

# Consultant Report

---

## Genesee County Emergency Medical Services Financial and Programmatic Review

---

September 30, 2005

**FITCH & ASSOCIATES, LLC**

303 Marshall Road, Box 170  
Platte City, MO 64079  
(816) 431-2600  
[www.fitchassoc.com](http://www.fitchassoc.com)

# Genesee County Emergency Medical Services Financial and Programmatic Review

## TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY</b>	<b>1</b>
THE EMS SYSTEM DOES NOT BENCHMARK WELL	1
LACK OF COHESIVE GOVERNANCE & OVERSIGHT	2
EMS MILLAGE SUPPORTS BOTH PARAMEDIC & CITY MFR SERVICES	2
OPTIONS FOR THE FUTURE	3
<b>METHODOLOGY</b>	<b>5</b>
<b>INTRODUCTION</b>	<b>6</b>
THE REGION	6
<b>CURRENT EMS SYSTEM DESCRIPTION</b>	<b>8</b>
GENERAL SYSTEM PROFILE	8
PARAMEDIC PROGRAM HISTORY	10
COUNTY SHERIFF'S PARAMEDICS	11
FLINT FIRE DEPARTMENT	14
AMBULANCE PROVIDERS	16
AREA FIRE DEPARTMENTS (MEDICAL FIRST RESPONDERS AND BASIC LIFE SUPPORT SERVICES)	19
911 DISPATCH/COMMUNICATIONS CENTERS	20
<i>Genesee County E-911 Consortium</i>	20
<i>Flint Fire 911</i>	23
<i>Fenton 911</i>	24
<b>SYSTEM OVERSIGHT</b>	<b>27</b>
MEDICAL CONTROL AUTHORITY	27
TRANSPORT PROVIDER OVERSIGHT	28
CLINICAL QUALITY ASSESSMENT	29
RESPONSE TIME MONITORING	29
911 DISPATCH OVERSIGHT	31
COUNTY REGULATORY AUTHORITY	32
<b>EMS MILLAGE AND FINANCIAL REVIEW</b>	<b>33</b>
EMS MILLAGE HISTORY	33
FINANCIAL ANALYSIS AND USE OF FUNDS	35
<i>Genesee County Sheriff's Office</i>	35
<i>Flint Fire Department</i>	38
EMS MILLAGE INEQUITY	41
<b>THE OPTIMAL EMS SYSTEM</b>	<b>42</b>

<i>RESPONSE TIMES</i>	43
<i>SYSTEM COSTS</i>	44
<b>IMMEDIATE ACTIONS FOR SYSTEM ACCOUNTABILITY</b>	<b>46</b>
<b>OPTIONS FOR THE FUTURE</b>	<b>49</b>
SERVICE LEVELS	49
DELIVERY MECHANISMS	50
<i>Option 1. Integrate Medical First Response Services</i>	50
<i>Option 2. Coordinate and Regulate the EMS System</i>	51
<i>Option 3. Develop Comprehensive System and Competitively Procure a Single ALS Provider</i>	52
FUTURE FUNDING NEEDS	54
Figure 1. Genesee County Townships and Municipalities	7
Figure 2. Emergency Calls and Transports in Genesee County	9
Figure 3. Genesee County Sheriff's Office Paramedic Responses	12
Figure 4. Increased Percentage of Emergency ALS Transports	13
Figure 5. Flint Fire EHCO Unit Dispatches to Tier 1 Calls	15
Figure 6. Flint Fire Call Profile	16
Figure 7. Genesee County Ambulance Base Map – September 2005	18
Figure 8. First Call Success Locating Ambulance for Tier 1 Calls	22
Figure 9. Genesee County Response Time and Dispatch Issues	25
Figure 10. Comparison: Medical Control <i>Reported</i> Fractile Response Times	30
Figure 11. Revenues, Expenses and Fund Balance of Genesee County Paramedic Program	36
Figure 12. Flint Fire Expenditures	39
Table 1. Fastest Growing Jurisdictions in Genesee County	6
Table 2. Tier 1 and Tier 2 Calls for Service	8
Table 3. Sheriff's Office Paramedic Unit Staffing Patterns	11
Table 4. Ambulance Providers, Number of Base Locations and Ambulance Types	17
Table 5. Medical First Response Resources in Genesee County	19
Table 6. Genesee County 911 Dispatch Staffing Patterns	21
Table 7. Expenses Identified in Sheriff's Office Paramedic Program Budget	37
Table 8. City of Flint EMS Millage Revenues	38
Table 9. EMS Benchmark Categories	43
Table 10. Total System Costs	44
Table 11. Genesee County Costs and Performances Compared	45
Table 12. Recommendations and Impacts	48
Table 13. Options Summary	54

Attachments

- A. Ambulance Provider and Base Addresses
- B. Genesee County Sheriff's Office Paramedic Revenues & Expenses
- C. Benchmark Summary
- D. Legal Review

---

## EXECUTIVE SUMMARY

---

Many dedicated individuals provide high quality patient care services in Genesee County. The “system” however has become a patchwork quilt of organizations that does not function in the patient’s best interest. Simply stated, Genesee County EMS is not medically driven. Its communication’s command and control function cannot communicate between 911 and ambulances. The ambulance base allocation process can be likened to a competitive game of musical chairs. Millage funds intended to be used for paramedic service have been expended for fire first response by the City of Flint. Regulatory oversight and clear lines of leadership authority are lacking. Elected officials must act in a timely manner to ensure that patients are not unnecessarily placed at risk.

The project involved reviewing EMS operations, determining use of EMS millage proceeds and recommending options for the future. This section summarizes our findings.

### **The EMS System Does Not Benchmark Well**

Despite the good work done by paramedics, emergency medical technicians and support personnel, the Genesee County EMS system does not benchmark well against 50 common industry benchmark indicators. Only 10 of 50 benchmarks could be documented as achieved. Another 9 were documented as partially achieved.

Reported response times are understated and cannot be independently validated. Data captured does not support meaningful analysis or quality improvement. The three 911 centers function at widely varying levels of proficiency. Only Genesee County 911 provides consistent pre-arrival instructions utilizing medically certified dispatchers.

The 11 individual ambulance services must be manually called to determine if they have a unit available for response. In fact, on three of 10 calls, 911 dispatchers have to call two, three and at times four ambulance companies before locating an available transport ambulance. Ambulance dispatch and therefore arrival is unnecessarily delayed.

Requests for service and ALS transports are increasing. Annual paramedic responses by the County Sheriff’s Department increased on average six percent per year. Responses by the City of Flint Fire Department Paramedic Unit have decreased eight percent per year on average over a three year period. County paramedics are regularly responding to calls within the City.

Medical first responders are not consistently dispatched in all areas. Funding inequities exist between City and County basic life support medical first responders.

The system delivers response times that are approximately four minutes longer than best practice benchmark systems at a cost that is more per capita than those same systems.

## **Lack of Cohesive Governance & Oversight**

The Genesee County Medical Control Authority (MCA) is responsible for supervising and coordinating emergency medical services. Medical control functions of the system are underfunded and understaffed; severely limiting its ability to provide meaningful oversight. In fact, the quality improvement functions for this system are carried out by a single staff member, physician volunteers and ambulance agency representatives that self refer cases to be reviewed.

The 911 centers have generally remained independent of meaningful medical control. The Genesee County 911 Consortium, which is the primary dispatch center for the system, does not provide data or reports to Medical Control. Elected officials need to recognize the importance of 911 command and control and deployment functions and hold all parties accountable to provide information and support to the EMS system that it serves.

Genesee County has clear legal authority to enact an ordinance to regulate the EMS system including ambulance operations, non-transport advanced and medical first response services. The future options presented in this report suggest varying degrees of EMS system regulation and focus on creating a performance-based system that holds providers accountable.

## **EMS Millage Supports Both Paramedic & City MFR Services**

The EMS millage was first adopted in 1981. Documents including the Paramedic Program Agreement between Flint and the County as well as past actions infer that the intent of the EMS millage is to fund a paramedic program in the City and the County. However, ballot language simply states “EMS”.

Genesee County received \$4.1 million for the Sheriff’s Office paramedic program in Fiscal Year 2005. The County accounts for EMS millage funds in a separate special revenue fund. Direct and indirect costs of the Sheriff’s paramedic program are accounted for in the paramedic program fund. The officer/paramedics are cross-trained and a portion of their on-duty time is spent performing law enforcement work.

The City of Flint received \$768,955 in EMS millage funds in FY2005. City accounting tracks the revenues as a separate line item in the general fund, but does not have a paramedic program special revenue fund. Instead, the City considers that the EMS millage revenues offset costs of the Fire Department EMS efforts including the single paramedic ECHO unit and medical first responder services delivered by fire suppression units. The cost to operate the Flint paramedic unit is approximately half the EMS millage revenues collected.

## Options For The Future

Opportunities for improving the operational efficiency and effectiveness of the EMS system are provided throughout the report. These can be and should be implemented regardless of the system design option selected. Three high level system design options are presented. Each option assumes that the recommendations for immediate action will be implemented first. The options are:

- **Integrate Medical First Response Services.** This option suggests that EMS millage funds be shared with area fire departments (including the City of Flint) based on a population and call volume/response based formula. Medical first responders and ambulance providers would enter into service agreements with the County that would set out various operational criteria. This approach is otherwise status quo for providers and does not address the “free-for-all” competitive environment. EMS funds would also be shared with Medical Control based on the number of calls in the system. Medical Control in collaboration with the County would set strict response time standards.
- **Coordinate and regulate the EMS system.** This option requires that the County enact an EMS ordinance that establishes two to three response zones for exclusive award to private ambulance companies. Paramedic first response programs would continue to operate at current levels. The designated zone providers will respond to emergency and non-emergency ambulance transport requests under strict performance based contracts that include penalties for non-performance. Similar to Option 1, EMS millage funds should be shared with medical first responders who agree to standards and performance based contracts. Medical Control would also receive funds from the EMS millage.
- **Develop comprehensive system standards and competitively procure a single provider.** Genesee County would need to enact an ordinance to regulate the system.

Operating much like utility or public franchise, the provider would have exclusive market rights to perform all emergency and non-emergency transports in Genesee County. The approach contemplates a sophisticated business structure and utilizes a single competitively procured provider. It requires that strict operational, financial and clinical performance standards with financial safeguards be implemented as part of the foundational design of the EMS system. The need for EMS millage or other funding would be limited to providing a system administrator, additional staff for Medical Control and possibly funds for medical first responders.

Each of these options described can be implemented and were designed to improve the clinical quality and response time standards of the system. Each provides increasing degrees of regulatory authority.

The options should be objectively evaluated in order to:

- Improve clinical care and provide for external and internal performance monitoring of all aspects of the system from 911 communications through to ambulance transport.
- Deliver value to the taxpayers of Genesee County.
- Hold system participants accountable for operational, clinical and financial excellence, and,
- Provide the citizens of Genesee County with the security of knowing their EMS system is clinically sophisticated, operationally reliable and financially sustainable.

---

## METHODOLOGY

---

Genesee County retained Fitch & Associates to audit the Genesee County and City of Flint Emergency Medical Services millage and assess the current operations of the Genesee County EMS System. Study results document how millage proceeds were used and identifies high level EMS system options that could lead to improved cost efficiencies and an improved EMS system. Other objectives were to clarify the legal basis for regulation of the EMS system and the extent to which the County can regulate the EMS system.

During the month of May 2005, the consultants provided Genesee County Health Department Director, Robert Pestronk, with a thirty-page Information Data Request (IDR) document to be completed. The document was distributed to the Genesee County Medical Control Authority (MCA), City of Flint - Fire, Finance and 911 Departments. It was also distributed to the Genesee County Sheriff, Finance and Human Resources Departments, the City of Fenton Fire Department and the Genesee County 911 Consortium.

During June, July and August, 2005, the Consultants conducted five site visits and met with personnel in Genesee County including Genesee County elected officials, the County Sheriff, City of Flint administrators including the Fire Chief, and key fire staff members. Consultants met with the President of the Police Officers Association of Michigan, representing the Sheriff's Police deputies and interviewed other State EMS officials by telephone.

Process observations were conducted at the Genesee County 911 Consortium, Flint 911, and Fenton 911 dispatch centers and we directly observed patient care by riding with a Genesee County paramedic/ECHO unit and the Flint Fire paramedic/ECHO unit. We met with Medical Control Authority staff as well as the emergency physicians who serve as EMS System Medical Directors from the three Genesee County hospitals. We conducted site visits at the three largest private ambulance providers and conducted two input sessions – one for all private ambulance providers and one open to all city and township officials in Genesee County. Throughout the project, consultants conducted weekly conference calls with the Director of Health.

---

# INTRODUCTION

---

## The Region

The Genesee County EMS service area includes all areas within the geographic boundaries of the County. Located in southeastern Michigan, approximately 50 miles north-northwest of Detroit, Michigan the County is comprised of 649 square miles of urban, suburban and some rural development. The Flint River divides the county and is only passable in certain locations. Winter weather is an additional response challenge.

Genesee County's population estimate is 447,218 for 2005. For the period from 2000 to 2005, the County experienced growth of approximately two and a half percent. In contrast, five of the County's 31 cities and townships experienced growth of more than 10 percent for the same period. All five of the high growth cities are located in outlying southernmost portions of Genesee County in suburban areas. Four of the five cities have populations of greater than 10,000 with Grand Blanc Township's population the largest at 34,674.<sup>1</sup> Together, the jurisdictions include 76,555 residents. Table 1 lists the jurisdictions, their population and percentage growth between July 2000 and 2005.

**Table 1. Fastest Growing Jurisdictions in Genesee County**

City/Township	Population 2005	Percent Growth 2000 to 2005
Grand Blanc Township	33,751	+13%
Fenton Township	14,271	+10%
Mundy Township	13,367	+10%
Fenton City	11,902	+12%
Linden City	3,264	+14%
TOTAL	76,555	

Growth rates slowed in the last year for some jurisdictions, but remain strong overall. Figure 1 is a map of Genesee County that indicates the location of cities and townships.

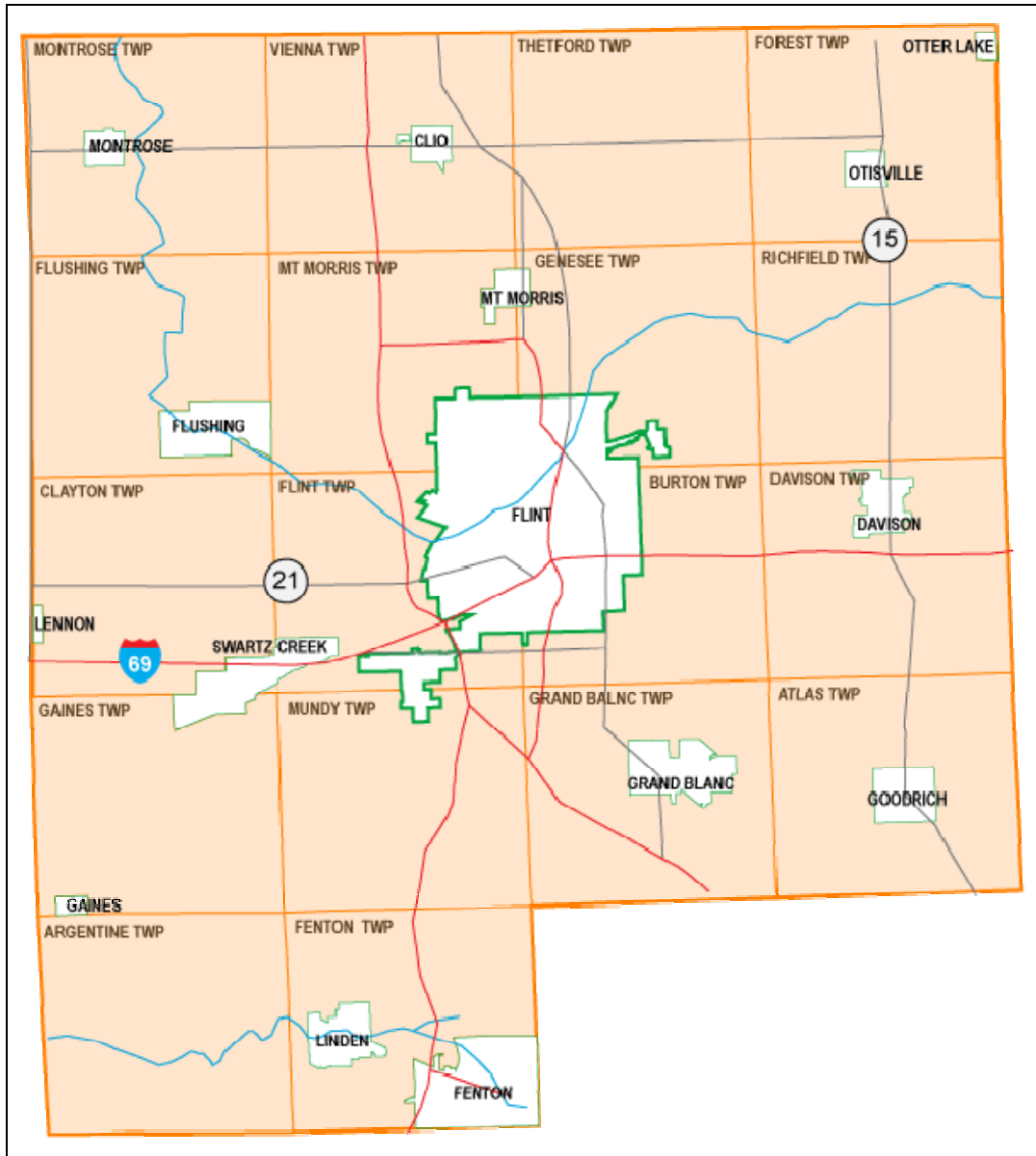
The City of Flint, which is located in the center of Genesee County, is 31.7 square miles and is the largest and most densely populated city within Genesee County. Flint's population for 2005

---

<sup>1</sup>2030 Population Projections, Genesee County, Genesee County Metropolitan Alliance, March 2005.

is projected at 121,897, which represents 3,845 people per square mile. The 2005 population projection reflects a population loss of two percent since 2000.<sup>2</sup> Declines in the auto industry and overall economy have severely challenged the region for more than a decade.

