

Response to La Crosse Fire Chief's Position Paper on the Emergency Medical Services System in La Crosse

Introduction:

La Crosse Fire Chief Gregg Cleveland has posted a Position Paper on the City of La Crosse web site regarding the fire department ambulance issue, which contains inaccuracies about the operational and clinical performance of Tri-State Ambulance and our paramedics.

For 30 years Tri-State has produced a performance level that is the envy of EMS services across the nation; specifically:

- Triple the national average for cardiac arrest survival
- Dual paramedic ambulances
- An average urban response time of 5 minutes, 20 seconds
- No taxpayer support

Cited Milwaukee Study:

The Position Paper left out several important statements and findings in a referenced study by Dr. Aufderheide, "*Does the Number of System Paramedics Affect Clinical Benchmark Thresholds?*" which studied paramedic skill proficiency and patient outcomes in Milwaukee County. Milwaukee County has seen an increase in paramedics with the additional 1st Response paramedics without a comparable increase in critical patients.

Among the most notable findings and statements in the study¹:

- ***"It is no surprise that as the number of paramedics in the system increases, the number of opportunities to meet critical care benchmark thresholds decreases."***
- ***"One pre-hospital study demonstrated that a significant correlation exists between the frequency of intubations per paramedic and the success rate. This suggests that actual experiences, instead of the duration of service, should be used to assess the frequency of skill use."***
- ***"When questioned, paramedics themselves found the skills performed in the field to be more important than the initial training or simulation experiences in maintaining skill competency."***
- ***"Literature shows that within six to 12 months after initial training, skill deterioration occurs. The most advanced psychomotor skills degrade most rapidly."***
- ***"Even frequently used basic skills deteriorate, yet the degradation occurs more slowly with increased exposures."***
- ***"Initial training programs may not prepare providers to practice independently."***

And, the most important conclusion of the study:

"CONCLUSION

These data support the hypothesis that the achievement of critical care benchmarks is inversely proportional to the number of practicing paramedics in the Milwaukee County EMS system.

The annual mean for each technical skill has decreased for the 2001-2005 data set compared with the means established in 1987-1996, except for medication administration."

The citation in the Position Paper for recommended **ANNUAL** activity PER PARAMEDIC is interesting. These annual activity recommendations compare as follows to the Tri-State individual paramedic activity:

	Study Recommended Annual Minimum	Tri-State's Average Current Annual Actual Achievement
Patient Contacts	135	500
Team Leader/Report Writer	35	250
Endotracheal Intubation	1	3
Adult IV Starts	18	124
12-Lead ECGs	16	25

Fractile Response Time Analysis:

The Position Paper makes the following statement:

“Attachment 2 is a graphical portrayal of the wait time for paramedic care following fire department arrival for 2007/2008 at the 90th percentile level. For example, in May of 2008 patients in the city of La Crosse waited in excess of seven minutes, 90 percent of the time for paramedic care after the fire department arrived on scene.”

This is an incorrect definition of a Fractile Analysis at 90th Percentile. It is a confusing measure. It is for this reason that Tri-State reports our monthly average response times *AND* fractile response times with definitions of each.

In the textbook, “Prehospital Care Administration” (JEMS Publishing – 2004; p. 196-197), national EMS expert Rick Keller of Fitch and Associates, LLC, defines fractile response times as follows:

*“An alternative [to average] method of reporting response times is the fractile measurement method, also known as the percentage compliance method. In this performance indicator, a defined goal or standard is used for the response time. For example, the goal of a system could be 10 minutes for emergency requests. Once the goal or standard has been decided on, a percentage is identified as the compliance level of this service. The most commonly used compliance percentages are 90 and 95 percent. **Thus, 90 percent of the emergency calls should be responded to WITHIN 10 minutes.**”ⁱⁱ*

In other words, if the response time is 10 minutes at the 90th percentile, it means that only 10 percent of the calls had a response time of **GREATER** than 10 minutes.

