



Leadership, Partnership, Stewardship

Wake County Business Plans *FY 2007 - 2009*

Public Safety
Emergency Medical Services

PUBLIC SAFETY - EMERGENCY MEDICAL SERVICES FY 2007-2008 BUSINESS PLAN

STATEMENT OF PURPOSE

The Wake County Emergency Medical Services Division provides the highest possible quality emergency medical response, care, and transportations to citizens of and visitors to Wake County.

SCOPE OF SERVICES DELIVERED

Operations

- Provides paramedic-level emergency care to 911 requests for assistance to citizens and guests of Wake County.
- Safely transports patients to any local hospital of their choice.
- Provide EMS coverage at large attendance events at local venues, including non-traditional mechanisms for service delivery.
- Provides EMS support for mass care operations in cooperation with local first responders and healthcare facilities.
- Operates a fleet of frontline ambulances, reserve ambulances, specialty response vehicles, and four-wheel drive quick response vehicles, ensuring that they are fully stocked and prepared for immediate response at all times.
- Provides additional paramedic-level resources to all "critical" events through strategically located District Chiefs.
- Provides responder rehabilitation at all major or extended events, and provides a specialized EMS response component in support of fire, hazardous materials, urban search and rescue, and law enforcement operations through the Special Operations teams.
- Provides EMS response to support communities throughout North Carolina as requested by NC Emergency Management in times of natural disaster or other major event.

Administration

- Provides leadership and direction to the employees of Wake County EMS
- Works cooperatively with other divisions of the Department of Public Safety, departments of Wake County Government, and all public safety agencies to ensure the mission of Wake County EMS is met.
- Manages the human resources function within the EMS division, including assessment, orientation, staffing, and payroll.
- Ensures the compliance of all personnel with applicable federal, state, and county regulations and the EMS Divisional Standards.
- Staffs the EMS component of the Wake County Emergency Operations Center during times of activation.

- Provides regional EMS support to communities through participation in Regional Access to Care initiatives.
- Provides analysis of response data, using state-of-the-art technologies, to ensure that EMS is employing the most efficient methodology for resource deployment.
- Oversees all EMS recruitment activities, including statewide annual visits to EMS degree programs and booth at State EMS Conference

Management Services

- Lead division on fleet procurement projects.
- Researches, makes application, and manages various EMS grant opportunities.
- Oversees the EMS communications systems, including participation on multi-disciplinary teams for CAD, AVL, and other telecommunication projects.
- Oversees the development and management of the EMS division and EMS system budgets.
- Oversees the EMS Logistics operations, including the central supply warehouse and related systems
- Processes and delivers all requests for EMS supplies to Wake County EMS facilities, , and selected county fire departments.
- Maintains inventory of all medical equipment and supplies, uniforms, and personal protective equipment.
- Coordinates the research and testing of new medical equipment and supplies, including pharmaceuticals.
- Coordinates all preventative maintenance on EMS equipment, including biomedical devices.
- Oversees the collection and processing of invoices and requisitions for EMS equipment and supplies

Professional Development and Public Relations

- Develops a comprehensive continuing medical education plan, using state and national teaching curriculums, in cooperation with the System Medical Director and Peer Review Committee.
- Delivers continuing medical education per the adopted plan for all county EMS personnel (Wake County EMS and contracted agencies, EMD providers, and selected first responder agencies).
- Administers the process for initial and continuing local accreditation of advanced life support candidates.
- Maintains required continuing education records in accordance with NC Model EMS System regulations.
- Provides OSHA-mandated training for EMS personnel in cooperation with the Wake County Safety Officer and Risk Management Office.
- Provides new employee orientation.
- Provides oversight, including scheduling and coordination for all divisions of the Department of Public Safety, of the EMS Training Center at the Wake County Commons Park.
- Provides education to Wake County employees on the use of Automated External Defibrillators and CPR, including the Board of Commissioners as requested.

- Provides public education on EMS through formal speaking engagements (SafeTeens, safety discussions, health fairs), EMS unit demonstrations, and information booths during EMS Week.

Medical Director and Clinical Affairs Officer

- Provides “in the field” medical supervision to all ALS personnel in the Wake County EMS System, routinely responding to emergency calls.
- Provides regular continuing medical education lectures on current topics of clinical emphasis or concern.
- Approves all advanced life support personnel (paramedics and EMT-Intermediates) to function in the Wake County system.
- Reviews all EMS system patient care reports for compliance with local standard of care, including medical protocols and procedures.
- Investigates clinical-related complaints and reviews findings of proceedings with the EMS System Medical Director.
- Monitors compliance with local, state and Model EMS System requirements for all Wake County EMS System agencies.
- Serves as a reserve paramedic resource to assist in staffing shortages.
- Monitors the performance of the Wake County EMS System to identify trends and recommends improvement strategies.
- Serves as System Administrator for the EMS system Electronic Patient Call Report system.
- Coordinates all EMS-related research projects for Wake County EMS.
- Provides medical oversight to the EMS Special Operations teams.