**Figure 1. Genesee County Townships and Municipalities**



<sup>2</sup> 2030 Population Projections Genesee County, Genesee County Metropolitan Alliance, March 2005.

---

# CURRENT EMS SYSTEM DESCRIPTION

---

## General System Profile

Genesee County Sheriff's deputies, who are certified paramedics, provide Advanced Life Support (ALS) to medical emergencies throughout the County. Within the City of Flint, the Flint Fire Department and private ambulance providers respond to medical emergencies and are augmented by Genesee County Sheriff's Office paramedics as needed. Several townships contract directly with private ambulance providers to position either advanced or basic life support units in or near their jurisdictions.<sup>3</sup> In all of the other cities except Fenton, the Sheriff's Office paramedics are the primary responders.

Nine local fire departments are dispatched by Genesee County 911 to provide Medical First Response (MFR). Fire protection is provided by individual city and township fire departments. Countywide, 11 private and not-for-profit ambulance companies transport patients needing ALS or Basic Life Support (BLS) services for medical emergencies.

Genesee County EMS providers responded to 43,360 requests for emergency service in CY2004. Emergency medical responses are categorized as either Tier 1 (life-threatening) or Tier 2 (non-life threatening) calls. Table 2 includes Tier 1 and Tier 2 calls.

**Table 2. Tier 1 and Tier 2 Calls for Service**

	CY2003	CY2004	CY2005 Jan. to June
No. Responses	37,809	43,360	21,807
No. Transports	31,972	41,510	16,761
No. Emergency ALS Transports	15,829	22,818	7,790
No. Emergency BLS Transports	16,143	18,692	8,971

*Source: Medical Control Authority (A call is counted once even though there may be multiple responders to the call).*

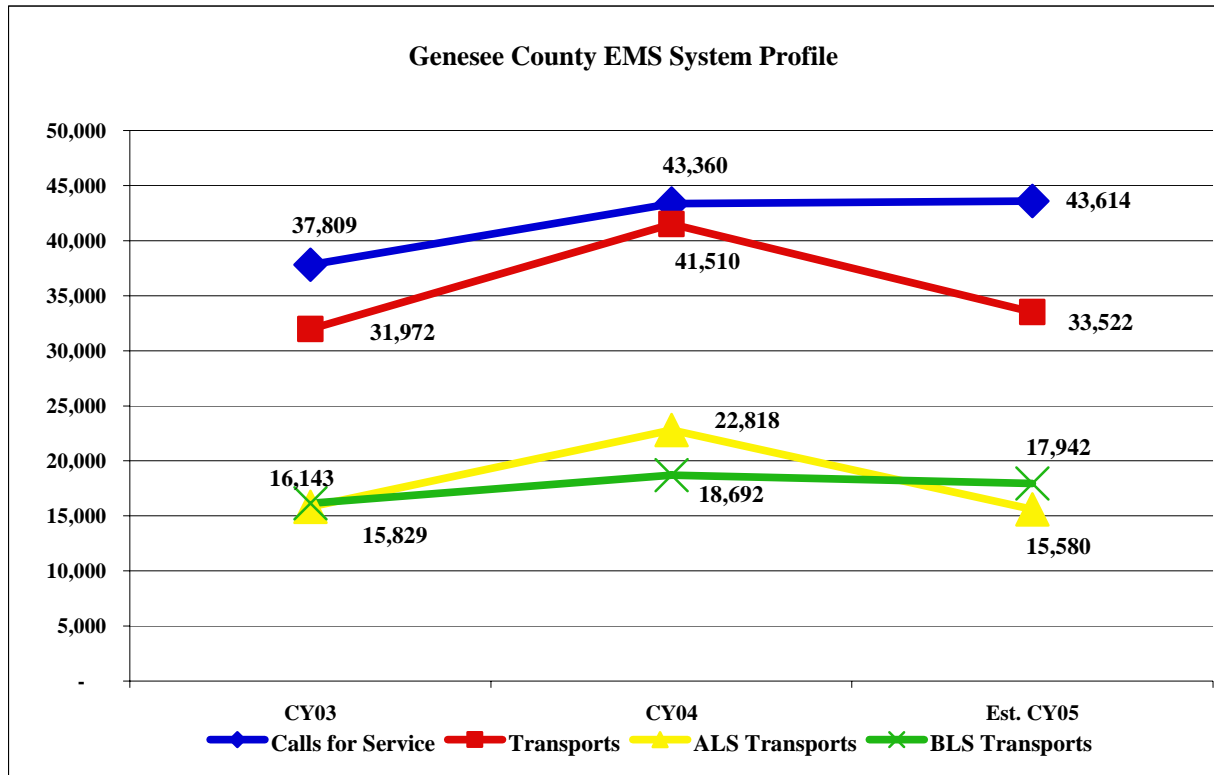
Figure 2 depicts the emergency medical call volume and emergency transports for the periods of CY2003, CY2004 and estimated for CY2005 based on the first six months of data.<sup>4</sup>

---

<sup>3</sup> The closest available paramedic unit is dispatched to a 911 call regardless of contracts in place with private providers. This policy was under debate at the beginning of this engagement and at the time of the report writing, the policy reverted to that of dispatching the closest available unit.

<sup>4</sup> In addition, there are an unreported number of non-emergency requests/transports that occur within the county. Typically, non-emergency transport volume is equal to 80-90% of emergency volume.

**Figure 2. Emergency Calls and Transports in Genesee County**



Requests for medical emergencies for all providers increased from 2003 to 2005. In CY2004, there were 43,360 calls for service, which represents a 15 percent increase over the prior calendar year. Calls appear to have leveled out between CY2004 and the estimates for CY2005; patient transports have declined compared to the prior year.<sup>5</sup>

From CY2003 to CY2004, there is a marked increase in the number of patients transported as a result of medical calls to 911. While calls increased only three percent, combined emergency ALS and BLS transports increased 13 percent. Projecting forward for CY2005, there is a continuing increase in call volume but a slowing in the number of transports. Seventy-five to eighty percent of all calls result in patients being transported to the hospital. Based on recent call volume, it appears that the need for response resources will continue.

Calls to 911 will increase in a community for a number of demographic reasons, particularly a poor and/or aging population. Higher healthcare costs and fewer people with health insurance leave many people with few options. Calling 911 is often the only access into the healthcare system. Some of these factors are valid for Genesee County. However, the Genesee County

<sup>5</sup> CY2005 estimate is based on a straight-line projection of the January through June 2005 experience.

EMS system operates with few controls and little to no regulation. The upswing in transports is occurring at a time of low population growth. The County and its citizens would be well served to further explore the reasons for the dramatic increase in patient calls and more importantly, patient transports.

## **Paramedic Program History**

In 1978, the Flint Fire Department, Genesee County Sheriff's Department and the Greater Flint Area Hospital Assembly worked together to initiate the first paramedic program in Genesee County. Flint Fire had previously provided basic ambulance service. It trained firefighters as paramedics and upgraded its ambulances to advanced life support. The Sheriff's Department paramedic program began with a grant funded by the State of Michigan and Office of Highway Safety Planning to establish a special unit of Highway Safety Paramedics beginning in 1979. The Sheriff's paramedics were fully certified police deputies who responded in non-transporting advance life support (ALS) units. Some municipal jurisdictions provided and continue to provide medical first response services with either volunteer or paid personnel. The paramedic program was the first attempt at a cohesive countywide EMS system.

Flint Fire's paramedic program included EMS units staffed with firefighters and cross-trained as paramedics. After the initiation of the millage, Flint Fire operated four ambulances. Two were ALS transport ambulances, two BLS licensed ambulances, and it provided one single-person/paramedic unit known as the ECHO unit or E-170. Fire personnel licensed as medical first responders also responded to medical emergencies in fire units. All units operated 24 hours a day, seven days a week and were staffed with cross-trained firefighters.

In July 2001, the Fire Department eliminated two of its four ambulances in response to financial difficulties. In April 2002, all fire transport units were eliminated. The paramedic staffed ECHO unit continued to respond to ALS emergency calls and remains in operation today. Fire units also continue responding to critical emergencies providing basic aid, as available.

## County Sheriff's Paramedics

Currently, the Sheriff's Paramedic Division includes 41 positions: a Division Captain, seven EMS supervisors who are assigned to three daily shifts, and 33 paramedic deputy positions. All personnel in the division are paramedics.

Sheriff EMS units are assigned to patrol districts that cover the entire county except within the City of Flint. Staffing levels are designed to match call demand and are adjusted periodically depending on call trends. Sheriff's deputies work eight-hour shifts. Currently, staffing includes eight to 10 units on the 7 a.m. to 3 p.m. shift, eight to ten units on the 3 p.m. to 11 p.m. shift and three to five units plus one or two working supervisors on the 11 p.m. to 7 a.m. shift. Deploying units to match demand is a best practice that preserves resources and spreads unit hours to the times they are most needed. Table 3 depicts the Sheriff's paramedics' staffing patterns.

**Table 3. Sheriff's Office Paramedic Unit Staffing Patterns**

Response Unit	7 a.m. to 3 p.m.	3 p.m. to 11 p.m.	11 p.m. to 7 a.m.
Paramedic Units	8 to 10	8 to 10	3 to 5

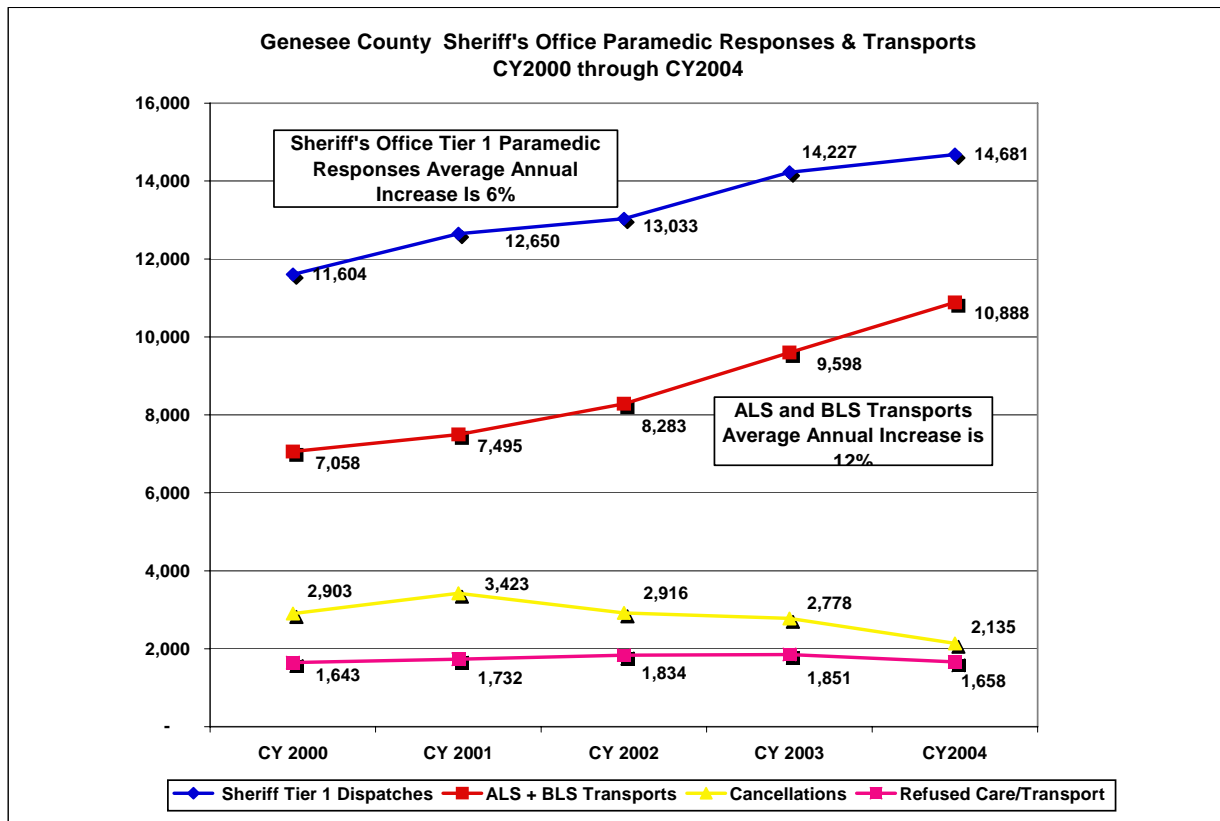
Sheriff's paramedic deputies perform law enforcement work while on duty. However, whenever possible their duties are limited to tasks that can be quickly terminated in order to respond to an EMS call. The exception is when a person is taken into custody for an infraction such as drunk driving. By and large, Sheriff's paramedic deputies assist other local law enforcement agencies and typically turn over law enforcement calls to those agencies. Responding to medical emergencies is the first priority for the Sheriff's paramedic deputies. Units are available for EMS calls 90 to 95 percent of the time in the field.<sup>6</sup>

Sheriff's Office paramedics responded to 14,681 calls for emergency medical service in CY2004. From CY2000 to CY2004 responses increased an average of six percent annually. To handle the increased call volume, maintain or improve response times and cover the increasingly populated outlying jurisdictions, three paramedic response units were added. A total of The 14 response capable vehicles are maintained. Figure 3 on the following page depicts the Sheriff's Office Paramedic Response history and the transports that resulted from those responses.

