

Charlottesville-Albemarle Rescue Squad



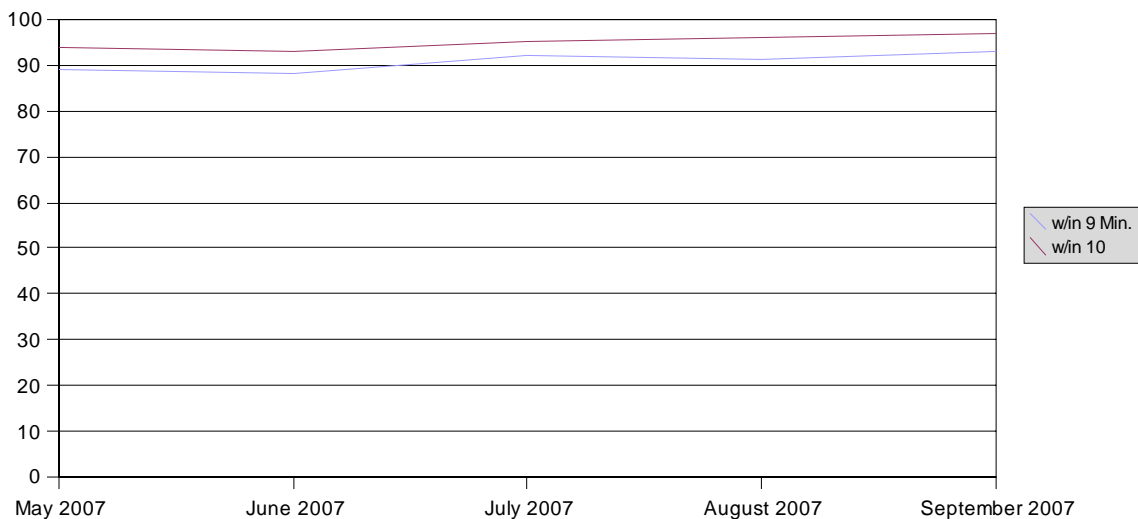
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September 1, 2007

Performance Metrics - Response Time – C-ARS City

Response Time (Dispatch to Arrival)



C-ARS	May 2007	June 2007	July 2007	August 2007	September 2007
Percent Within 9 Minutes of Dispatch	89%	88%	92%	91%	93%
90% Response Time	9.13333 Min.	9.23333 Min.	8.4 Min.	8.45 Min.	8.47 Min.
Percent Within 10 Minutes of Dispatch	94%	93%	95%	96%	97%

What is a “response time”?

The full response time is made up of the following elements:

1. processing Time at 9-1-1 Center
2. time dispatched to unit responding
3. travel time to scene of emergency for the first responder (may be a fire engine, ambulance or other vehicle)
4. travel time to scene of emergency for the advanced life support personnel (may be a fire engine, ambulance or other vehicle)
5. travel time for the transport unit (ambulance)

The 9 minute time used in the chart above includes 1 minute to respond and 8 minutes travel time.

What are the local response time standards?

City: No defined EMS standard. Charlottesville Fire Department standard for all calls
80% in 6 minutes.

County: Growth Area: Average 4 minutes from dispatch
Rural Area: Average 13 minutes from dispatch

Are there any “National” Standards?

The National Fire Protection Association [NFPA] Standard 1710, *Standard For Career Fire Departments*, and MATRIX Fire Consolidation Study suggest the following:

Arrival of Basic Life Support [BLS] Personnel and Equipment (“the First Responders”):

- 90% within 5 minutes of dispatch (1 minute to respond, 4 minute travel time) (may be a fire engine, ambulance or other vehicle, and may be an ALS provider)

Arrival of Advanced Life Support [ALS] Personnel and Equipment:

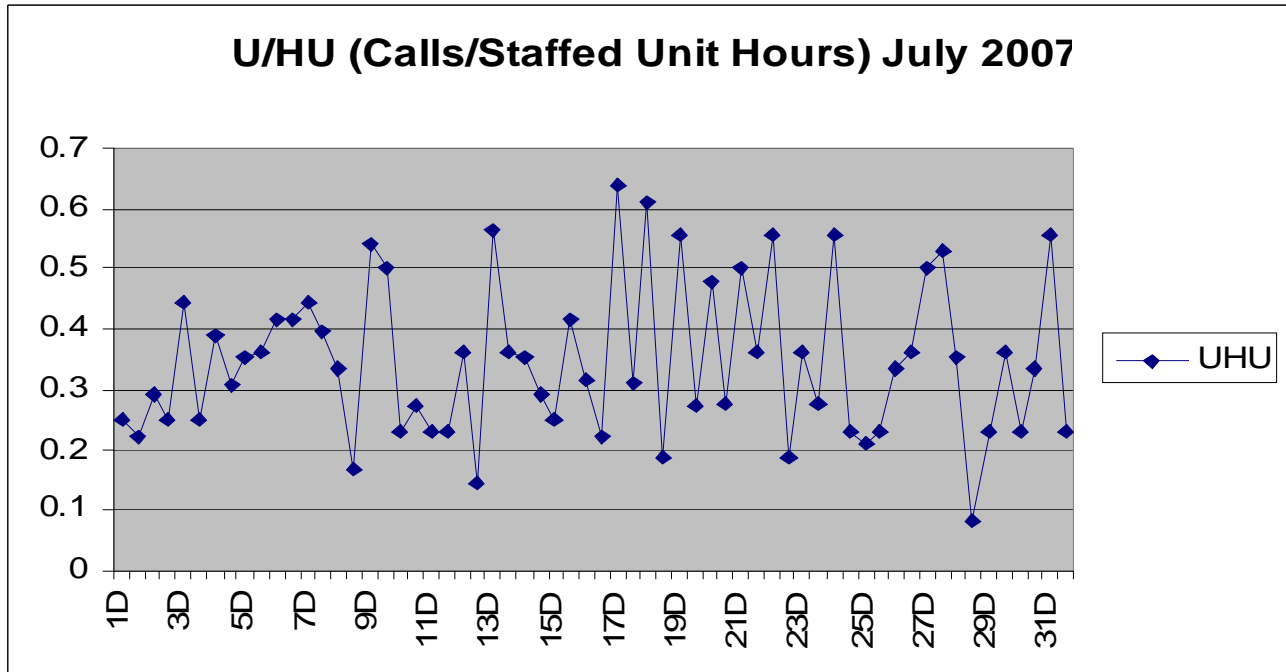
- 90% within 9 minutes of Dispatch (1 minute to respond, 8 minute travel time) (may be a fire engine, ambulance or other vehicle)

Arrival of a Transport Unit:

- No Response Time Standard for the ambulance is suggested

U/HU – C-ARS Unit Hour Utilization Ratio – City and County

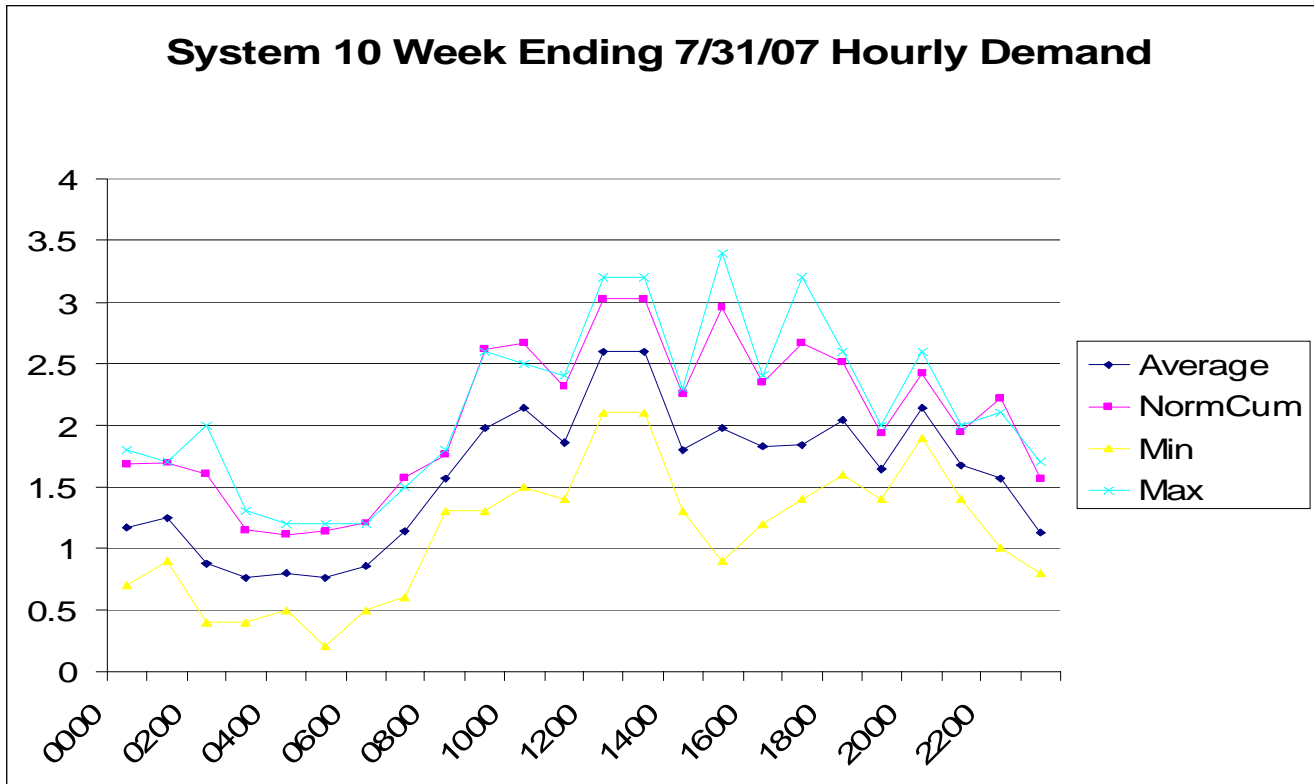
The “U/Hu” is used by service managers to determine system efficiency. A “Unit Hour” is one ambulance staffed for one hour. An ambulance staffed for a 12 hour shift is 12 unit hours. To determine the U/Hu the manager divides the number of patient transports by the number of unit hours invested. A 1.0 U/Hu is one transport per hour. A 0.5 U/Hu is 1 transport every two hours. For our purposes the calculation is the number of calls divided by unit hours invested.



Unit hour utilization is used by high performance EMS systems to determine productivity and workload of employees on a single unit. The above calculates total CARS U/Hu. Being very busy for an 8 hour shift is very different than being very busy for a 24 hour shift. One such system has a U/Hu goal of 0.48 and believes that anything over 0.55 is too high because it stresses the crew. Another has a goal of 0.34.

Demand Graphs

System – 10 Week total by Hour of Day



Notes in the interest of full disclosure:

- The demand maps were prepared by Albemarle County Fire Rescue Department personnel from map data points provided them and taken from the Computer Aided Dispatch [CAD] data manually. They are generally correct but each has a few points in error.
- Time calculations were carefully prepared using raw CAD data provided by the Emergency Communications Center [ECC], and in some cases ECC researched the call to confirm or correct times. Some calls without on-scene times, those found inaccurate by ECC, and those where the transport time and on-scene time were so similar that there was clearly a data entry error were not used. For July, even when the only data sort filter was "city" the 9 minute arrival time percentage was 90%, and the data included known duplications and errors. County times are more problematic to calculate because in some areas a call 20 miles outside the city is categorized the same a call just over the county line at the foot of Pantops Mountain.