Emergency Medical Dispatch

- Provides clinical support to 911 centers in the county, assisting in the training, accreditation, and quality assurance efforts of the 911 centers.

Medical Record and Billing Support

- Provides backup support to the EMS billing component of the Wake County Finance Department.
- Maintains copies of EMS medical records and processes requests for EMS patient records in compliance with Federal privacy regulations, as well as local and state record retention standards.

OBJECTIVES

(Italics indicate key performance objectives)

1. *A paramedic ambulance will arrive at emergency requests for service within 11 minutes, 59 seconds, 90% of the time.*
2. *A paramedic ambulance will be en route to a call within 90 seconds of dispatch, 90% of the time.*
3. *For those calls meeting trauma system criteria, the ambulance will be en route to the trauma center within 9 minutes, 59 seconds after arriving at the scene.*
4. *For those calls where the patient has a positive Cincinnati screen and onset of symptoms for less than 3 hours, the ambulance will be en route to a clinically appropriate hospital within 11 minutes, 59 seconds after arriving at the scene.*
5. *For those calls where the patient has a documented ST-segment elevation myocardial infarction (STEMI), the ambulance will be en route to a clinically appropriate hospital within 14 minutes, 59 seconds after arriving at the scene.*
6. *For those patients found in cardiac arrest, treatment will comply with protocol at least 98% of the time.*
7. *For those patients for whom endotracheal intubation has been attempted, at least 90% will be delivered to the hospital with a validated successful intubation.*
8. At least 90% of newly hired employees will obtain medical and operational clearance within specified timeframes.
9. A professional development program will be developed and implemented that will provide fully participating paramedics with 100% of the requirements necessary for state and National Registry re-credentialing.
10. All EMS Division services and activities will occur within the authorized division budget
11. The EMS Division inventory control system will maintain 100% availability of all stock inventory items, except where due to impossibility.
12. The EMS Division will compete for all identified grant opportunities for which we are eligible.
13. Paramedic turnover will be reduced to less than 20% per year.
14. The paramedic vacancy rate will be maintained at 5% or less.
15. Cost per unit hour produced will be maintained at less than \$90.
16. Cost per ambulance transport will be maintained at less than \$_____.
17. Cost of vehicle operation per 10,000 miles will be maintained at less than \$_____.
18. Collisions per 100,000 miles will be maintained at less than 2.
19. Critical vehicle failures per 100,000 miles will be maintained at less than 4.
20. Sustained complaints per thousand patient contacts will be maintained at less than 1.5.
21. Percentage of lost unit hours due to lack of staff will be maintained at less than 5.
22. Percentage of newly employed full-time paramedics receiving medical and operational clearance within 180 days of ending orientation will be maintained at 90% or better.
23. Percentage of patient care reports finalized and uploaded to the system within 24 hours of the conclusion of the event will be maintained at 98% or better.

PERFORMANCE MEASURES

INPUT MEASURES:

1. Paramedic ambulance unit hour production:

OUTPUT MEASURES:

1. Responses to requests for service:
2. Patient transports provided:

OUTCOME MEASURES:

1. **Paramedic ambulance response performance:** percentage of emergency calls to which a paramedic ambulance arrives within 11 minutes, 59 seconds of the receipt of a 911 call, 90% of the time.¹
2. **Paramedic ambulance reflex performance:** percentage of calls for which a paramedic ambulance is en route to the call within 90 seconds of dispatch.
3. **Trauma scene time:** percentage of calls meeting trauma system criteria where the ambulance is en route to the trauma center within 9 minutes, 59 seconds after arriving at the scene.
4. **Stroke scene time:** percentage of calls where the patient has a positive Cincinnati screen and onset of symptoms for less than 3 hours where the ambulance is en route to a clinically appropriate hospital within 11 minutes, 59 seconds after arriving at the scene.
5. **STEMI scene time:** percentage of calls where the patient has a documented ST-segment elevation myocardial infarction (STEMI) where the ambulance is en route to a clinically appropriate hospital within 14 minutes, 59 seconds after arriving at the scene.
6. **Cardiac arrest resuscitation rate:** Successfully resuscitates no less than 20% of patients suffering from cardiac arrest
7. **Cardiac arrest protocol compliance:** percentage of patients found in cardiac arrest where treatment complies with protocol.
8. **Endotracheal intubation success rate:** Percentage of patients for whom endotracheal intubation has been attempted delivered to the hospital with a validated successful intubation.