---

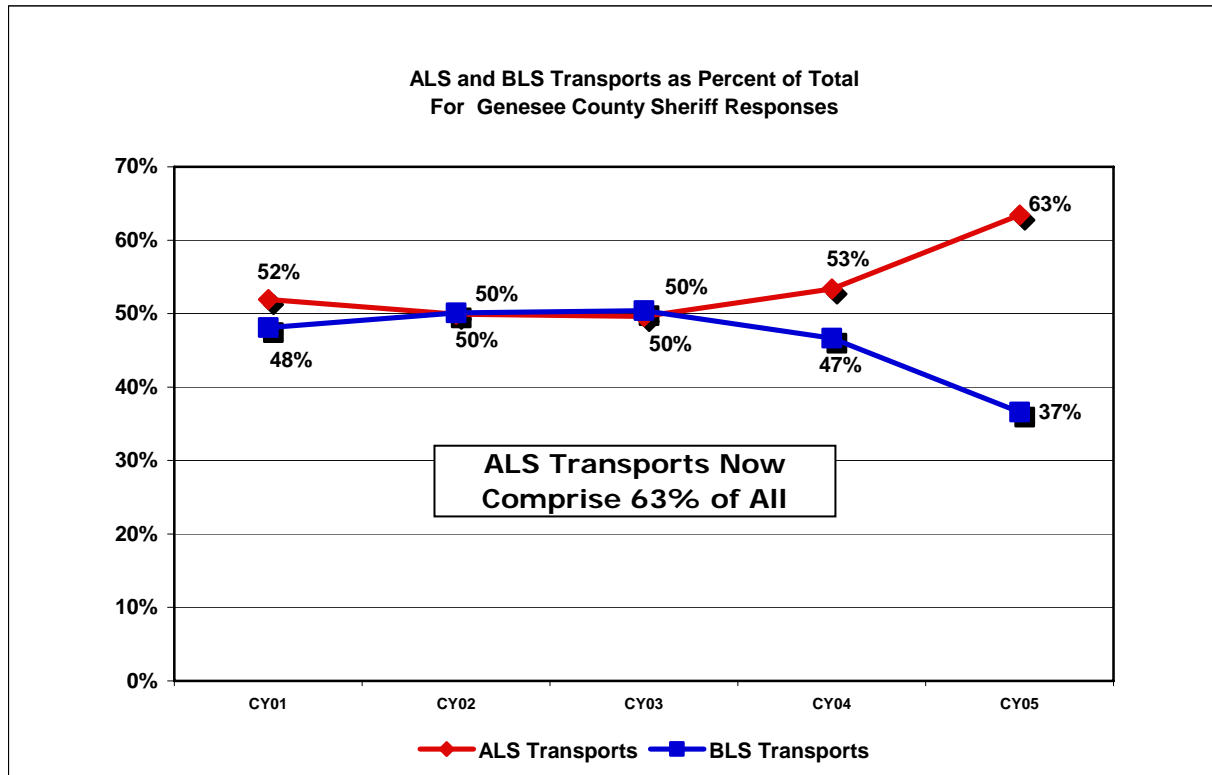
<sup>6</sup> Interview with Michael Becker, EMS Captain, Genesee County Sheriff's Office.

**Figure 3. Genesee County Sheriff's Office Paramedic Responses**



The increased number of Sheriff’s Office responses and resulting transports reflects the trend seen in the overall Genesee County system. However, there is an even greater trend towards more ALS transports in relation to BLS transports for Sheriff’s Office responses. In CY2001, CY2002 and CY2003, ALS and BLS emergency transports are nearly equal for Sheriff’s Office paramedic responses. In CY2004, ALS transports in relation to BLS transports represented 53 percent of emergency transports but further increased in CY2005 to 63 percent of emergency transports. Figure 4 is a graphic representation of the ratio of ALS versus BLS emergency transports that result from Sheriff’s Office Tier 1 responses.

**Figure 4. Increased Percentage of Emergency ALS Transports**



The trend of an increasing proportion of ALS transports deviates significantly from nationwide trends where the opposite profile is the norm. This is an issue that Genesee County providers and the Medical Control Authority should study to assure that patients are receiving the appropriate level of care (and expense) for their medical condition and emergency transport.<sup>7</sup>

Significant changes in an EMS system should be studied and understood by policy makers. Medical Control and the County should carefully review practices and protocols to determine why the changes have occurred and whether they are in the best interest of the patient and the overall system. If Sheriff’s Office paramedics are riding along on transports more often than necessary, then the benefit of additional paramedic units may be negated by lack of coverage availability during those transports. If the ALS designation is occurring at the private ambulance level when Sheriff’s Office medics are not riding along, then there are other issues to be addressed. Medicare and Medicaid, the government organizations that reimburse the largest percentage of ambulance transport fees, look carefully at communities with dramatic increases in

<sup>7</sup> Based on conversations with Medical Control and the Sheriff’s Office, there does not appear to be any one protocol or practice change that would cause the dramatic shift.

ALS transports. This is an important issue that deserves careful study by MCA, the County and the ALS provider community.

The system medical director, Medical Control Authority and other providers in the system speak highly of the Sheriff's Office paramedics. They appear to be dedicated and highly skilled. They work in an organization and community that values their individual contributions to the welfare of their patients.

## **Flint Fire Department**

The single Flint Fire ECHO unit and private ambulances are the primary ALS responders in the City of Flint today. Sheriff's Office paramedic units respond into Flint as needed.<sup>8</sup> Currently, private and not-for-profit ambulance companies transport all emergency patients in the City of Flint and throughout the County in a non-exclusive, unregulated environment. Flint fire suppression units respond as medical fire responders on medical calls within the City. However, we were advised that recently Flint Fire suppression units are responding to fewer EMS calls due to operational and financial limitations.

Certified firefighters are cross-trained with varying levels of medical certifications. The Department's current roster includes 33 paramedic firefighters, 70 Emergency Medical Technician (EMT) firefighters and eight Medical First Responder (MFR) firefighters. The Department operates six fire engines, two ladder trucks and two squad cars, all of which are licensed at the MFR level. Although the majority of Flint firefighters have either BLS or paramedic certifications, they are limited to providing medical first response level care based on the licensure and equipment of their vehicles. The Department's ECHO unit is staffed as a single-person, quick response ALS unit operating 24 hours a day, seven days a week.

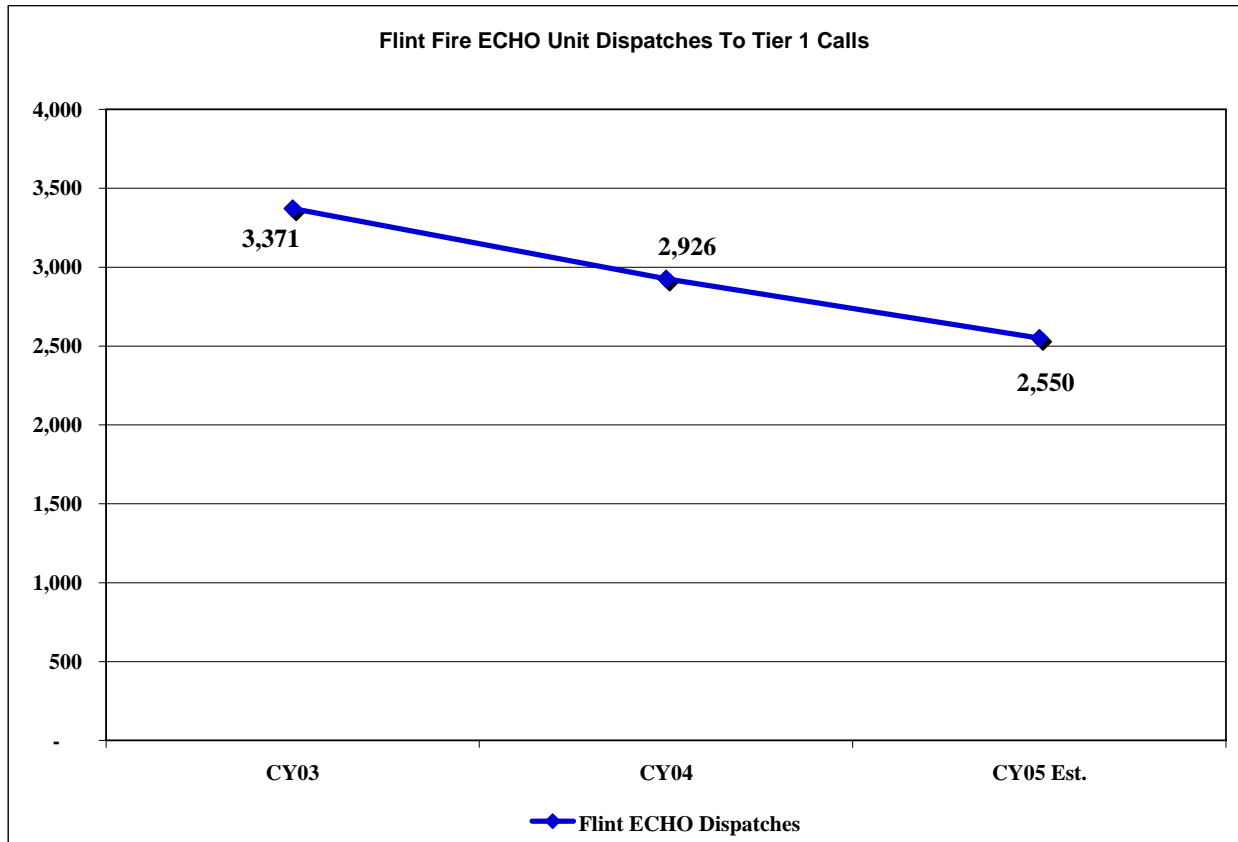
Call volumes reflect the reduced service levels of the Flint Fire Department since CY2002, but responses by the ECHO unit have also continued to decline. CY2003 is the first full year that Flint Fire did not operate transport ambulances. Starting at CY2003, ECHO Tier 1 calls fall from 3,371 to approximately 2,550.<sup>9</sup> Figure 5 below depicts the number of Tier 1 responses by the Flint Fire paramedic unit.

---

<sup>8</sup> A random sample of two months in CY2005 indicates that the Sheriff's Office paramedics were dispatched into the City of Flint approximately 30 times each month.

<sup>9</sup> Source: Flint Fire Department. The 2005 estimate is based on a straight-line projection of January through June 2005 data.

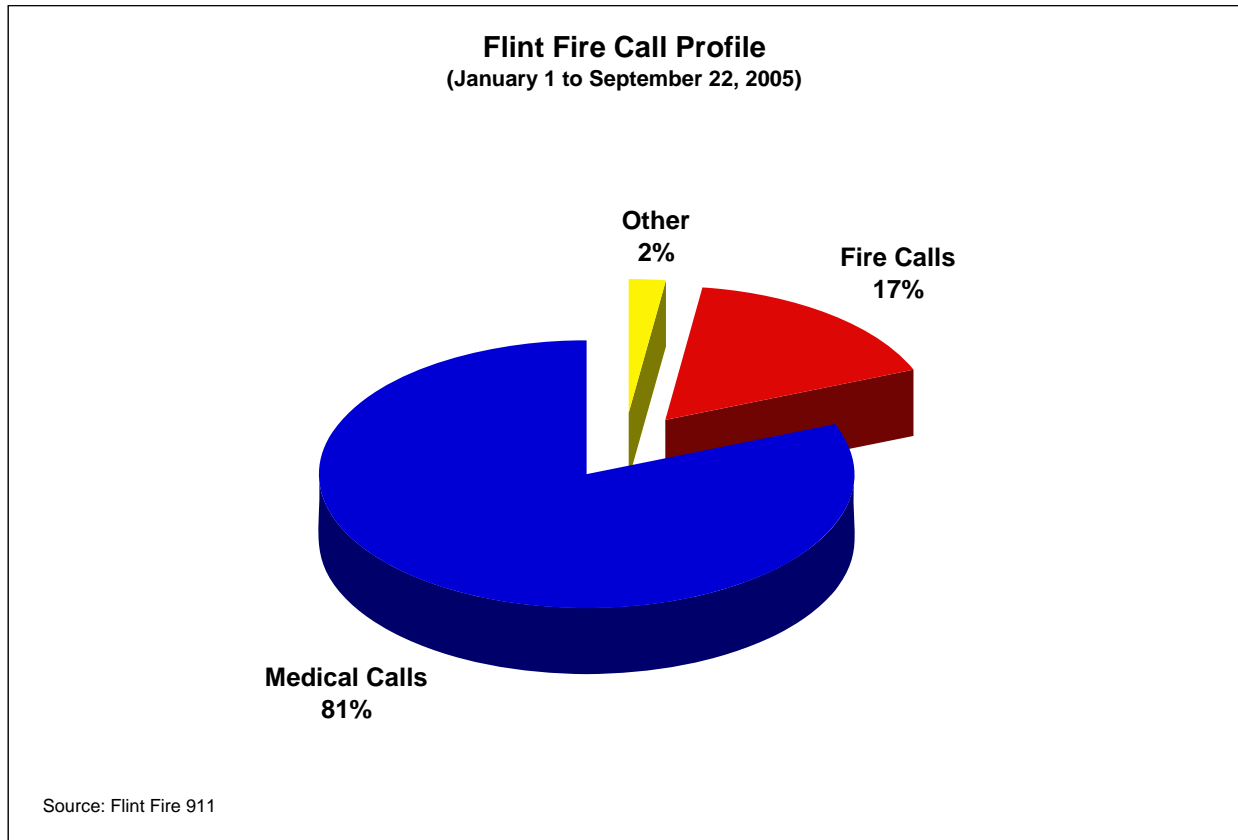
**Figure 5. Flint Fire ECHO Unit Dispatches to Tier 1 Calls**



ECHO responses have decreased by approximately 300 calls annually. There is no apparent reason for this change since the overall call volumes are increasing or steady. The ECHO unit responds to an average of seven to eight calls in a 24 shift.

The typical profile for fire department call volumes is 70 to 80 percent medical calls and the remainder fire and other calls. Flint Fire reflects this profile. Between January 1 and September 22, 2005, Flint Fire 911 dispatched 15,247 calls. Of the total, 12,662 were medical calls, 2,585 were fire-related and 361 were other miscellaneous calls. Figure 6 depicts Flint Fire's call profile.

**Figure 6. Flint Fire Call Profile**



## **Ambulance Providers**

Eleven private and not-for-profit companies provide transport for emergency and non-emergency patients. Private ambulances are dispatched to all Tier 1 calls and can be the sole unit dispatched as first responder when either the Flint ECHO unit and/or Sheriff's paramedic units are not available.

Several townships have contracted directly with ambulance providers for first response to patients and transport. For a short period of time, Genesee County 911 dispatched the ambulances to calls in those jurisdictions regardless of the location of Sheriff's Office paramedic units. Within the past month, Genesee County 911 reverted back to its policy of dispatching the closest unit to a call location. The City of Fenton maintains its own municipal 911 Communications Center. Calls for service that originate in the City of Fenton are routed through that dispatch center. Emergency medical calls are received at Fenton 911 and transferred immediately to Regional Emergency Medical Services (REMS) for response. Fenton 911 personnel can choose to remain on the line with the caller, but otherwise does not follow the

disposition of the call. Sheriff's Office medics are not dispatched to Fenton City calls even if they are closer to the emergency assignment. This is not good public policy. Recent court cases have held government entities responsible for not dispatching the closest appropriate units to emergency medical calls especially when there are ready means to achieve an appropriate dispatch.

As of September 2005, there are 32 fixed base locations and 11 providers operating in Genesee County. Eleven of the base locations (one designated by each ambulance provider) are required by Medical Control to be staffed 24 hours a day, seven days a week for the purpose of responding to emergency dispatches from Genesee County 911.

The 11 transport providers staff base locations throughout the county. The number of base locations and ambulances (ALS and/or BLS) are reported in Table 4.