Applying the correct definition of fractile to the example for May 2008 used in the Position Paper, Tri-State’s paramedics achieved a response time of 7 minutes, 54 seconds at the 90th percentile (Exhibit 1). This means that 90 percent of the calls in the City of La Crosse had a response time **UNDER** 7 minutes, 54 seconds. Another way to look at it is that if 90% of the calls have response times **UNDER** 7 minutes, then only 10% of the calls had response times **LONGER** than 7 minutes, 54 seconds.

Further, Tri-State arrives before or simultaneously with La Crosse Fire Department on 30-35% of the calls (46.9% in August 2008). It is counterintuitive that Tri-State would be 7 minutes behind the fire department 90% of the time if we arrive before or simultaneously with them 46.9% of the time (Exhibit 2).

The Position Paper makes another statement, with supporting charts, regarding Tri-State's countywide response time performance.

When the county renewed our contract in December 2006, we recommended changing the current "average" response time standard to a "fractile" measure. A fractile measure is a much more stringent standard. We suggested an 8 minute, 59 second standard based on previous performance reports our computer-aided dispatch system generated.

In January 2007, when we began doing stringent quality improvement reviews of the response time data, we found that the previous data reports for response time did not include the time from ambulance notification to the time the ambulance started enroute to the call. This is called "activation," or "turnout" time. To accurately and transparently report our response times, we began adding this time in our response time calculation since it is a much more honest assessment of response times.

Adding the 90 – 120 seconds (at the 90th percentile fractile measure) to the ambulance response times did make our reported times longer, but it was the right thing to do.

Interestingly, based on the data reported on the La Crosse Fire Department web site regarding their response times, they are not including "activation" time in their response time calculations. Instead, they are reporting only the drive time from the station to the scene, omitting the time it takes to get from the station to the fire truck.

The Position Paper makes the statement that adding transport resources to the system by La Crosse Fire Department would make more resources available for the region, thereby improving overall response times. We discussed his belief during mediation and proved that it would not impact regional times since Tri-State would reduce resources in the system in an effort to maintain the clinical and economic balance in the system.

Furthermore, it is the belief and position of Tri-State Ambulance that decisions regarding the level of service to the region should be made by an EMS Commission as proposed by the County.

Quality of Care:

The Position Paper makes the statement that it is the quality of the training, not the number of paramedics that effect patient care. This statement is in direct conflict with the Milwaukee study cited in the paper as earlier referenced.

While training is important, it is the real life and death experience that is most important. Numerous studies, including the one cited from Milwaukee, WI, have demonstrated that the dilution of patient/paramedic experiences ratios adversely impacts patient outcome, especially in the case of advanced airway management.

To address the statement that *"Tri-State employs a number of part-time paramedics; how do part-time paramedics with other full-time employment maintain their skills and get the number of patient contacts to maintain skill proficiency?"*

Tri-State employs 11 part-time paramedics who, by policy, must work a minimum of 24 hours per month so that the quality assurance department can assess their skills. 10 of these part-time paramedics work **full-time** in other clinical settings in which they use their paramedic skills, increasing their patient contact and ability to maintain skill proficiency. These settings include:

- Gundersen Lutheran Trauma & Emergency Center
- Gundersen Lutheran Aeromedical Program (MedLink Air)
- Gundersen Lutheran Cardiac Catheterization Suite
- St. Joseph's Hospital/Ministry Healthcare Aeromedical program (Spirit Medical Transport)
- Gold Cross Ambulance
- Winona Area Ambulance Service, Inc.

Transparency of Operations:

Tri-State Ambulance believes in providing full and complete transparency as part of our community commitment. It is for this reason that we began publishing our response time and financial performance indicators in January 2007.

