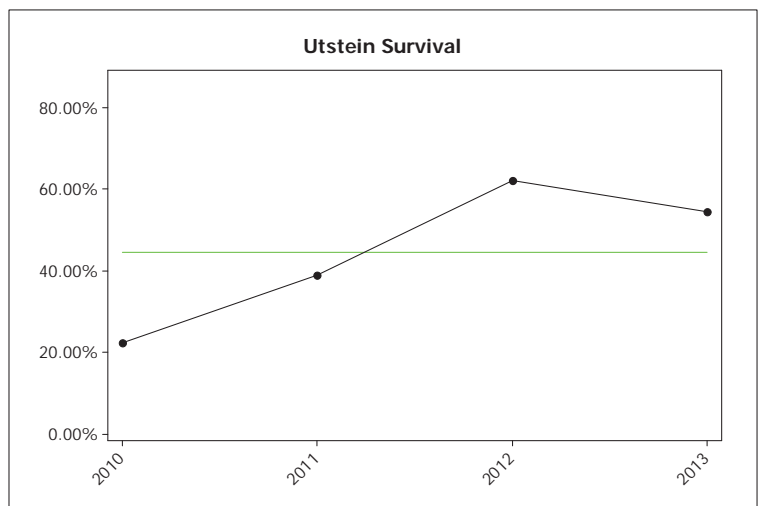
It is with this concept in mind that in FY '13 Medic revisited the Agency's approach to improving OHCA survival. The process started with Agency leadership using widely published research to establish the key drivers of OHCA survival. The following matrices relative to the quality of CPR performed were deemed critical to patient outcomes:

- Rate of compressions
- Depth of compressions
- Time off of chest compressions
- Time to defibrillation

Medic learned how to consistently measure these four key drivers of quality CPR so that performance in each area could be captured and analyzed relative to outcomes. The Agency's focused cardiac arrest protocol, which spells out specific roles for each of the personnel on any given OHCA scene, was revamped to incorporate modifications related to the key drivers.

Agency personnel and first responders were subsequently trained on the revised protocol; the results of this improvement project have been nothing short of amazing. FY '13 was Medic's most successful yet as it relates to OHCA outcomes. 78% of OHCA patients experiencing a witnessed cardiac arrest presenting in a shockable rhythm achieved return of spontaneous circulation (ROSC) prior to hospital arrival. 55% of those patients survived to hospital discharge.

Medic is the top performing EMS Agency in all of North Carolina with regard to OHCA patient survival, and among the leaders of all EMS Agencies in the entire country. Agency leadership maintains its focus on process improvement and is intent on finding ways to continue raising the bar in this and other critical areas that will positively impact patient outcomes.



DEMOCRATIC NATIONAL CONVENTION



In early 2011, the Democratic National Committee announced that it would host the 2012 Democratic National Convention (DNC) in Charlotte, NC. With this announcement came a sense of excitement and pride for Medic's 500-plus employees who would be responsible for providing emergency medical care during this once in a lifetime event.

The challenges associated with supporting the DNC were vast. In addition to resourcing a large, highly secured area uptown for the week-long event itself, the Agency simultaneously had to maintain responsibility for all of the emergency medical needs of the residents and visitors of Mecklenburg County. Medic quickly recognized the needs created by this event were bigger than any one EMS agency could handle. Agency leadership reached out to North Carolina EMS Chief Regina Godette-Crawford and her team at the North Carolina Office of EMS for guidance and support. Their input and resources were critical to the Agency's success during the event.

Medic leadership served on several planning committees and held responsibilities in many DNC command areas including the CMPD Command Center, Multiagency Coordination Center (MACC), Joint Medical Operations Center (JMOC), Joint Operations All Hazards Center (JOC/AHC), Joint Information Center (JIC), Mecklenburg County's Emergency Operations Center (EOC) and the Interagency Communications Center (ICC).

By all accounts the 2012 DNC was a huge success. There were no serious security breaches, area protests didn't materialize into anything violent or unmanageable and Medic was able to successfully handle regular system call volume in addition to the extra responsibilities that came with hosting the DNC. Call volume into Medic's dispatch center for the week of the DNC was up nearly 25% over the same holiday week the year prior (1,895 vs. 1,532), yet the agency was still able to maintain county contract compliance with regard to response times.

A post-DNC employee survey provided excellent feedback for Agency leadership to build upon. Employees felt that morale was up overall, teamwork was increased and communication across the agency had improved; building on these gains is an important target for Agency leadership in the coming months. Being the host city for the DNC was certainly an enormous amount of work, but it was also an extremely rewarding undertaking. Having the opportunity to put years of training and experience to use on the national stage is a rare opportunity, and one everyone at Mecklenburg EMS Agency was very grateful to be a part of.



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Novant Health

Dennis Phillips, Vice Chair
Carolinas HealthCare System

Tanya Blackmon
Novant Health

Dr. Matthew Hanley
Carolinas HealthCare System

Katie Kaney
Carolinas HealthCare System

Harry Weatherly
Mecklenburg County

Dr. Thomas Zweng
Novant Health

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(Appointed by Agency Board)

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Carolinas HealthCare System

Dena Diorio
Mecklenburg County

Melissa Masterton
Novant Health

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Mecklenburg County

Paula Vincent, Vice Chair
Novant Health

Katie Kaney
Carolinas HealthCare System

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Carolinas HealthCare System

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Medic

Nancy Alexander
Novant Health

Jon Hannan
City of Charlotte Fire Department

Katie Kaney
Carolinas HealthCare System

Dr. Stephen Keener
Mecklenburg County

David Leath
Mint Hill Volunteer Fire Department

Josef Penner
Medic

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(Appointed by Agency Board)

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Medic

Dr. Mike Gibbs
Carolinas HealthCare System

Dr. Steven Folstad
Novant Health

Dr. Eric Hawkins
Carolinas HealthCare System

Stuart Ramsey, RN
Carolinas HealthCare System

Paula Swain, RN
Novant Health

Dr. Stephen Wallenhaupt
Novant Health

Non-Voting Members

Barry Bagwell
Medic

Dr. Stephen Keener
Mecklenburg County

Josef Penner
Medic

Kevin Staley
Medic

MEDIC LEADERSHIP TEAM

Josef Penner, Executive Director
Dr. Doug Swanson, Medical Director
Barry Bagwell, Deputy Director, Operations
Kevin Staley, Deputy Director, Learning & Development
Jeff Keith, Deputy Director, Administration
Shelly Forward, Finance Manager

Photos taken courtesy of Ron Deshaies and Treasured Events of Charlotte, Inc.

FACES OF MEDIC





MEDIC

Medical Excellence. Compassionate Care.

CONTACT US

4525 Statesville Road, Charlotte, NC 28269

Phone: 704.943.6000/Fax: 704.943.6001

TTY 704.943.6200

www.medic911.com