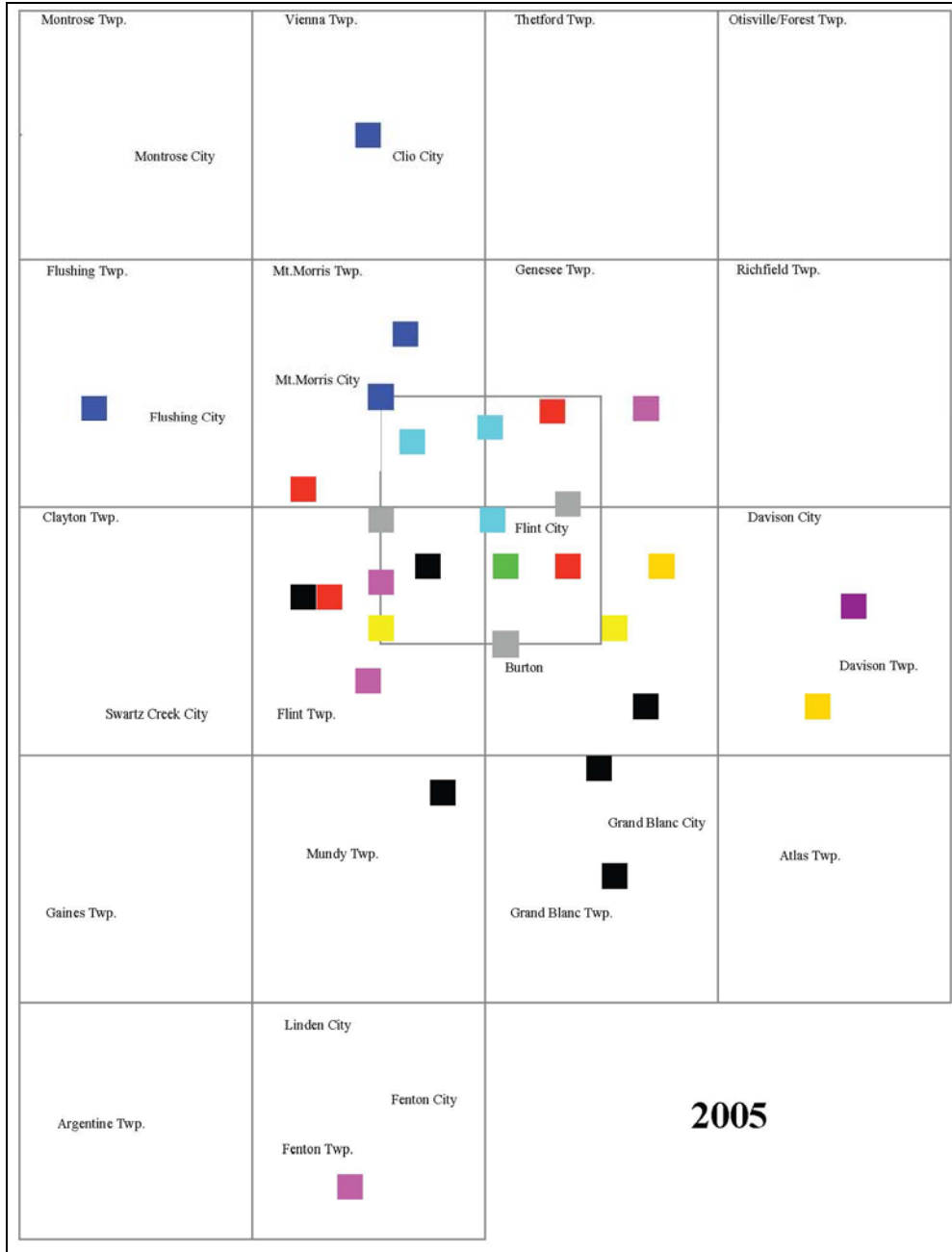
**Table 4. Ambulance Providers, Number of Base Locations and Ambulance Types**

<b>Provider Name</b>	<b>No. Base Locations</b>	<b>No. ALS Ambulances</b>	<b>No. BLS Ambulances</b>	<b>Total No. Ambulances</b>
Byron	1	1	0	1
C-M	4	0	4	4
Deerfield	1	1	0	1
DVA	4	3	1	4
MED STAT	3	2	1	3
ERS	2	1	1	2
Patriot	2	1	1	2
REMS	4	2	2	4
STAT EMS	4	3	1	4
Swartz	6	4	2	6
Twin Township	1	1	1	2
<b>Total</b>	<b>32</b>	<b>19</b>	<b>14</b>	<b>33</b>

Nineteen of the 33 ambulances provide paramedic level service and 14 are BLS licensed ambulances. Figure 7 is a diagram of the base locations maintained by Medical Control as of September 2005. Ten of the 32 base stations are located within the City of Flint and are staffed

with eight ALS and two BLS ambulances. A listing of the ambulance providers and base addresses is provided in Attachment A.

**Figure 7. Genesee County Ambulance Base Map – September 2005**



## Area Fire Departments (Medical First Responders and Basic Life Support Services)

Ten cities and townships in Genesee County (not including the City of Flint) provide medical first response through the fire departments. A total of 17 vehicles are licensed as MFRs to provide service.<sup>10</sup> The fire departments provide initial basic patient assessment and maintain automatic external defibrillators (AEDs), which are critical to saving and preserving life in the event of a cardiac arrest.

Seven of the departments routinely respond on Tier 1 calls and two respond to Tier 1 calls when a paramedic or ambulance is not available within five minutes. The fire departments that provide MFR are primarily located in the outlying areas of Genesee County: Argentine, Atlas, Fenton, Gaines, Linden and Mundy Townships and Fenton City in the south, Montrose in the northwest, Forest/Otisville in the northeast and Davison/Richfield on the east border of the county.

Table 5 indicates the fire departments that provide medical first response and indicates the number of licensed vehicles. All but Fenton City respond on Tier 1 calls.

**Table 5. Medical First Response Resources in Genesee County**

Twp/City Name	No. MFR Vehicles	Location
Argentine	2	South
Atlas	1	South
Davidson/Richfield	1	East
Fenton City	1	South
Fenton Twp.	4	South
Forest	1	NE Corner
Gaines	2	South
Linden	1	South
Montrose	2	NW Corner
Mundy	2	South

*Does not include City of Flint. Licensed vehicles may include spares that are not staffed on a routine basis*

The Medical Control Authority recently began to collect run reports and response statistics from fire departments in order to include the MFR responses in activity and quality assurance process.

<sup>10</sup> The total of 17 includes reserve vehicles.

Recognition of the value of medical first responders and including the MFRs in quality assurance is a typical and best practice in EMS systems.

## **911 Dispatch/Communications Centers**

There are three 911 Dispatch/Communication Centers in Genesee County: the Genesee County 911 Communications Center, the City of Flint Dispatch Center and the City of Fenton Dispatch Center. The Genesee County 911 Communications Center (GC911) is organized as the Genesee County 911 Consortium, a separate legal entity jointly created by the County and the public agencies that utilize the public safety access point (PSAP) dispatch center. GC911 has countywide responsibility for receiving and dispatching emergency medical calls except for calls originating in the jurisdictions that have chosen not be part of the GC911 Consortium, namely the City of Flint and the City of Fenton.

### ***Genesee County E-911 Consortium***

The Consortium was created by the Genesee County Commission in 1997. Consortium members are all the municipalities served by GC911 along with Genesee County. The Consortium is funded through telecommunications fees and other revenues and is governed as a separate entity. Consortium members hire an executive director who hires employees and manages the center. During FY2004, Consortium expenses of “\$3,348,018 were \$1,325,294 less than the \$4,673,312 generated” in fees and other revenues. The FY2004 expenses include \$1.9 million in first year payments for an 800 MHz trunked digital radio system. The Consortium reports a considerable fund balance and appears to generate annual operating surpluses.<sup>11</sup>

During the study period, the consultants met with the GC911 Consortium Director and his staff. We conducted two site visits to observed dispatch operations. The Center appears to be tightly managed. Specific improvements can be made in the areas of quality control and collaboration with the Genesee County EMS to better support the EMS system and improve patient care.

The GC911 center handles the call intake and dispatches of approximately 24,000 medical calls a year. Dispatchers are certified in the use the APCO Emergency Medical Dispatch (EMD) system.<sup>12</sup> The EMD certifications are maintained by two supervisors who train the dispatchers. One supervisor is a licensed paramedic. The best 911 centers utilize pre-arrival instructions and

---

<sup>11</sup>Genesee County 9-1-1 Consortium Commission, Independent Auditors’ Report dated November 2, 2004.

<sup>12</sup> The American Association of Public-Safety Officials (APCO) is one of two commonly utilized emergency medical dispatch systems.

maintain certifications of their dispatchers. The Genesee County 911 Center meets this benchmark. The use of the APCO system is acceptable; however, it does not facilitate automated QI processes or oversight by the County Medical Director. Lack of external oversight creates a disconnect between the Medical Director, dispatch and field personnel. In best practice systems active supervision of EMD personnel, processes and systems is a foundational element. Optimally, the all 911 centers should seek accreditation by the National Academy of Emergency Dispatch.

Staffing at GC911 is staggered to reflect the call volume with additional call takers added during the afternoon to nighttime shift. Table 6 represents the staffing levels at Genesee County 911.

**Table 6. Genesee County 911 Dispatch Staffing Patterns**

Staffing	7 a.m. to 3 p.m.	3 p.m. to 11 p.m.	11 p.m. to 7 a.m.
Call Takers	2 to 3	3 to 4	2 to 3
Police Dispatchers	2	2	2
Fire/EMS Dispatcher	1	1	1
Supervisors	1 to 2	1 to 2	1 to 2

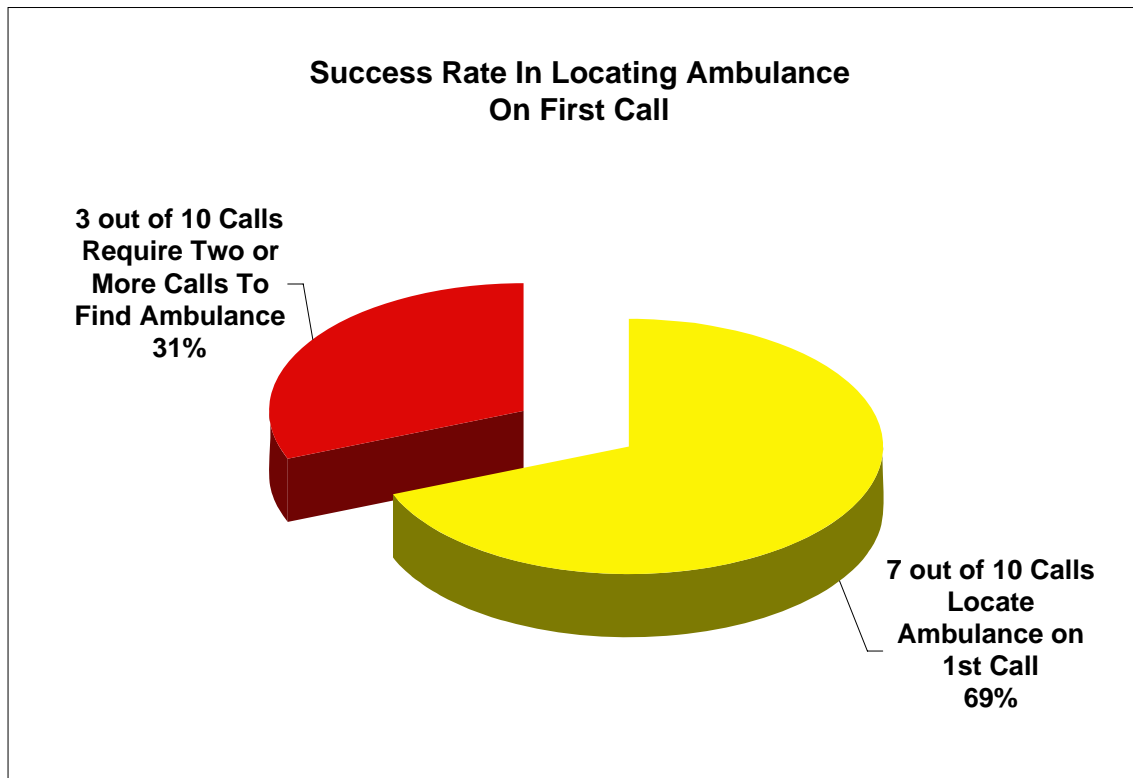
On a typical call, the Police dispatcher dispatches the Sheriff’s paramedic unit. Automatic Vehicle Locators (AVL) are installed in each Sheriff’s vehicle but the AVL system is not fully utilized for dispatch purposes. Instead, the call is put out over the radio system and the Sheriff’s units advise if they are nearest to the call.<sup>13</sup>

The EMS dispatcher locates the nearest ambulance to the call by locating the nearest ambulance base on a wall map. The ambulance may not be at the base location and the EMS Dispatcher calls the company on a standard phone line to inquire if they have a unit nearby. It is not unusual that more than one, and at times two or three calls must be made before an available ambulance is located.<sup>14</sup> Throughout the consultation we repeatedly heard that “polling ambulances was a significant issue” for the system. To validate this we requested Genesee County 911 manually review a random sample of three days data during June 2005 to understand how often multiple calls are made to ambulance providers. The data is summarized in Figure 8.

<sup>13</sup> An ALS ambulance may be the first response unit dispatched in the event the ambulance is closer to the call and is available. This determination is made between the Police and EMS dispatchers.

<sup>14</sup> Flint 911 dispatches ambulances in the same manner.

**Figure 8. First Call Success Locating Ambulance for Tier 1 Calls**



On approximately one-third of all ALS calls, the dispatcher had to make multiple calls to individual ambulance services adding a number of minutes to the time until an ambulance could be dispatched to the scene. In a previous consultant report to Genesee County, ambulance dispatching was characterized as a “trial and error” process.<sup>15</sup> This is a critical issue for the Genesee County EMS system. Simply stated, it puts lives at risk.

GC911 dispatchers appear competent and well trained. They were observed providing pre-arrival instructions in a proficient manner as patients awaited the arrival of first responders. GC911 dispatchers echoed the concerns frequently voiced by other organizations concerning the time wasted trying to locate an available ambulance and the issue of not knowing when and if the ambulance arrives on scene. Dispatchers and supervisors express frustration with the current system. While the GC911 Consortium is a solid dispatch center, there are organizational and operational issues that are of concern.

---

<sup>15</sup> August 2003. Use of Automatic Vehicle Location by Private Emergency Medical Services Agencies in Genesee County, RCC Consultants, Inc.

In a modern EMS system, the communications unit not only processes requests for service but is an integral part system oversight by providing objective data to be used by policy makers to inform future clinical and operational decisions.

GC911 does not support the EMS system in providing data for analysis. The GC911 executive director advised that they do not review CAD reports of dispatcher call processing times. The director indicated that GC911 is not staffed and he appeared to be unwilling to consider providing staff to produce data analysis for either Medical Control or EMS providers. In a fragmented system such as exists in Genesee County, 911 leaders do not view this function as part of their mandate.

By failing to routinely provide data analysis, the Genesee County 911 Center seriously hinders Genesee County EMS System development. Providers cannot cross-check their activity against the data that resides in CAD. Without CAD data, the Medical Control Authority inputs data gathered from individual provider run reports. This can best be described as expensive busywork and creates issues with data integrity.

In all EMS systems, 911 CAD data is the key component for system performance reviews. CAD system reports typically include: call processing times, response time analysis by provider, activity by provider, analysis of calls by time of day, day of week, call trend analysis and a number of other reports. The Genesee County EMS system will continue struggle to develop until GC911 becomes a highly motivated and supportive partner of the system and provides data for system review. County elected officials must take all reasonable steps to ensure that this occurs.

### ***Flint Fire 911***

Flint Fire 911 dispatches approximately 21,000 calls annually. Like GC911, Flint Fire acknowledged that they do not routinely review call processing times. In response to our request, the City 911 staff promptly provided data requested and random samples of call processing times and other items that were reviewed.

Flint 911 is staffed with dispatchers who have been trained in emergency medical dispatch practices. The City no longer pays for the recertification of the dispatchers and many certifications have lapsed. The consultants observed medical priority dispatch cards at the

dispatch center, but they did not appear to be up-to-date or routinely used by dispatchers. Staffing at Flint Fire 911 appears to be adequate for the number of calls processed.<sup>16</sup>

Flint Fire 911 dispatches the Fire Department's one ECHO unit to Tier 1 calls. The City relies on private ALS response (transport ambulances) to augment the one ECHO unit. Dispatchers also send Fire MFR units to medical calls to provide basic first aid and automatic defibrillation. We understand that recently the fire units are not being dispatched on as many medical calls due to resource and financial limitations. As Flint Fire units go on fewer calls, the private ambulances (ALS and BLS) will be dispatched on more calls within the City of Flint.

The same polling for available ambulance providers occurs with Flint Fire 911 dispatchers as with the GC911 dispatchers. Two or three of the private providers are very active in the City of Flint and this tends to reduce the impact of "calling around for an available ambulance." Yet, Flint dispatchers are as frustrated with the system as are GC911 dispatchers.

Because ambulances are not in radio contact with the 911 centers, there is no way for the dispatcher to know when or if an ambulance arrives on scene. This is a tremendous frustration for dispatchers. The situation is of particular concern when the ambulance is the only unit dispatched to a call. Without radio communication, the dispatcher must rely on the first responder, or at times, the patient to call and ask when an ambulance will arrive. The consultants heard a number of disturbing anecdotal comments about this situation.

Flint 911 provides monthly reports based on CAD data to the Fire Department. The reports are then submitted to the Medical Control Authority on behalf of the Department. Providing reports based on data directly from the 911 system is much preferable than the method used by the other service providers in the Genesee County system.