EFFICIENCY MEASURES:

1. Cost per unit hour produced.
2. Cost per ambulance transport.
3. Cost of vehicle operation per 10,000 miles.
4. Collisions per 100,000 miles.
5. Critical vehicle failures per 100,000 miles.
6. Sustained complaints per thousand patient contacts.
7. Percentage of lost unit hours due to lack of staff.

¹ An "emergency" request for service is a request that is classified BRAVO through ECHO by an emergency medical dispatcher (EMD), using the Medical Priority Dispatch System.

8. Percentage of newly employed full-time paramedics receiving medical and operational clearance within 180 days of ending orientation.
9. Percentage of patient care reports finalized and uploaded to the system within 24 hours of the conclusion of the event. (Do we have a method of measuring this?)

PRIORITIES

1. Staffing emergency response units including improving retention of the paramedic workforce.
2. Assuring the quality of clinical and operational service delivery.
3. Effective management of mass gatherings and mass casualty incidents.
4. Assuring that the EMS system is prepared in the event of onset of pandemic influenza in Wake County
5. Assuring that adequate facilities are available to effectively perform the EMS Division's function
6. Developing an effective inventory management and distribution system.
7. Developing and sustaining an effective performance measurement system.

STATUS REPORT

1. The Wake County EMS System continues to provide high quality pre-hospital care pursuant to a NCOEMS approved Model EMS System plan.
2. Compliance with response performance goals (90%) varies from 87-91% monthly.
3. Compliance with reflex performance goals approaches acceptable during daylight hours but is below standard during nighttime hours.
4. Unit hour utilization of core units (EMS 1, 11, 13, and 7) is becoming excessive for employees working 24-hour shifts.
5. The EMS Division has improved its special operations capability through training, equipping, and deploying a Tactical Emergency Medical Support Team, a Hazardous Materials / Urban Search and Rescue Medical Support Team, and an Paramedic Bicycle Response Team.
6. Improvement of coverage in the Durant Road area has been delayed due to the lack of an appropriate facility to house an overnight ambulance unit and crew.
7. Deployment of Peak Activity Units has been delayed due to high paramedic turnover and lack of staff to support the expansion units.
8. Mass Casualty Response unit, funded by DHS grant dollars, will be operational during 1st quarter of 2007
9. Request through CAPRAC for \$250,000 in funding to provide the necessary pandemic flu personal protective equipment for Wake County based on federal guidelines was not funded for FFY07
10. All EMS resources in the Wake County EMS system are dispatched by the Raleigh-Wake 911 Center
11. All EMS resources in the Wake County EMS system will be dispatched based upon recommendation of a GPS based location system during FY07

HORIZON ISSUES

1. De-cluster EMS units located at EMS station 1 (downtown) and EMS station 5 (Millbrook).
2. Consider alternatives in the event that EMS spaces in the Public Safety Center become necessary for criminal justice functions.
3. Implement an in-vehicle navigation (IVN) system to work in cooperation with the AVL and CAD systems to enhance systemwide response performance.
4. Expand the analysis of response data to determine the deployment of EMS resources using GIS and planning data.
5. Expand staff in the Office of Professional Development to meet expanded training demands of EMS system, including the capacity to conduct in-house paramedic pre-service training.
6. Consider alternative staffing models to improve clinical and operational performance.
7. Consolidation of EMS administrative personnel and expanded operational capabilities through design and acquisition of Central Operations Facility.

DEMAND ANALYSIS

Demand for EMS services has been increasing steadily over the last several years.

According to the Wake County Planning Department, the population of Wake County is projected to increase by 8.0% from 2004 to 2007 (675,359 to 727,030). The forecast population for Wake County in 2010 is nearly 782,000. In addition, it is estimated that over 250,000 persons commute daily into Wake County and over 10,000,000 visits annually, including those passing through the Raleigh-Durham International Airport.

EMS Response Statistics

Calendar Year	Systemwide Dispatches	Percentage Change	EMS Division Dispatches	Percentage Change
1999	42,463		26,193.00	
2000	45,286	6.65	27,574.00	5.27
2001	48,036	6.07	29,462.00	6.85
2002	50,112	4.32	30,335.00	2.96
2003	51,415	2.60	31,245.00	3.00
2004	51,608	0.38	28,630.00	-8.37
2005	57,017	10.48	31,521.00	10.10
2006				

- Reflects a 26% increase in systemwide dispatches between 2000 and 2005

EMS Dispatches Per 1000 Residents of Wake County

Calendar Year	County Population	Systemwide Dispatches	Dispatch Per 1000
1999		42,463	
2000	627,846	45,286	72.13
2001	655,548	48,036	73.28
2002	678,651	50,112	73.84
2003	702,110	51,415	73.23
2004	725,902	51,608	71.09
2005	748,815	57,017	76.14
2006	774,326		0.00