The monthly and year-to-date reports published monthly on our web site include:

- Call processing times
- Activation times
- Response times (City of La Crosse and County of La Crosse) on an average and fractile basis
- Time on Task
- % of time on calls
- % of time arriving on scene prior to 1st Responders
- Unit hour utilization
- Cost per unit hour
- Unit hours staffed
- Cost per transport
- Revenue per transport
- Total Revenue
- Total Expenses
- Total Income (loss)

These reports have been available through our web site since January 2007 and are mailed to elected officials and other community stakeholders on a regular basis.

We are proud of our performance and will share it with anyone, anytime.

Response time illustrations:

The Position Paper cites 17 ambulance responses in the 18 months since March 2007 that are alleged to have had a response time of 4 minutes or more after the fire department 1st Responders arrived at the scene. During this time period, Tri-State Ambulance responded to over 7,500 ambulance requests in the City of La Crosse alone. This allegation represents 0.022% of the total responses with an alleged time of greater than 4 minutes after 1st Responder arrival.

Of note is that Tri-State's "on-scene" time recorded by La Crosse Fire comes from the on-scene fire fighters transmitting "Tri-State patient-side" to their dispatch center. If the firefighters are busy, or forget, or if there is a delay in Tri-State accessing the patient due to locked doors, etc., these reported times will be erroneously longer than they are in reality.

Further, ambulance calls after April 1, 2008 received Emergency Medical Dispatch (EMD) with appropriate response modes (lights and siren (HOT) vs. non-lights and siren (COLD)) based on certified dispatchers following locally approved medical protocol.

A closer look at the 17 calls identified by the Position Paper (of the 7,500 calls Tri-State responded to) reveals the following information:

Date	Location	Details
3/24/2007	Monitor Street (Run #07-3550) Non-emergency response Non-emergency transport Psychiatric	Time Dispatched: 21:40:55 Time Arrived: 22:00:22 Response Time: 19 minutes, 27 seconds Psychiatric call, ambulance responded non-emergency, 1 st ambulance diverted to life threatening head injury patient since it was the closest unit with a 2 minute response time; next closest ambulance sent to psychiatric call.
7/22/2007	7 th Street South (Mutual Aid)	Time Dispatched: 22:40 Time Arrived: 23:08 Response Time: 28 minutes (mutual aid) 4 th response request in 60 minutes. Mutual aid was requested from Sparta Ambulance to standby in the County per our mutual aid agreement. Sparta Ambulance responded to this call from within the County limits.
1/27/2008	Avon Street (Run #08-1202) Emergency Response Non-emergency transport Overdose	Time Dispatched: 08:00:31 Time Arrived: 08:12:14 Response Time: 11 minutes, 43 seconds 4 th call in 60 minutes. FD on scene prior to Tri-State, respiratory arrest patient, no advanced airway skills used by 1 st responders. Patient regained consciousness after Tri-State treatment on-scene.
3/1/2008	Division Street (Run #08-2999) Emergency Response Non-emergency Transport Fever	Time Dispatched: 09:53:34 Time Arrived: 09:54:39 Response Time: 1 minutes, 5 seconds No response time delay.
4/13/2008	Mississippi Street (Run #08-5177) Emergency Response Non-emergency Transport Assault	Time Dispatched: 19:01:22 Time Arrived: 19:07:08 Response Time: 5 minutes, 46 seconds No response time delay.
5/10/2008	5 th Avenue, South (Run #08-6499) Non-emergency response Patient refused transport Sick Person	Time Dispatched: 19:01:22 Time Arrived: 19:07:08 Response Time: 6 minutes, 57 seconds No response time delay.