### ***Fenton 911***

The City of Fenton 911 is the third Public Safety Access Point (PSAP) in Genesee County. Emergency calls that initiate within the City limits go directly to the Fenton 911 center. Calls for medical assistance are received and then transferred directly to Regional Emergency Medical Services (REMS), a transport ambulance company that is under contract with the City to provide ALS ambulance services. The Fenton dispatcher can choose to stay on the line with the call after transfer to REMS. REMS reports that they maintain two dispatchers in their center with an all paramedic supervisory team. Dispatchers are working to complete Emergency Medical Dispatch certification. REMS reports its response times are "relatively consistent in the 8 minutes range

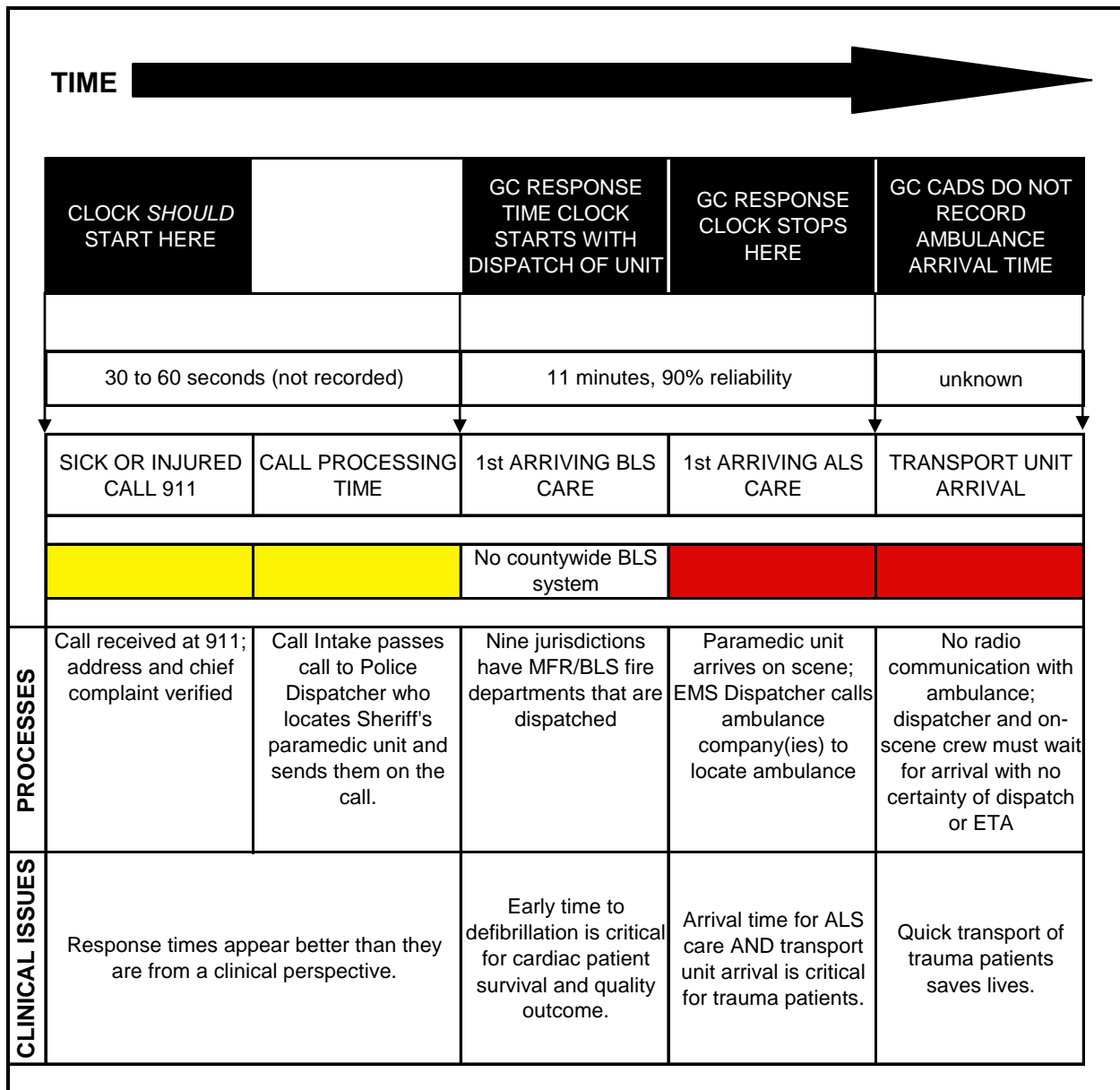
---

<sup>16</sup> Flint 911 requested that its staffing patterns remain confidential.

for ALS response”. REMS provides activity and response time reports to the Fenton Fire Chief monthly. We requested that the City of Fenton provide dispatch and response time documentation data during the project. The requested data was not provided.

There are a number of fundamental issues regarding response time reporting and definitions system-wide. Figure 9 is a graphic representation of an EMS call handled in Genesee County with issues noted.

**Figure 9. Genesee County Response Time and Dispatch Issues**



*Response times are based on Dec. 2004 MCA reports.*

The beginning of the response time clock and the close out of a call are fundamental issues for EMS in Genesee County. For response time statistics to have clinical significance, they should be documented from the perspective of the patient.

The best call centers receive and dispatch a medical call dispatch in 30 to 60 seconds. Assuming that Genesee County dispatchers meet this benchmark, the Genesee County Response Time Reports are understated. Response times must be lengthened by the time between the medical emergency alert (when the call is received by 911) and the time a first responder is on scene. Current response time data ends at the arrival time of the first advanced level responder and does not include the arrival of the transport ambulance.

Ambulances are not in radio contact with the 911 dispatcher and the arrival time of the ambulance is not called in to the center. As a result, CAD dispatch records do not reflect the arrival of the ambulance and do not properly close out a call. The 911 dispatcher has to assume that the transport unit arrives and only knows of extended arrival time if the first responder or patient calls a second or sometimes third time to request an updated arrival time.

System response time data should be based on the 911 dispatch computer data. The system, and more importantly, patients would be better served if the 911 centers provided complete dispatch records to the response agencies and MCA, practiced internal performance reviews and allowed external oversight from the Medical Control Authority.

While we have provided estimates of response times based upon the documentation available, we cannot warrant nor can we independently validate response times for this system. Failure of an EMS system to be able to report and validate response times is similar a bank not being able to balance its accounts. It is a serious system deficit.

---

## SYSTEM OVERSIGHT

---

### Medical Control Authority

Michigan Public Health Code 333, Part 209, designates a Medical Control Authority (MCA) for geographic regions across the state, “Medical control means supervising and coordinating emergency medical services” through the MCA. The primary functions of the local MCA, simply stated, are as follows:

- Appoint a system medical director
- Establish protocols (patient care standards, standing orders, policy or procedures for providing EMS)
- Provide for quality assurance through a professional standards review organization (PSRO)
- Establish “medical protocols to ensure the appropriate dispatching of a life support agency based upon medical need and the capability of the emergency medical system.”
- Oversee provider operations to ensure public health, safety and welfare exists.

The Genesee County Medical Control Authority was established in 1990 and is administered by the Genesee County hospitals and a provider-based advisory body, the Medical Control Board. The MCA is managed by an Executive Director and the MCA “members” (the three area hospitals and Genesee County) that fund one-eighth of the Director’s time, one-half of the administrator/analyst and 10 hours for a part-time clerical support person. The four MCA members are the only participants who pay MCA for medical direction and oversight. Each member will pay \$22,328 towards the FY2006 budget. The MCA budget is inadequate to perform its mandated functions. The primary expenses are the part-time salaries and benefits for staff and the system medical director contract.

The MCA has statutory authority to monitor both the emergency and non-emergency agencies and incidents in Genesee County.<sup>17</sup> The Genesee County MCA opted not to monitor non-emergency components of the system. This may be due in part to the a lack of sufficient resources. This action does not support a strong, medially driven, systemic approach to EMS and reinforces a fragmented delivery system.

The Genesee County EMS system responds to over 43,000 emergency requests per year and is currently comprised of 11 ambulance providers, two first response ALS providers, 12 medical first response agencies, and three 911 communications centers. MCA staff are knowledgeable

---

<sup>17</sup> Michigan Attorney General Opinion 7072, dated January 18, 2001.

and proactive advocates for patients and the system. Compared to others systems of this size and complexity, the system does not fund enough oversight hours.

The system medical director position is part-time and rotates periodically among emergency physicians associated with the three area hospitals. The current system medical director is Michael Jaggi, D.O., Hurley Medical Center. The consultants met with the current medical director and the other two physicians who have previously served as the system medical director. The medical directors stated that patients in Genesee County enjoy quality care from paramedics, EMTs and medical first responders. They described the system functioning as well as it can given the current organizational structure and lack of clear mandates. The physicians described multiple aspects of the system that must be addressed. They included:

- Extraordinary time spent on administrative complaints at the expense of time spent on quality of care issues.
- There can be no meaningful medical control in a system with over 43,000 emergency calls annually and the MCA staff equivalent of less than one full-time person.
- Genesee County 911 does not appear to be a partner in the system; there is a need to “fix” dispatch.
- ALS resources are not wisely used when Sheriff’s paramedics accompany paramedic staffed transport ambulances and are not required to do so.

## **Transport Provider Oversight**

MCA’s role in ambulance oversight is limited to processing applications from new providers, negotiating base locations, enforcement of base location requirements and quality assurance reviews. To provide transport services in Genesee County, an organization first makes application to the Genesee County Medical Control Authority. State law sets out the minimum requirements for personnel certifications and qualifications as well as ambulance equipment. State law requires that the ambulance operation “provide at least one ambulance available for response to requests for emergency assistance on a 24-hour-a-day, 7-day-a-week basis” and that the provider “ensure that a response is provided to each request for emergency assistance originating from within the bounds of its service area”<sup>18</sup> MCA approves the application if state requirements are met and the organization agrees to designate a base location.

In an attempt to provide coverage throughout the County, Medical Control may suggest base locations, but the ambulance provider is allowed to choose the location at their sole discretion.

---

<sup>18</sup> State of Michigan, M.C.L. 333, Part 209 Emergency Medical Services, Sec. 20921.

Base location information is provided to Genesee County 911 and Flint Fire 911 for dispatch purposes. It is important to note that in Genesee County's virtually unregulated environment, the business need to capture market share rather than a system-wide deployment model for optimal response times is the motivating factor in locating base ambulances. This is not best practice and does not reflect a system that puts the interests of the patient first.<sup>19</sup>

The ambulance provider can change base locations upon notification to the MCA and the 911 dispatch centers. Medical Control does from time to time check on the ambulance companies to enforce their commitment to maintain an ambulance at their base location. Recent enforcement efforts found that one-third of the base stations throughout the County did not have the required coverage. More recently, MCA has taken action to sanction and suspend ambulance providers for various issues.

MCA recognizes many of the system issues in Genesee County. Through protocol development, MCA has tried various measures to make system improvements, but with limited success.

## **Clinical Quality Assessment**

Medical Control maintains a schedule of quality assurance projects through the Professional Standards Review Organization. Past studies included topics such as Epi-pen usage, patient destination, ACLS Code Protocol, and a treat and release and others. Genesee County EMS providers are required to self-select 10 percent of their calls monthly for quality assurance review by the MCA Professional Standards Review Organization. Self-selection of reports for quality improvement is not consistent with best practices. It should be modified to require a more independent review process. MCA is hindered in its efforts because the 911 centers do not provide either raw data or reports that could assist quality assurance efforts.

## **Response Time Monitoring**

Ambulance companies, Flint Fire and the Sheriff's Office provide the MCA with monthly summary statistics including the number of Tier 1 and Tier 2 calls, hospital destinations and average response times both county-wide and within municipal jurisdictions. MCA reports on system activity, response time performance and quality assurance bi-annually, in March and December. Response statistics are aggregated for Flint Fire, Sheriff's Office, and ambulance

---

<sup>19</sup> It must be further noted that care provided to non-emergency patients is not monitored by the MCA. Each individual company has its own medical director, protocols, and widely varying level of medical oversight.

providers. Performance by individual provider is not reported by the MCA and is released only with the consent of the individual response agency.

Recently, Medical Control began to collect monthly reports from municipal fire departments. Expanding performance monitoring and quality assurance reporting to medical first responders is an important step to move the Genesee system towards overall quality.<sup>20</sup>

Much of the statistical work done by MCA requires that data be hand-entered for analysis. In best practices EMS systems, the 911 Communication Center provides data directly from the CAD computers to providers and medical control organizations. Data integrity is enhanced and much of the time-consuming data entry effort is avoided.

The MCA response time reports use a modified fractile reporting method. The fractile method looks at all calls and determines the response time at 90 percent reliability (reliability nine times out of ten). Below is the MCA Response Time Performance summary for December 2004 followed by the same data reflected in the 90 percent reliability method. The fractile method looks at the percentage compliance first and then notes the time. In this case, the results are similar but the 90 percent fractile sets a high standard for compliance with a high level of reliability and focuses a system to also look at the outliers (those calls that exceed standards). The fractile method of reviewing response times is always preferable and more meaningful than looking at average times.

**Figure 10. Comparison: Medical Control *Reported* Fractile Response Times<sup>21</sup>**

Call Type	Target Time	% Compliance
MCA Report: Tier 1	< 8 minutes	71.93%
MCA Report: Tier 1	< 12 minutes	93.42%
<b>Fractile Report: Tier 1</b>	<b>&lt; 11 minutes, zero seconds</b>	<b>90.94%</b>

MCA should change the way they report the actual time segments and report in terms of minutes and seconds (e.g. 9 minutes zero seconds). Otherwise, there is actually a 60 second range from 8 minute zero seconds to 8 minute 59 seconds. The 8 minutes reported is, in reality somewhere between 8 and 9 minutes. Again, this is a minor reporting change but it has major significance in response time performance.

<sup>20</sup> The March 2005 report that includes more recent performance activity and MFR statistics was not available to the consultants in time to include in this analysis.

<sup>21</sup> Reported response times do not include call processing times and should not be confused with actual system response times that can be benchmarked with other EMS systems.

Response time reports are an excellent tool. The MCA reports provide an indication of how the system is performing for the patient. However, to be most effective, response times should be produced timely, frequently and be monitored all along the 911 call continuum by each component provider (911, ALS quick response, MFR responders and ambulance providers). Most importantly, common definitions and a common clock and source of data provide the best practices.

After adding the call processing time to the overall response time, the Genesee County EMS system provides an ALS response (not necessarily transport response) to Tier 1 calls with 90 percent reliability within 12 minutes 30 seconds to 13 minutes 30 seconds.

## **911 Dispatch Oversight**

Genesee County Medical Control Authority has little formal oversight over the 911 Communication Centers. State statute authorizes the MCA to develop “medical protocols to ensure the appropriate dispatching of a life support agency based upon medical need and the capability of the emergency medical services system.”<sup>22</sup> Within the broad intent of the statute the MCA could exert significantly more authority over routine QI processes as part of the protocol development process.

MCA provides input to the Consortium as a member of the Genesee County Consortium Advisory Board. The Advisory Board is made up of the MCA Director, five police chiefs, five fire chiefs, the Consortium Executive Director and Chair. MCA input should be at the policy level and the MCA Director should have the ability to bring matters directly to the Executive Board rather than going through the Advisory Board. In best practice EMS systems, the communications centers and medical oversight work as partners to better the system rather than narrowly defining and defending turf issues.

---

<sup>22</sup> State of Michigan. M.C.L. 333, Part 209, Emergency Medical Services, Sec. 20919.

## County Regulatory Authority

Michigan State law is clear in defining the authority of local government units (counties and municipal jurisdictions) regarding ambulance operations:

*A local governmental unit may enact an ordinance regulating ambulance operations, non-transport prehospital life support operations, or medical first response services.*<sup>23</sup>

Genesee County has the legal authority to regulate the ambulance services and the EMS system but has never asserted that authority. The Genesee County EMS system, like EMS in other communities has evolved to include a collection of public safety organizations and private and not-for-profit ambulance providers. By not fully asserting its legal authority and regulation over the system, Genesee County has left those who depend on EMS without a safety net. Private ambulance services appear to give reasonable care, but ultimately, market forces rule the number of services and their commitment to the community.

There is no contractual relationship between the County and the individual ambulance services to communicate service expectations, ensure service availability, or enforce performance expectations. Service regulations and/or contractual service specifications should be developed as part of the regulatory framework utilized by the County. The Health Officer, or other County official should have the responsibility to oversee the development and application of these standards.

