Emergency Medical Services Assessment: A Systematic Approach to Improving Performance

Washington, DC

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What is an EMS System?

A ‘coordinated system’ designed to provide out-of-hospital emergency medical care for the sick and injured.
EMS System Components

- Detection
- Reporting
- Response
- On Scene Care
- Care in Transit
- Transfer to Definitive Care
Washington DC Fire & EMS

Distribution

- Paramedic Engine Company (PEC) Only
- ALS Medic Only
- Both PEC and ALS Medic

DC Fire Department
Station Locations & ALS Units

Road Network
Extended Road Network
DCFD Fire Response Area

0 1 2 3 4 Miles
Washington DC Fire & EMS

Distribution

*Assumes all units are available to respond immediately upon dispatch.

- Paramedic Engine Company (PEC) Only
- ALS Medic Only
- Both PEC and ALS Medic
- DCFD Fire Response Area
- DC Fire Department 4-Minute ALS Response Distribution*
Washington DC Fire & EMS

Depth of Coverage

<table>
<thead>
<tr>
<th>Assumption</th>
<th>Description</th>
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<tbody>
<tr>
<td>Paramedic Engine Company (PEC) Only</td>
<td>Minimum of 3 ALS Resources</td>
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<tr>
<td>ALS Medic Only</td>
<td>Minimum of 2 ALS Resources</td>
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<tr>
<td>Both PEC and ALS Medic</td>
<td>Minimum of 1 ALS Resource</td>
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DC Fire Department
4-Minute ALS Response Concentration
Call Volume Depletion of ALS Resources
- Total EMS Unit Responses – 117,380 (2006)
  - BLS Transport Responses – 81,104 / 41,998 transports (2006)

Appropriate Utilization, Distribution and “Depth” of Resources Required To Handle This Call Volume

Travel Time Affected By Availability Of Resources and Travel Distances
- Distribution
- Depth of Coverage
Washington DC Fire & EMS: Response

- Critical EMS En Route to On Scene Interval (Travel Time) – 02:54 (2007 YTD average)*

- Recommended Travel Time Goal – 04:00, 90% of the time (NFPA Standard 1710 Section 4.1.2.1.1)

- *First Opportunity for Patient Assessment and Delivery of Critical Interventions

(*As reported by DCFD in Document “2004_07_FY History_YTD, FY2006 History”)*
Washington DC Fire & EMS: Reporting Dispatch Phase

- Notification (Call) to “Queue” Interval – **01:32** (2007 YTD average)*
- “Queue” to Dispatch Interval - **00:52** (2007 YTD average)*
- TOTAL TIME- Notification to Dispatch Interval – **02:24** (2007 YTD average)*
- Typical Call Processing Target – Under 01:00, 90% of the time *(NFPA Standard 1221)*

(*As reported by DCFD in Document “2004_07_FY History_YTD, FY2006 History”*)
EMS Dispatch to En Route Interval (Turnout/Chute Time) – 01:02 (2007 YTD average)

Typical Turnout/Chute Time Target – Under 01:00, 90% of the time (NFPA Standard 1710 Section 4.1.2.1.1)

(*As reported by DCFD in Document “2004_07_FY History_YTD, FY2006 History”)
Washington DC Fire & EMS: Transfer to Definitive care

- Hospital Emergency Room Delays May Deplete Transport Resources

- DC Area Hospital “Drop Times” Contribute To Overall System Response Times

  - 82% of all “Drop Times” Reported in Feb. 2007 were > 30 minutes*
    - Delays Transport Unit Return To Service
    - Requires FD Initial Responders To Stay On Scene Longer, Delaying Response Unit Return To Service

(*As reported by DCFD in Document “Hospital Drop Time Report, Feb. 2007”)
EMS System Components

- Detection
- Reporting
- Response
- On Scene Care
- Care in Transit
- Transfer to Definitive Care
Emergency Response System Assessment: Comparable Jurisdictions

Washington, DC

compared to

Memphis, TN

Gary Ludwig, MS, EMT-P
Deputy Fire Chief
Memphis, TN
Washington DC and Memphis

- Similar Size Resident Populations
- Similar Poverty Levels
- Similar Sized Fire Departments
- Similar Approaches to EMS Delivery
- Over 100,000 EMS Responses per year
The Memphis Problem

- Leadership Did Not Value the EMS Mission for over 10 Years.
- Was Not Medically Driven.
- Improper Levels of Supervision Over EMS.
- Poor Quality Improvement Program.
- Training Had Been Eliminated.
- 3 – 5 Citizen Complaints Every Week.
- Seven Wrongful Death Lawsuits in Short Period Of Time.
- Virtually Two Separate Departments Under the Same Budget.
Today in Memphis

- All Hazards Emergency Response System
- Leadership Values EMS Mission
- Extensive Field Medical Supervision
- Extensive Continuing Education Programs
- Revamped QI Program addresses system and individual performance problems.
- Citizen Complaints – Averages 1 Every 2 Months
- No Lawsuits in last 18 months
- True Integration of Fire and EMS System
- Average Response Time for First Arriving Medical Provider is under 4 minutes.
- Innovative Programs:
  - Big Brother/Sister Recruit Training
  - 911 Alternatives
Washington DC Current EMS System can be a Premier System

- Supervision and Oversight
- All Hazard System Design
- ALS Deployment
- Quality Improvement
- Training & Education
EMS Is A Systems Approach

Changing the Name on the Side of the Ambulance Will Not Make DC a Better EMS System