5/11/2008	3 rd at Pearl (Run #08-6552) Non-emergency response Canceled enroute, patient went with friend to hospital Minor assault at bar	Time Dispatched: 02:30:57 Canceled Time: 02:40:43 Response Time: 9 minutes, 46 seconds when mutual aid canceled <u>Night of Med Flight helicopter crash in La Crosse.</u> 5 Tri-State units committed on La Crosse County emergency medical calls, including helicopter search. Sparta Ambulance on mutual aid standby in La Crosse County. Sparta dispatched to the call from staging location in La Crosse County. Canceled enroute to scene.
5/29/2008	7 th Street South (Run #08-7462) Emergency Response Patient refused transport	Time Dispatched: 05:05:04 Time Arrived: 05:15:19 Response Time: 10 minutes, 15 seconds Dispatch reassigned unit, initially dispatched an incorrect unit.
6/6/2008	Mormon Coulee Road (Run #08-9704) Emergency response Emergency transport	Time Dispatched: 20:33:15 Time Arrived: 20:42:50 Response Time: 9 minutes, 37 seconds 3 rd call in 60 minutes. 2 nd closest ambulance responded.
6/8/2008	Winnebago Street (Run #08-7975) Non-emergency response Non-emergency transport Leg pain	Time Dispatched: 09:19:43 Time Arrived: 09:32:37 Response Time: 12 minutes, 54 seconds Non-emergency response for chronic leg pain – no delayed response.
6/10/2008	4 th Street North (Run #08-8091) Emergency response Non-emergency transport Hyperventilation	Time Dispatched: 11:17:09 Time Arrived: 11:25:35 Response Time: 8 minutes, 26 seconds 6 th call in 60 minutes. Closest ambulance sent.
6/10/2008	Park Plaza Drive (Run #08-8103) Emergency response Non-emergency transport Seizure	Time Dispatched: 14:50:58 Time Arrived: 14:59:13 Response Time: 8 minutes, 15 seconds 5 th call in 60 minutes. Closest ambulance sent.
7/23/2008	14 th Street South (Run #08-10286) Emergency response Patient refused transport	Time Dispatched: 16:09:21 Time Arrived: 16:17:47 Response Time: 8 minutes, 26 seconds 3 rd call in 60 minutes. Closest ambulance sent
8/3/2008	King Street (Run #08-10811) Emergency response Non-emergency transport Seizure	Time Dispatched: 14:50:58 Time Arrived: 14:59:13 Response Time: 6 minutes, 4 seconds No response time delay.

9/1/2008	Huber Court (Run #08-12232) Emergency response Non-emergency transport Overdose	Time Dispatched: 12:07:44 Time Arrived: 12:16:25 Response Time: 8 minutes, 41 seconds 5 th call in 60 minutes. Closest ambulance sent.
9/9/2008 {Call actually occurred on 9/7/2008}	Harvey Street (Run #08-12472) Emergency response Emergency transport Fall	Time Dispatched: 06:19:54 Time Arrived: 06:31:54 Response Time: 12 minutes, 0 seconds 3 rd call in 60 minutes. Closest ambulance sent.

Within the boundaries of the HIPAA requirements, these calls and the response time data are available for review upon request.

Summary:

The residents of the County of La Crosse, City of La Crosse, and the Coulee Region benefit from a high performance EMS system that consists of professional emergency medical dispatchers providing life-saving information over the phone and assuring a safe mode of response for ambulances, rapid and well skilled life saving 1st responders, as well as excellent, well-practiced paramedics.

As we look toward the future we are focusing our efforts on implementing the recommendations from the Institute of Medicine’s EMS at the Crossroads report from 2006, such as:

- Promoting a coordinated, regional approach to EMS system delivery
- Identifying and providing outreach to the frequent EMS system users to reduce the incidence of 9-1-1 use
- Providing preventive services and in-home treatments for at-risk patients
- Assessing environmental hazards to reduce injuries in the home

We should also focus on the things that will truly enhance our EMS system:

- Implement a process to radio system interoperability allowing Tri-State’s ambulances to communicate by radio to La Crosse Fire units like we can with all other 1st Responders in the region
- Expand the public access defibrillation program to private businesses
- Require CPR certification for Middle and High School graduation

These are the enhancements we should be focusing on to truly make a difference in our community, not creating unnecessary and expensive duplication of services that put the patient and taxpayer at risk.