In summary, the County has not asserted its rightful authority over ambulance services to ensure the health and welfare of citizens and residents. There is a void of leadership, organization and EMS development in Genesee County that needs to be addressed.

---

<sup>23</sup> Michigan State Law. M.C.L 333.20948. Emergency Medical Services, Section 3.

---

## EMS MILLAGE AND FINANCIAL REVIEW

---

### EMS Millage History

In order to secure consistent funding for the paramedic programs, the City of Flint and Genesee County populace voted in August 1981 to impose a special purpose property tax based millage for the tax years 1981 to 1985. The ballot language was as follows:

*“ . . . for the purpose of supporting Emergency Medical Services, in the City of Flint and the rest of Genesee County, through the Genesee County Health Department . . . ”*<sup>24</sup>

Voters renewed the millage for five-year increments in 1985 and 1990. In 1996, voters approved funding for 10 years through 2006. In each instance, the EMS millage vote was on two separate ballots: 1) the City of Flint jurisdiction, and 2) remaining Genesee County jurisdictional boundaries.

Soon after the first EMS millage ballot was approved, the County Health Director requested a plan for “Advanced Emergency Medical Services” from the City of Flint. By 1983, the County and the City approved a Paramedic Program Contract and Mutual Aid Agreement retroactive to January 1982. The City of Flint is described in the Paramedic Program Contract as an independent contractor to the County and the Contract spelled out various requirements for financial and activity reporting to the County.

In July 1982, the County Health Director and County Sheriff executed a Memorandum of Understanding (MOU) to provide advanced life support services. Both the Sheriff’s MOU and the Flint Contract speak to the provision of advanced and/or paramedic emergency medical services.

In subsequent years, the MOU between the Sheriff and the County Health Director was more detailed in the description of responsibilities and services to be provided. The MOU signed on September 22, 1989 includes a section regarding subcontracting that again characterizes the City of Flint as an independent provider of services via contract:

---

<sup>24</sup> EMS Ballot Language, August 4, 1981.

#### *XIV. SUBCONTRACTING OR ASSIGNMENT*

*It is understood that an agreement shall be negotiated and signed with the City of Flint to provide Advanced Life Support services within and outside the City and that all terms and conditions of this Agreement shall receive precedence over those in the Subcontract.<sup>25</sup>*

On October 9, 1990, the Genesee County Commission adopted Resolution 90-589 and thereby agreed:

*. . . to memorialize the aforesaid implied agreement and to renew the terms of the aforesaid written contract, through December 31, 1991, or through the last day of the calendar year following the final year in which any additional renewal of Emergency Medical Services millage is authorized to be collected, whichever is later.*

The language above indicates that the MOUs, Agreements and Contracts regarding EMS services remain in effect until 2006, which is the end of the current millage renewal. The documents consistently describe paramedic and advanced EMS services. Based on the document review, it appears that *the intent of the EMS millage is to fund paramedic level services* in the City of Flint and Genesee County and not to fund basic level services. The City, by eliminating the paramedic response (other than the single ECHO unit), in effect, has breached the intent of the agreements and the millage assessment intent.

In 2004, the City calculated the cost of providing emergency medical services and the City provided this calculation to the consultants. The City approached the calculation with the underlying theory that fire units and the ECHO unit respond to every medical call and that the cost of the medical first responders should be part of the EMS services calculation.

Medical first response costs are typically part of the overall cost to provide public safety services. However, the issue for Genesee County and the City is to clarify the intent of the EMS millage. Was the intent to fund paramedic/advanced level EMS services or to fund other components of the EMS services? There will likely be two answers: one from the legal perspective and the other reflecting community expectations.

---

<sup>25</sup>Agreement between the Genesee County Health Department and the Genesee County Sheriff Department for Provision of Emergency Medical Services, executed 9/22/89.

## Financial Analysis and Use of Funds

One objective of this study is to determine whether or not the EMS Millage funds are being used appropriately by the City of Flint and Genesee County to support the intended EMS services. There is a stated difference in how each entity interprets the intended use of the EMS millage. We reviewed financial reports, revenues and expenditures provided by the County Controller's Office and the City Finance Department. The difference in philosophy about the EMS millage intent is reflected in the financial data provided to the consultants.

### ***Genesee County Sheriff's Office***

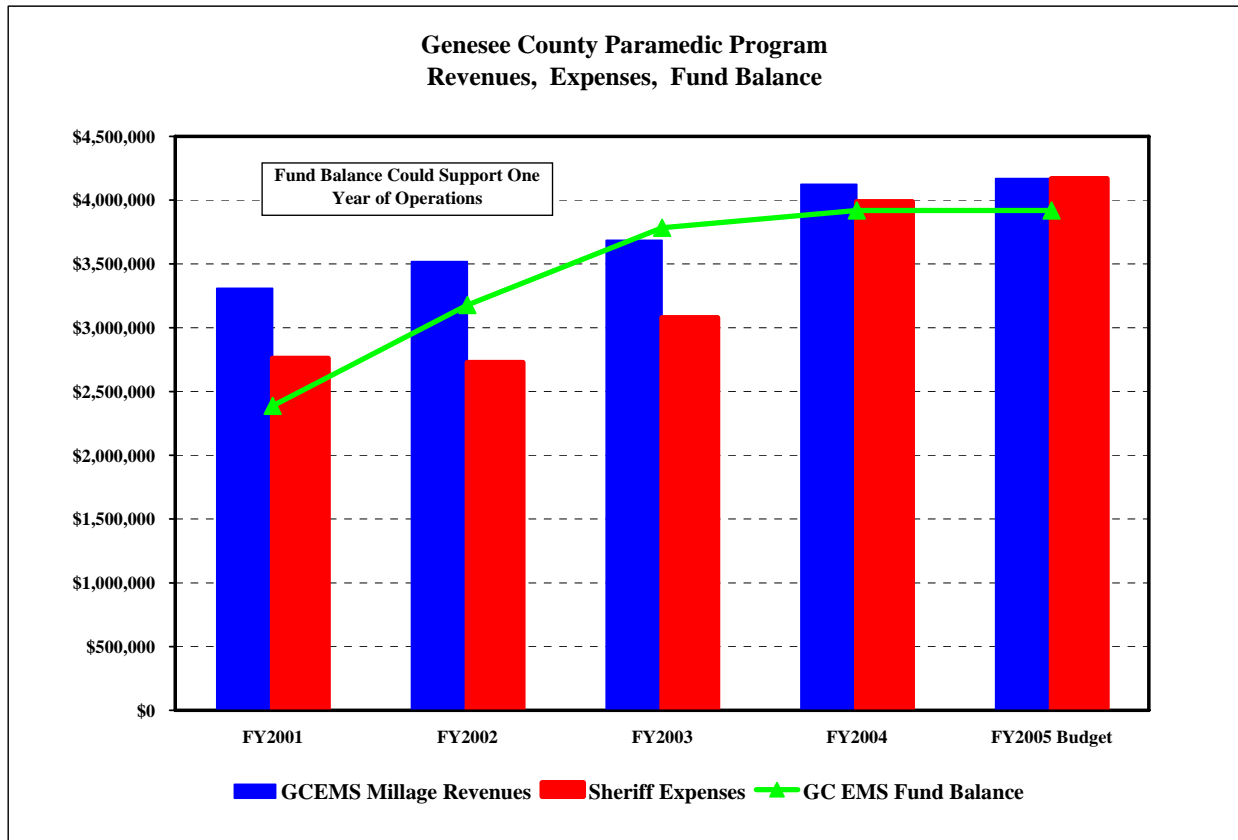
The Genesee County Controller's Office provided complete and detailed financial statements for the "Paramedic Program" which is accounted for in a special revenue fund of the County. This type of accounting reflects the philosophy that the EMS millage is intended to support the paramedic program and that funds are to be segregated from other revenues of the County.

A special revenue fund acts like a checking account in that millage revenues are deposited, costs are expended and if there is a remaining balance after expenses, the balance remains in the account at year-end as the fund balance. In the initial year of this review (FY2001), there was a beginning year fund balance of \$1.8 million that represents the accumulated balances from year to year since the EMS millage was first collected. The County was thoughtful in preserving this fund balance. The paramedic program is an essential service that affects the health and welfare of citizens and visitors. The County planned for a transition fund in the event the EMS millage is not renewed. The County's goal is to have a fund balance that could fund paramedic operations for approximately 12 months.

On an annual basis, the surplus of revenues less expenses has diminished since CY2002. This reflects the costs associated with the addition of three paramedic units during that time. As of September 30, 2004, the fund balance in the Paramedic Program Special Revenue Fund was \$3.9 million. The annual expenditure budget for FY2005 is \$4.1 million, which means that the County is close to the goal of having a one year transition expenditure cushion.

Figure 11 is a graphic representation of the relationship between revenues, expenses and fund balance for the County's Paramedic Program.

**Figure 11. Revenues, Expenses and Fund Balance of Genesee County Paramedic Program**



The consultants reviewed the line item expenditures for the Paramedic Program for the period from FY2001 through the Budget and expenditures to date for FY2005. Detailed salaries, benefits and staffing documents were provided by the County and also reviewed.

The Genesee County Paramedic Program budget appears to reflect all costs associated with operations including personnel, benefits, overtime, vehicle operating costs, training, and capital expenditures. Attachment B is the line item budget for the Paramedic Program from FY2001 through the budget for FY2005.

Personnel who are charged to the program are only those personnel directly associated with the operations of the Program. There is no overhead cost applied for typical items such as management oversight and other government services.<sup>26</sup> This is typical in governmental reporting for operating budgets. The Program budget for FY2005 includes budgeted line items

<sup>26</sup> Overhead examples are the Sheriff and Under Sheriff, Human Resources, Controller’s Office, Purchasing Services, and other insurance costs.

totaling \$68,524 for the type of County overhead expenses previously mentioned (Controller Services, Purchasing Services and Insurance). Overhead allocations for these items were not charged in the years from FY2001 through FY2004 and to do so in FY2005 would be a change in policy. The County does incur administrative costs to manage the Paramedic Program and these costs are legitimate costs of doing business. It is appropriate to charge the Program. Future year-to-year comparisons will need to take the change into account.

The Paramedic Program fund was charged for items that could be argued are not specific to the program. These include the cost of Sheriff’s deputies when they are appearing in court and false arrest insurance. The fund was also expensed for two tax settlement issues (the consultant has no opinion on these expenses as they are likely the result of legal issues). Table 7 summarizes the identified expenses.

**Table 7. Expenses Identified in Sheriff's Office Paramedic Program Budget**

<b>Item</b>	<b>FY01 Actual</b>	<b>FY02 Actual</b>	<b>FY03 Actual</b>	<b>FY04 Actual</b>
Court Time	\$17,039	\$12,226	\$21,338	\$27,324
Insurance: False Arrest	\$20,845	\$20,844	\$41,516	\$32,292
GM Tax Settlement	\$11,869	\$7,528	\$7,528	\$7,528
Total	\$49,753	\$40,598	\$70,382	\$67,144

Court time and false arrest insurance are expenses that are associated with the law enforcement activities of the Sheriff’s Office paramedics. It can be argued these costs are appropriate for cross-trained like personnel in much the same way that firefighter training and other strictly related fire expenses are appropriate. The questioned amounts are not material compared to the overall annual expenses. However, the County should consider allocating these costs directly to law enforcement budgets.

For a portion of their on duty shifts, Sheriff Paramedics are engaged in direct law enforcement activities. This time is not internally accounted or allocated separately as they remain available for their primary EMS mission for all but about ten percent of the total available work hours.<sup>27</sup>

---

<sup>27</sup> Based upon information provided by Sheriff’s Office at interview and as validated during the consultant field observations. Routine patrol activities were not included in the allocation as they are similar to redeployment practices used by other EMS systems. For high level comparative purposes in subsequent sections of the report a 10% adjustment for dedicated law enforcement activities was utilized.

### ***Flint Fire Department***

The City of Flint Finance Director provided revenue and expenditures information for five fiscal years. Table 8 below indicates the revenues for the period from FY2001 through FY2005 (ended June 30, 2005).

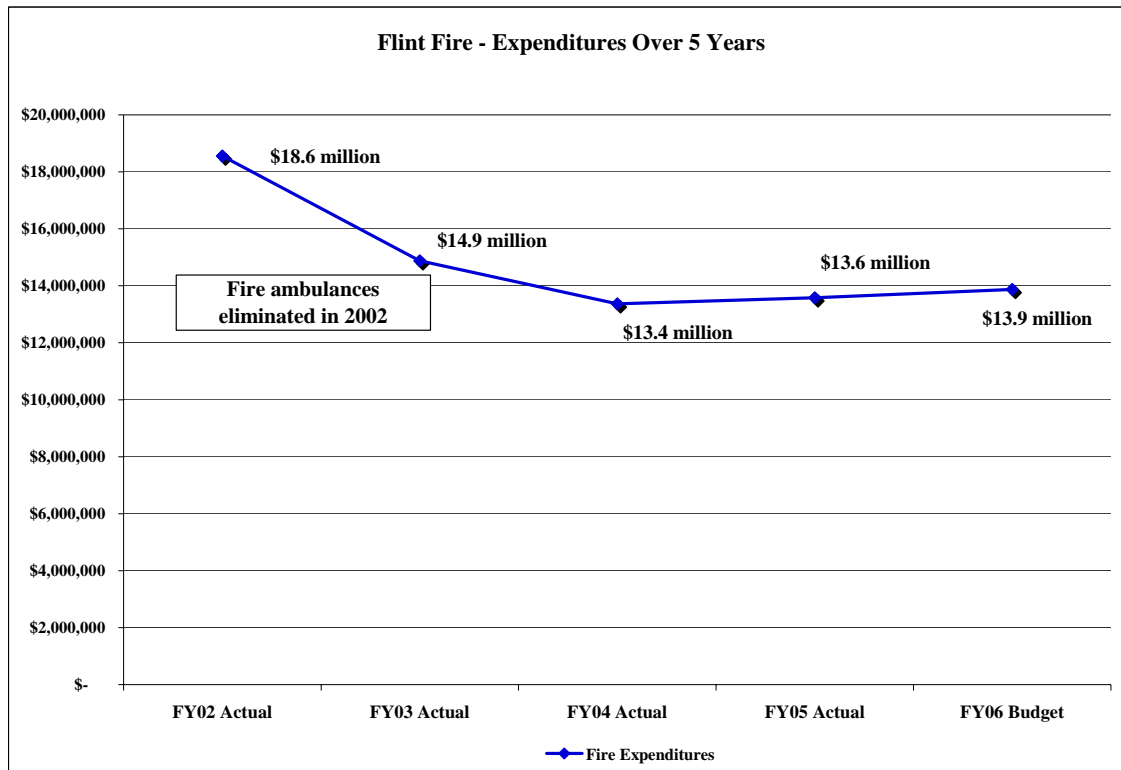
**Table 8. City of Flint EMS Millage Revenues**

<b>Fiscal Year (June-July)</b>	<b>Revenue</b>
2001	\$722,345
2002	\$715,036
2003	\$730,593
2004	\$736,012
2005	\$768,955

EMS millage revenues are reported as property taxes and are held in the general fund. There is no segregated accounting of the paramedic program revenues versus expenditures. The Flint Fire line item budgets include the cost of all fire operations and management as well as the cost to staff and operate Flint Fire 911. There is no separate accounting of the cost of the paramedic ECHO unit and/or emergency medical services.

In April of 2002, the City eliminated the last two of its ALS transport vehicles but continues to operate one quick response ECHO paramedic unit. The reduction in services is reflected in the annual department budgets over five years from FY2001 to the current budget for FY2006 (July 1, 2005 to June 30, 2006) as depicted in Figure 12.

**Figure 12. Flint Fire Expenditures**



In FY2004, the City estimated the cost of emergency medical services in the Flint Fire Department. The estimate did not include operating costs but focused on personnel costs, which are typically 80 to 90 percent of fire department operations.<sup>28</sup> The estimate is based on FY2004 costs, which the consultants verified against expenditures reports provided by the City Finance Director.

Flint Fire’s FY2004 average cost per firefighter including benefits is \$85,417 or \$32.60 per hour based on 2,620 annual hours worked per year.<sup>29</sup> The Flint ECHO unit operates 24 hours a day, 7 days a week or 8,760 hours a year. Using \$32.60 per hour for staffing costs and adding a factor for mileage we obtain a conservative cost of operating the ECHO paramedic unit of \$294,468.<sup>30</sup> This amount does not include the typical supervisory and operating costs, but serves as a conservative estimate of the direct costs of paramedic services provided by Flint Fire.

The City of Flint received \$736,012 for EMS millage revenues in FY2004. The direct costs of paramedic services were approximately \$300,000. Even if a 20 percent factor is added for

<sup>28</sup> The only non-personnel cost included was \$12,500 for medical supplies.  
<sup>29</sup> Based on 115 firefighters in suppression; today there are a total of 111 firefighters in the Department.  
<sup>30</sup> \$32.60 x 8,760 hours = \$285,576. A mileage factor was added based on miles/run for 5,700 unit runs/year.

indirect costs and overhead, it is clear that the revenues exceed the expenditures for paramedic services in FY2004. The same argument can be made for the period since April 2002 when Flint Fire eliminated its ALS transport ambulances and operated on ECHO paramedic unit: EMS millage revenues exceeded the direct cost of ALS services.

The City makes the argument that the EMS millage is used to support both medical first response and advanced level services. Until recently, a Flint Fire engine responded on Tier 1 calls with the ECHO unit. In the 2004 EMS cost estimate, the City, using the same hourly cost basis of \$32.60/hour, included the personnel cost of one fire engine (4 firefighters) on each Tier 1 call. The estimate was based on 5,700 Tier 1 unit responses (the actual for the previous calendar year) and used one hour per call scene time. Again, this is a conservative allocation method of direct costs applied to actual hours worked on calls. When extrapolated, the direct cost of ECHO paramedic response and the fire engine responses total \$743,280. EMS millage revenues for FY2004 were \$736,012. In this case, the cost of providing one ECHO paramedic unit and one fire engine response on Tier 1 calls approximated EMS millage revenues.

The Fire Department carries the argument further and includes in its estimate an allocation of “ready time” for all suppression personnel. The argument is made to indicate that the costs of providing the paramedic and medical first response service are far and away more than the EMS millage revenues.

Flint Fire has reduced the level of paramedic service from four ALS transport units to two and finally to no ALS transport units. Exactly how active medical first responders have been during this time and how much private ambulance companies have stepped in to fill the gap for ALS first response is unknown and would require a detailed study of dispatch records and activity reports.<sup>31</sup> We know that the Sheriff’s Office paramedics are dispatched into the City approximately 30 times a month.<sup>32</sup> Unfortunately, historical records cannot be retrieved from the Flint Fire CAD system. The more important questions are: What fire units are regularly dispatched on Tier 1 calls and Tier 2 calls? How frequently is the private sector stepping in to fill the gap? Is the intent of the EMS millage to cover only paramedic services or emergency medical services including medical first response?

---

<sup>31</sup> We were advised during site visits that Flint fire engine dispatches to medical calls would be limited in the future.

<sup>32</sup> Based on a random review of three months of dispatch records reviewed at Flint Fire 911

## EMS Millage Inequity

Rapid medical first response is the foundation of an EMS system and has clinical significance particularly for cardiac arrest and trauma patients. In preparing EMS cost summaries, the City of Flint assumes that the EMS millage should be allocated to offset the cost of medical first response in addition to the cost of the paramedic unit.

If the County accepts the assumption that the EMS millage is intended to support the paramedic program as well as medical first response, then an inequity among providers has occurred. Eleven area fire departments provide medical first response services in the County and nine routinely respond to Tier 1 calls. Allowing the EMS millage to be allocated to the Flint MFR effort and not recognizing the MFR efforts of area fire departments is not equitable.

Using EMS millage funds to support basic level services is appropriate if the methodology is equitable. Consideration should be given to funding MFR response based on a formula that is population and response based. As a condition of receiving EMS millage funds, agreements could be structured between fire departments and the County to address response availability, response time performance, reporting requirements, interoperable communications, and oversight. In sharing EMS millage funds, fire departments will become true partners in the Genesee County EMS system. Patients will benefit from a more integrated system.

---

## THE OPTIMAL EMS SYSTEM

---

An EMS system is not defined by its component parts. Dispatching, emergency response and transport are merely individual activities that are part of a much bigger picture. A system is defined as “A group of interacting, interrelated, or interdependent elements forming a complex whole.”<sup>33</sup> Many components function cooperatively and are connected in order to deliver out-of-hospital medical care and transportation to the public. This coalescing of functional components into an overall system defines its effectiveness.

An optimal EMS system is best designed from the patient’s perspective. Patients should expect to be provided with adequate information regarding injury prevention as well as symptom recognition. The EMS system should provide a rapid and appropriate response when a caller dials 911. Medical first responders should be able to deliver rapid defibrillation arriving within four to six minutes from receipt of the 911 call.

The arrival of paramedic level care and a transport capable ambulance should occur within eight minutes and 59 seconds of call receipt on life-threatening emergencies in urban areas, 11 minutes and 59 seconds in suburban areas and 19 minutes 59 seconds in rural areas. Response times should be met with 90% reliability (nine times out of ten) and should be monitored based on minutes and seconds. Patients should be transported to a hospital that can treat their specific condition. The EMS system beginning with 911 call receipt through patient transport should be externally and independently monitored with participants held accountable for their responsibilities. Finally, the system should deliver good value for the resources invested.

There is no single source for industry standards of practice. State EMS regulations reflect minimum performance requirements. Other commonly accepted “standards” are drawn from a variety of sources including “10 EMS Standards” currently used by the US Department of Transportation to evaluate state EMS systems, the “Community Guide to Ensure High Performance Emergency Ambulance Service” published by the American Ambulance Association and the standards developed by the Commission on the Accreditation of Ambulance Services.

EMS benchmarks can be organized in eight component categories as follows in Table 9.

---

<sup>33</sup> *The American Heritage College Dictionary*, Third Edition, 1993.

**Table 9. EMS Benchmark Categories**

911/Communications	Customer and Community Accountability
Medical First Response	Prevention and Community Education
Medical Transportation	Organizational Structure and Leadership
Medical Accountability	Ensuring Optimal System Value

In all, there are 50 individual benchmarks within the categories above. Of the 50 benchmarks, 19 could be rated as achieved by the Genesee County EMS system. The same number (19 benchmarks) had partial achievement and in 12 areas, significant improvement is warranted. Overall, the Genesee County EMS system does not benchmark well against optimal EMS systems. The summary of these 50 benchmarks can be found at Attachment C.

The 50 benchmarks are a litmus test of the system’s accountability and achievement of patient focused EMS. Two benchmarks stand out as different yet common measures of system performance for the patient and the community: response time performance and system cost and value for money. Genesee County’s response times do not fall within the optimal system and Genesee County system costs are relatively high.

### ***Response Times***

The recurring theme in the benchmark evaluation is that the data to conduct analysis of provider and system performance is not readily available. Medical Control currently analyzes response times based on data from the month of March and the month of December of each year. Notwithstanding the limited nature of the data review, the studies are an indicator of system performance.

The MCA response time studies report that the Genesee County EMS system delivered paramedic level care to patients in life-threatening condition (Tier 1 calls) within 12 minutes 59 seconds with 90 percent reliability. Sixty seconds have been added to the response time to account for call processing time and the time is reported in terms of 90 percent compliance. The 12 minute response time reflects improvement by one minute beginning in March 2004, which is most likely due to the addition of Sheriff’s Office paramedic units.

The March 2005 MCA study included for the first time, response time statistics for medical first responders. Fire departments in ten jurisdictions are the medical first responders; response times are reported for those jurisdictions as average response times to Tier 1 and Tier 2 calls. The response times ranged from 6 minutes to just under 10 minutes and do not include call

processing times. An average response time is a 50 percent reliability factor. In those cities and townships that have MFR response, patients receive initial care and defibrillation capability prior to paramedic arriving on the scene. Inclusion of medical first responders in response time studies adds to system accountability and should be continued.

### ***System Costs***

In Genesee County there are four primary system costs borne by patients and the community:

- The EMS millage levy (funds Sheriff’s Paramedics and subsidizes Flint Fire)
- Property taxes and other levies to support Flint Fire (including Fire 911 and area fire departments)
- Fees to support the Genesee County 911
- Transport fees billed by ambulance companies to insurance companies and patients.

We constructed a conservative estimate of the system cost as using the readily identifiable revenues and costs. These system cost estimates are outlined at Table 10.

**Table 10 Total System Costs**

Flint Fire Cost of EMS <sup>34</sup>	\$2,171,160
Genesee County 911 EMS Allocation <sup>35</sup>	\$514,063
GC Sheriff Annual Budget (FY2005) <sup>36</sup>	\$3,752,394
Transport Fees Paid by Patients and Insurance <sup>37</sup>	\$10,641,895
<b>Total</b>	<b>\$17,079,512</b>

Fees for ambulance transport services are paid directly by patients and on their behalf by private insurance and governmental insurance (Medicaid and Medicare). In most EMS systems, fees for transport service support the non-emergency providers without community subsidy. Genesee

---

<sup>34</sup> In CY2004, Flint Fire attributed the total cost of EMS including its paramedic Echo unit, engine company BLS response and an allocation for ready-to-serve time to be \$2,171,160. This was a conservative estimate that focused primarily on personnel costs.

<sup>35</sup> Eleven percent of GC911 calls/dispatches are EMS related. Sheriff’s paramedics and/or ambulance related. Amount is based on 11% of \$4,673,302.

<sup>36</sup> Sheriff’s Office FY2005 budget is reduced by 10% as a broad estimate of law enforcement efforts by officer/paramedics.

<sup>37</sup> Based on review of reported average charges, Medicare allowables and other area indicators, the average patient transport charges in Genesee County are likely to approximate \$525 for ALS transports and \$415 for BLS transports plus a mileage component of \$7 per mile. There were 22,818 emergency ALS transports and 18,692 emergency BLS transports in CY2004. By applying the likely transport fee, four miles per transport and an urban/suburban collection rate for emergency transports (47 percent), the system revenues to ambulance providers is estimated at \$10,641,895

County ambulance providers are not subsidized by the community. The cost of service is fully supported by emergency and non-emergency transport fees. The cost to patients is real and is a component in the overall system cost.

This is a very conservative estimate of system costs but one that can be used to evaluate system value for money. The Genesee County EMS system provided 41,510 transports in CY2004. Based on the identified system costs above, the cost per transport is \$411.45 per transport. The per capital cost is \$38.19.

Table 11 below compares the Genesee County’s conservative cost estimates with the actual costs of high performance, best practice EMS systems. The best practice systems perform significantly better with regard to response times, guarantee performance for the communities they serve and are less expensive than the current system.

**Table 11. Genesee County Costs and Performances Compared**

Measure	Genesee County	Best Practice High Performance EMS <sup>38</sup>
Cost Per Transport	\$411.456	\$351.59
Cost Per Capita	\$38.19	\$27.74
Response Time Standard	12:59 at 90% estimated	8:59 @ 90% required
Performance Guarantee and Penalty for Non-Compliance	None	\$10/minute to \$250 maximum per transport

Value in terms of performance for the patient is missing in the Genesee County EMS system. The actions and options in the next section offer ways that Genesee County system can reach its potential to serve patients well for good value.

---

<sup>38</sup> Total mean measures for PUM and Modified PUM; Public Utility Model Study, 2004. These systems represent a mixture of public, private and hospital employers and are considered among some of the most clinically sophisticated EMS systems in North America.

---

## IMMEDIATE ACTIONS FOR SYSTEM ACCOUNTABILITY

---

The foundation for change and improvement for Genesee County EMS is accountability. Basic building blocks must be in place before technology solutions such as Automatic Vehicle Locators (AVL) can add value.<sup>39</sup>

During the financial, operational and clinical review of the Genesee County EMS system, a number of critical issues were identified for immediate attention. The recommendations are likely to affect all Genesee County EMS providers, but are important to safeguard the welfare of Genesee County patients. The recommendations will not “fix” the Genesee County system. County officials and EMS partners should move forward to address the immediate issues while options for the system’s future are being considered.

***Immediate Action Recommendation #1:***

**Require radio contact between ambulances and 911 dispatchers.**

As a condition of doing business in Genesee County, ambulances should be required to install radio communications that interface with GC911 and Flint Fire 911.<sup>40</sup> Radio communication with 911 is a standard in the U.S. for responders answering emergency medical calls. A number of financial arrangements can be made with the private providers including a purchase/leaseback arrangement.

Rationale –

Not having direct radio communication between the 911 dispatcher and the ambulance creates a number of issues. Without direct radio contact with ambulances, dispatchers have to assume that the ambulance arrives on the scene. This is a critical situation particularly on calls to outlying areas or at peak demand times when the Sheriff’s units are busy and the ambulance may be the first or the only responding unit. Patients and/or paramedics on scene frequently call back to 911 to ask about ambulance arrival. The

---

<sup>39</sup>There have been recent proposals to require Automatic Vehicle Locator (AVL) devices on ambulances to assist in the dispatch process. AVL is an excellent tool and should be considered once system changes outlined in the various options are implemented. Adding technology to an unorganized system will not solve system issues.

<sup>40</sup>The June 2001 amendment to the GC911 Consortium Agreement includes a provision to allow the use of Operational Charge funds to acquire radio equipment with certain conditions. This may be a funding source to create interoperability.

dispatcher must make multiple calls to the ambulance company. The first-on-scene crew may want to relay critical information about the scene and patients to the ambulance. The scene crew has to communicate by radio with the 911 dispatcher, who then calls the company dispatcher, who then relays information to the ambulance crew. Time is wasted and the potential for errors is compounded. Additional issues occur since CAD records do not reflect ambulance arrival times due to no direct communication between the ambulance and 911. Ambulance personnel record their scene arrival time on their run reports according to their company's dispatch clock, which is not calibrated with the 911 clock.

***Immediate Action Recommendation #2:***

**Redefine response times to start with medical call receipt and end with arrival of transport unit and express response times as minutes and seconds.**

Capture all call component times in minutes and seconds.

Rationale-

Genesee County response times, at the least, are 30 seconds to one minute longer than reported. Response time reporting should be patient focused and begin when the call for help is received by 911. Response time components (call processing time, out-of-chute time, dispatch to arrival time for MFRs, quick response paramedics, and transport ambulances, on-scene time, and hospital arrival time) should all be captured in the CAD call history. Whole minute increments do not accurately measure response times. A 10-minute response could actually be 10 minutes zero seconds or 10 minutes 59 seconds. Whole minute increments are not descriptive enough for a clinical standards review.

***Immediate Action Recommendation #3:***

**Gain agreement from Genesee County 911 to provide raw data and monthly reports to MCA and providers based on CAD data.**

EMS call data information should be available to the MCA in an agreed electronic format on an interactive basis as required. Reports should be available in an electronic format to providers within 5 business days of month end.

Rationale-

The 911 communications center is a vital link between the patient and emergency responders and holds the key data elements for each call. In most every EMS system, 911 is a vital partner working collaboratively with providers and oversight agencies to solve system issues. The Medical Control Authority, GC911 and system providers should agree on standardized reports to be extracted from CAD data. Medical Control should have extraordinary access to CAD data for research and analysis purposes.<sup>41</sup> Genesee County 911 Consortium has sufficient funding resources. The Consortium and its members should designate reporting needs as a priority. Striving to improve the Genesee County EMS system without data tools is a futile and wasted effort.

Table 12 summarizes the recommendations for immediate action and impacts.

**Table 12 Recommendations and Impacts**

Action #	Description	Implementation Impact
1	Radio communication with GC911	Equipment purchases; evaluate additional dispatcher time needs
2	Redefine response times	Possible CAD programming costs; additional dispatcher input time
3	GC911 to provide data for continual analysis	CAD programming costs

---

<sup>41</sup> A number of findings based on the limited data available require further study. Call processing time reviews, increased numbers of ALS transports, increased numbers of calls, increased numbers of paramedic ride alongs, tracking trends in ambulances as the first unit on scene are examples of studies that require data analysis.

---

## OPTIONS FOR THE FUTURE

---

There are three central questions to be answered to explore future system options for Genesee County. The questions are:

- What level of first response and ambulance service should be provided?
- By what method or mechanism should the service be provided?
- By what methods could the service be equitably funded for the future?