We call on leaders in City government to partner with us to help make these enhancements a reality in La Crosse.

Exhibit 1

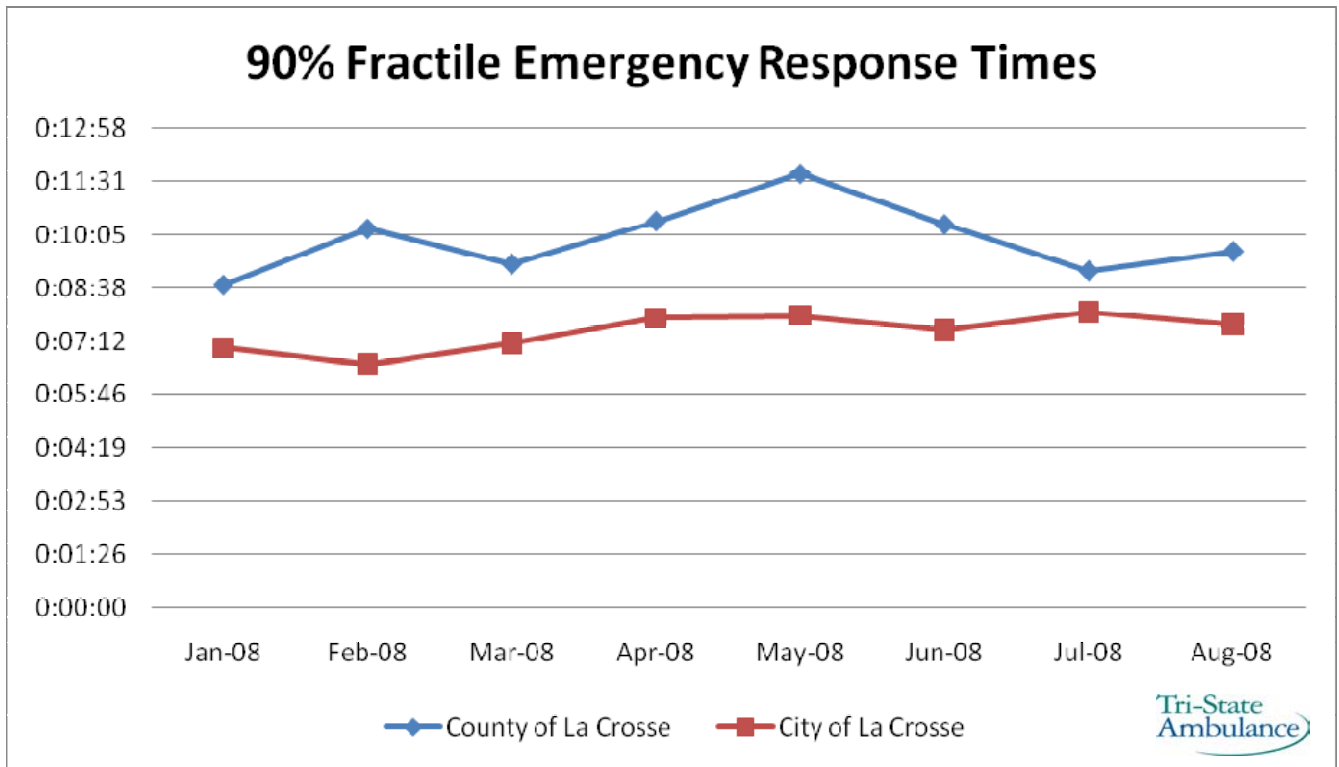


Exhibit 2

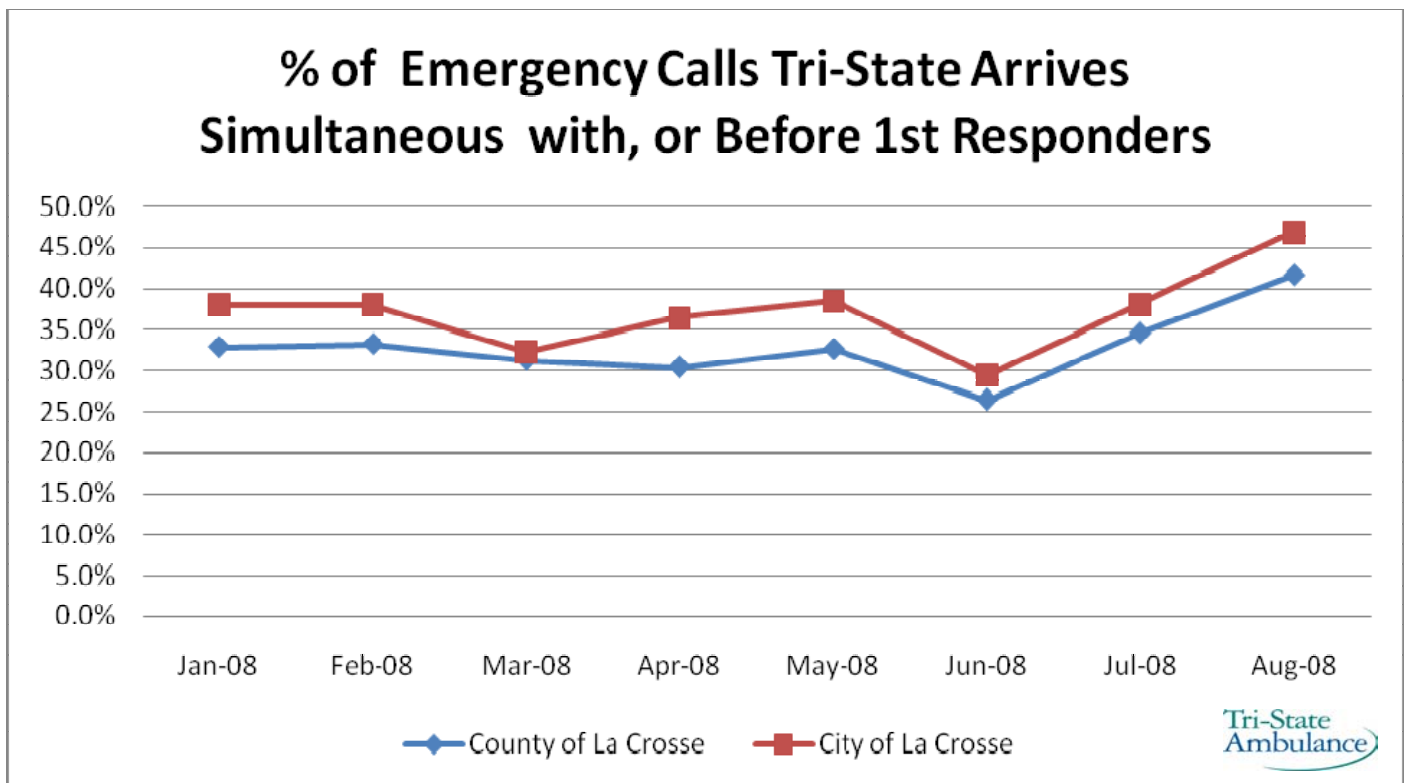
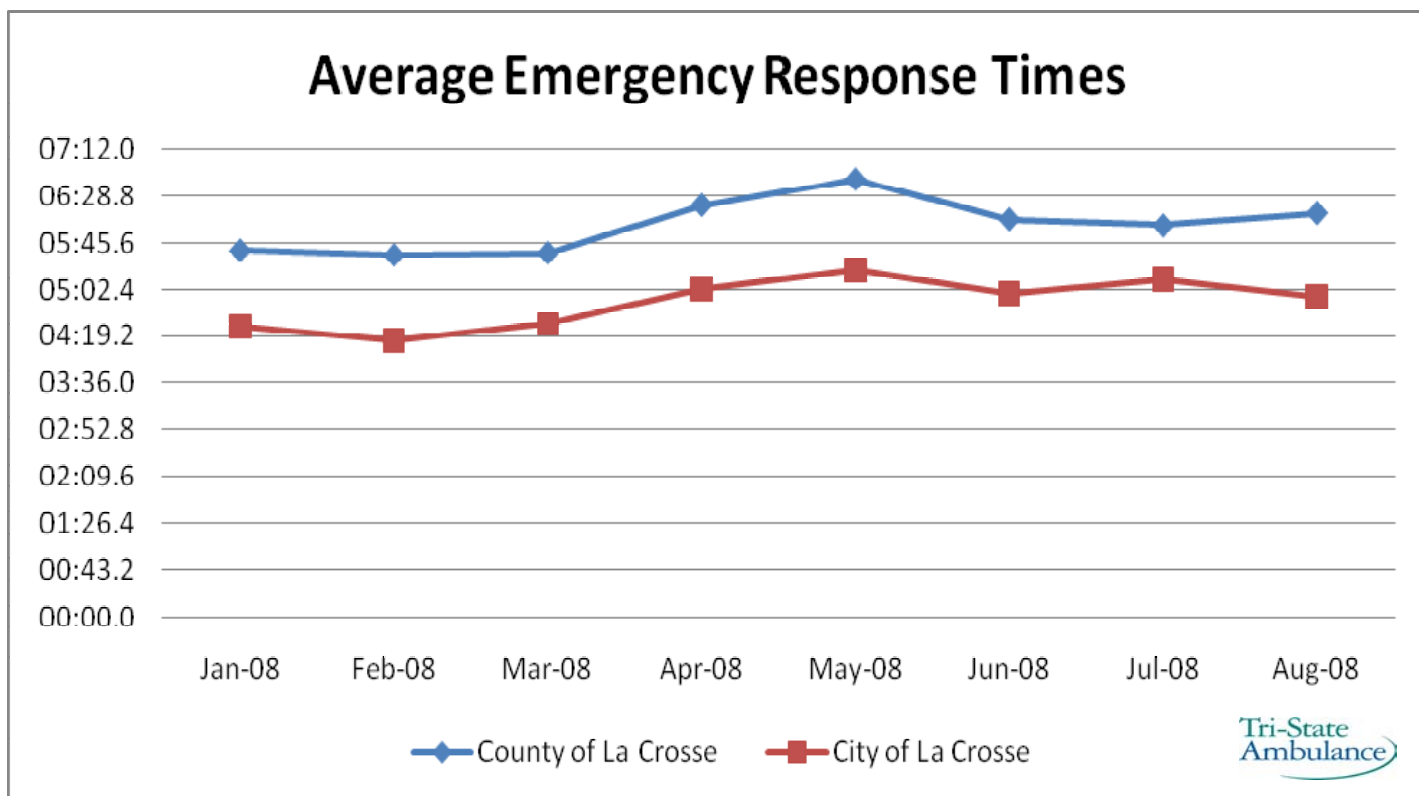


Exhibit 3



ⁱ Kristin M. Vrotsos, BS, Ronald G. Pirrallo, MD, MHSA, Clare E. Guse, MS, Tom P. Aufderheide, MD; DOES THE NUMBER OF SYSTEM PARAMEDICS AFFECT CLINICAL BENCHMARK THRESHOLDS? Presented at the 15th Annual Emergency Medicine Research Forum, Milwaukee Wisconsin, April 2007; and as a poster at the National Association of EMS Physicians, Phoenix, Arizona, January 2008

ⁱⁱ Fitch, J, Ph.D.; Prehospital Care Administration; JEMS Publishing, San Diego, CA