### Service Levels

Providing first response to critical life-threatening requests for service with rescue personnel, including at least one EMT and basic medical equipment (AED, bag valve mask/oxygen equipment for airway maintenance, and supplies that stop bleeding) is the minimum standard of care for communities of Genesee County's size.<sup>42</sup>

The Genesee County system has focused on providing first response delivered by single paramedic quick response vehicles. Basic life support (BLS) or medical first response (MFR) level care has not been a priority in the system. Area fire departments range in the EMS capability from highly integrated medical first responders in the City of Flint to fire departments that provide limited medical first response and are not integrated in the system.

In contrast, clinical studies published in peer reviewed medical journals present clear and convincing medical evidence that the best opportunity to improve cardiac arrest survival rates is to enhance MFR capabilities to provide airway management and early defibrillation.<sup>43</sup>

Acknowledging, funding and integrating medical first response agencies into the system and analyzing their response capabilities would allow for more efficient deployment plans particularly in outlying, low call volume areas. Part of the integration process is to set response time standards for medical first responders and to consider different response time standards for more densely populated (urban) versus less densely populated (rural) areas.

---

<sup>42</sup> Based on the most recent 200 City Survey for the Journal of Emergency Medical Services conducted by Fitch & Associates, half of the top 200 cities provides BLS first response.

<sup>43</sup> Ontario Prehospital Advance Life Support Study, Journal of the American Medical Association (281):1175-1181. and February 2005 Final report [http://www.chsrf.ca/final\\_research/ogc/pdf/stiell\\_e.pdf](http://www.chsrf.ca/final_research/ogc/pdf/stiell_e.pdf) accessed September 29, 2005.

Advanced life support service, including ambulances staffed with at least one paramedic and one EMT-basic that responds within defined response time parameters with 90% reliability is the appropriate standard of care. A key finding of the system review is that there is little reliability in the base staffing plan currently utilized by Genesee County.<sup>44</sup> A second key finding is that the arrival time of ALS care whether from Flint’s ECHO unit, County Sheriff’s paramedic deputies, or ALS ambulances does not fall within the suggested response time standards of 8 minutes 59 seconds with 90 percent reliability. There appears to be enough ALS unit hours in the system, but they are not deployed to maximize their efficiency. A careful look at the clinical significance of the Sheriff’s Office paramedics riding along with patients transported to the hospital is warranted. The system Medical Director should to address continuity of care issues to identify over-utilization or mis-utilization of ALS resources.

## **Delivery Mechanisms**

To answer the second question regarding what mechanism EMS could be provided, various service configurations and governance options were considered. All options presume that the immediate actions recommended are implemented prior to consideration of an option.

There were three specific models considered:

- Integrate medical first response services.
- Coordinate and regulate the EMS system
- Contract for a single ALS first response and transport provider.

### ***Option 1. Integrate Medical First Response Services***

This option is essentially status quo for providers groups. This approach allows “free-for-all” competition within the market place to continue but with baseline response time commitments and agreements required. Response time standards would be developed for specific areas in the County and possibly for each jurisdiction that has medical first responders. Setting the standards should be a collaborative effort between the Medical Control Authority and Genesee County Commission and the community.

Ambulance services and MFR agencies would be required to enter into a contract with the County in order to provide services for any area in which they are designated. The purpose of

---

<sup>44</sup> During a recent enforcement effort, one-third of ambulance bases were not staffed with an ambulance ready for emergency response as is required in the agreement between MCA and ambulance providers.

the contract is to delineate performance requirements and determine how EMS millage funds would be shared among first responder agencies.

1. Ambulance transport providers would be required to establish direct radio communications Genesee County 911 and Flint Fire 911. The contract will stipulate reliability requirements (availability for a call) and strict response time standards and penalties. Financial letters of credit or other appropriate measures will be required to provide financial safeguards to the system.
2. Medical first responder agencies (fire departments) would enter into a memorandum of understanding (MOU) with the County in order to receive an allocation of EMS millage funds. The MOU would stipulate the allocation formula to share funds based on service area population and documented 911 dispatched EMS responses. Other performance based requirements would be stipulated in the MOU.

Call processing standards county-wide are to be developed and the liability issue of Fenton City (Fenton does not dispatch the closest available unit) should be addressed. The goal of sharing the EMS millage is to recognize and encourage medical first responder groups to become reliable partners in the response system. Another goal is to share EMS millage funds with the Medical Control Authority to encourage timely and thorough studies of the Genesee County system.

The County clearly has the legal authority to regulate the system and enter into contracts for services with providers. Attachment D is the review of the law conducted by the consultants. It is for information only and not to be relied upon without advice of Counsel.

Leadership and coordination are needed. Surplus millage funds will be used to fund the Medical Control Authority. The Sheriff's Office surplus should be reduced to an amount needed to operate for six months which is an acceptable financial cushion.

### ***Option 2. Coordinate and Regulate the EMS System***

This option requires that the Commission establish an ordinance to regulate the EMS system. Sheriff's paramedics and the Flint ECHO unit would continue as paramedic first responders. Integration of the system and having a limited number of partners should allow the system to improve with better accountability and performance. This option replaces unbridled emergency transport competition *in* the marketplace with competition *for* the marketplace. In this approach,

two or three zones would be designated for exclusive award to private ambulance companies.<sup>45</sup> The award of a zone would include the rights to provide emergency care and non-emergency transport services. It is likely that a system administrator would need to be hired either as part of the County or MCA. Standards would be set as in Option 1, agreements signed, and deployment plans developed.

As in Option 1, MFRs would share some EMS millage funds based on the combined formula of population, responses and availability. This option would focus accountability on a fixed number of ambulance providers.

New costs in the system include system administrator, additional staff hours at MCA and possible costs for data programming at the Genesee County 911 Consortium. The EMS millage need not be increased. Current funds and annual surpluses would be more equitably allocated.

### ***Option 3. Develop Comprehensive System and Competitively Procure a Single ALS Provider***

This option results in the lowest level of day-to-day involvement by Flint City and Genesee County from both an operational and financial perspective. This option utilizes a more sophisticated business structure and utilizes a single competitively procured provider. It requires strict operational, financial and clinical performance standards with financial safeguards be implemented as part of the foundational design of the EMS system.

Given the number of emergency and non-emergency transports and user fee revenues available to the system, it is reasonable to anticipate that this approach would likely require zero subsidy. This model competitively procures the services of a single provider to perform all ambulance transport services and uses the profit available from non-emergency assignments to offset the costs of providing emergency assignments. In exchange, the single company has exclusive rights to all emergency and non-emergency transports within Genesee County. As with other options, the contract for service would be performance based, include penalties for non-compliance and include extraordinary financial safeguards.

Public sector agencies could participate in the bid process but only if procedures are developed to fully identify the costs of those operations to include administrative and managerial overhead

---

<sup>45</sup> Geographic zones must be established in a manner that addresses payer mix equity to ensure the economic sustainability of the organizations that would provide service under this model.

costs. Successful competition between public and private entities requires that the bid evaluation process be independently evaluated.

The organization that is awarded the contract would be responsible for emergency and non-emergency transports as well as billing and collection of transport fees. In this option, a County oversight authority in partnership with Medical Control is responsible for system performance by developing and enforcing performance standards. The request for proposal (RFP) document is critical to the evaluation process. It should clearly delineate issues and expectations. Likewise, the selection process should be carefully and professionally managed to achieve a decisive and unbiased selection.

In this option, quick response paramedic units are not necessarily required. Should a private agency be awarded the contract, they could purchase unit or production hours from Flint Fire and/or the Sheriff's Office as part of their deployment plan, if they chose to do so.

Under Option 3, EMS millage fund needs are significantly reduced and refocused to system oversight. A countywide oversight authority should be formed and funded by the EMS millage funds or other revenue sources. The County oversight authority would work in partnership with Medical Control, the Genesee County 911 Consortium and the selected EMS provider. The Sheriff's Office paramedic units and Flint Fire EHCO unit would not be needed in this scenario unless they are requested to contract directly with the selected EMS system provider. EMS millage funds could be allocated to fire departments that provide either BLS or medical first response services as long as these services a reliable, performance based component of the system deployment plan.

Should the selected provider be a non-governmental entity and chose not to contract for paramedic quick response services from either Flint Fire or the Sheriff's Office, those service units and personnel will not be needed in the EMS system. Even though the Flint ECHO unit is staffed with cross-trained firefighter/paramedics, the EHCO unit is primarily an EMS response vehicle. The Department would need to absorb the paramedic personnel into their current organization. Loss of the one ECHO unit should not seriously impair the firefighting capability of the Flint Fire Department.

The impact to the Sheriff's Office would be significant. The priority focus of the cross-trained paramedic/deputies is medical response. However, they are deputized resources who contribute to the work load of current law enforcement efforts. A careful study of their contributions to the law enforcement effort would be needed in order to determine how many of the 33 EMS

positions should remain in the Department. The EMS millage would not be available to fund law enforcement positions.

Option 3 relies on current EMS millage surpluses to fund the transition period, and then look for renewal of the millage to fund a system administrator and staff, additional staffing hours for Medical Control, and possibly support to BLS/MFR resources in area fire departments. The EMS millage requirements could be significantly reduced within two years.

Table 13 summarizes the options, key points and cost implications.

**Table 13 Options Summary**

Option	Key Points	Cost Implications
1	Integrate medical first response services	EMS millage revenues and surpluses shared with MFR agencies and Medical Control; GC911 to fund immediate action recommendation
2	Coordinate and Regulate the EMS System	EMS millage revenues continue to support paramedic quick response; integration of MFR agencies, better accountability of ambulance transport and more system oversight could result in improved response times, better system efficiencies
3	Contract for a single ALS first response and transport provider	EMS millage needs reduced; EMS millage needed support system administrator, MCA and BLS/MFR response and system oversight

## Future Funding Needs

The third question is how to establish equitable funding for the future. The EMS Millage served Genesee County well since the public first approved it over two decades ago. Questions arise about the millage’s intent (paramedic services only or the broader EMS services including BLS and medical first response) and equity (only the City of Flint’s BLS/medical first responder services were supported). Going forward, clear definitions of intent, service contracts, and constant attention to performance will address prior issues.

The Genesee County EMS system has sufficient numbers of emergency and non-emergency transports for efficient and effective ambulance companies to operate most likely with no additional subsidies from local government. Ambulance companies may create partnerships or joint ventures in order to serve Genesee County. The opportunity to serve Genesee County’s

emergency and non-emergency patients will likely result in sufficient interest to secure a robust procurement process.

The EMS millage is a steady and reliable source of funding for Genesee County. Public confidence is a priority to secure a renewal of the millage and for community support of any changes to the system.

**ATTACHMENT A**

---

**Ambulance Providers &  
Base Addresses**

# Ambulance Bases in Genesee County

## Byron

#1 Base 210 Saginaw Street (ALS)

## C-M

#1 Base 5413 Bicentennial Pkwy (Mt. Morris Township) (BLS)

#2 Base 115 Maple Street (Flushing) (BLS)

#3 Base 12009 N Saginaw Street (Mt. Morris City) (BLS)

#4 Base 3370 W Vienna Road (Clio) (BLS)

## Deerfield Ambulance

#1 Base 320 S. State St. (Davison) (ALS)

## DVA

#1 Base 308 N. Saginaw Street & Tuscola Road (Durand) (ALS)

#2 Base 913 Millbrook (City of Flint) (ALS)

#4 Base 3129 Clio Road (City of Flint) (BLS)

#6 Base 5018 N. Saginaw Street (City of Flint) (ALS)

## Emergency M.E.D. STAT

#1 Base 3538 Flushing Road Suite C (Flint City) (ALS)

#2 Base 2219 Davison Road (City of Flint) (ALS)

#3 Base 3725 S. Saginaw Street (City of Flint) (BLS)

## ERS

#1 Base 2111 E Bristol Road (Burton) (BLS)

#2 Base 1301 Flushing Road (City of Flint) (ALS)

## Patriot

#1 Base 1140 S. Belsay Road (Burton) ALS

#2 Base 9459 Lapeer Road #5 (Davison Township) BLS

## REMS

#1 Base 3005 Claude (Flint Twp.) (ALS)

#2 Base Fenton Township Fire Station #2 5120 Owen Road (Fenton Twp) (ALS)

#3 Base 7278 N. Genesee Road (Village of Genesee) (BLS)

#4 Base 3014 Walton Dr. (Flint Twp.) (BLS)

## STAT EMS

#3 Base 4474 Corunna Road (Flint Township) (ALS)

#4 Base 762 East Carpenter (City of Flint) (ALS)

#5 Base 2725 Windemere Ave (City of Flint) (ALS)

#7 Base 3375 N Linden Road (Mt. Morris Township) (BLS)

## Swartz

#1 Base G-1225 W Hill Road @ Fenton Road (Mundy Twp.) (ALS)

#2 Base Beecher and Ballenger Highway (City of Flint) (ALS)

#3 Base G-5531 S. Saginaw Street (Grand Blanc Township) (ALS)

#4 Base 4080 Lapeer Road @ Center Road (Burton) (ALS)

#5 Base 11643 S. Saginaw St. (Grand Blanc) (BLS)

#6 Base G-6067 Corunna Road (Flint Twp.) (BLS)

## Twin Township

#1 Base 7900 Saginaw Street (New Lothrop) (BLS)

Updated 9/8//05

**ATTACHMENT B**

---

**Genesee County Sheriffs Office  
Paramedic Program Revenues & Expenses**

**Genesee County Sheriff's Office Paramedic Revenues & Expenses**

<b>Account Name</b>	<b>Actual 9/30/01</b>	<b>Actual 9/30/02</b>	<b>Actual 9/30/03</b>	<b>Actual 9/30/04</b>	<b>Budget FY04/05</b>	<b>Actual Oct-Ap05</b>
Current Property Taxes	2,911,728	3,171,341	3,365,570	3,794,491	4,169,327	3,552,642
Tax Adjustments	(12,941)	(14,276)	(2,207)	(4,584)		
Delinquent Taxes	747	214	0	0		
Current Pers. Prop. Taxes	250,483	246,879	248,425	263,908		246,898
Industrial Facilities Tax	3,113	13,784	15,239	3,325		10,783
Transfers In		6,183	0	1,500		
Miscellaneous Revenue	186	317	0	0		
Payment in Lieu of Taxes	2,926	3,398	4,974	3,234		
Interest Earned Investments	151,542	90,882	52,729	61,953		68,185
<b>Total Revenue</b>	<b>3,307,784</b>	<b>3,518,722</b>	<b>3,684,730</b>	<b>4,123,827</b>	<b>4,169,327</b>	<b>3,878,508</b>
Salary Permanent	1,336,099	1,444,565	1,568,657	1,930,918	1,953,125	1,042,745
Salary Part-Time	0	0	0	0	0	0
Salary Overtime	73,845	59,267	68,241	108,126	160,000	63,680
Overtime Holiday Pay	30,338	32,130	39,372	43,510	0	27,852
Salary Premium	44,911	47,273	53,192	63,091	0	34,535
Longevity	67,528	65,085	71,860	78,683	75,611	42,773
Standby Time	0	0	0	0	0	0
Court Time	17,039	12,226	21,338	27,324	0	16,225
<b>Subtotal Personnel Costs</b>	<b>1,569,760</b>	<b>1,660,546</b>	<b>1,822,660</b>	<b>2,251,652</b>	<b>2,188,736</b>	<b>1,227,809</b>
Social Security	119,894	126,294	138,401	169,498	167,441	103,222
Medical Insurance	179,582	197,190	262,809	350,171	430,258	191,296
Optical Insurance	2,816	3,013	3,330	4,102	4,803	2,067
Dental Insurance	22,685	21,700	24,333	29,083	33,855	14,907
Life Health Insurance	39,779	39,422	40,053	46,340	62,003	22,179
Retirement	163,043	167,287	182,495	279,686	355,422	186,792
Workers Compensation	37,107	35,362	38,994	48,022	49,222	29,770
Unemployment	15,429	15,929	17,585	21,561	21,888	13,304
Post-Retirement Benefit	14,934	15,929	46,396	97,633	109,437	65,008
<b>Subtotal Fringe Benefits</b>	<b>595,269</b>	<b>622,126</b>	<b>754,396</b>	<b>1,046,096</b>	<b>1,234,329</b>	<b>628,544</b>
Supplies Office	1,267	1,659	1,721	1,838	1,600	252
Postage	109	78	111	110	150	38
Magazines & Periodicals	385	409	430	255	650	1,197
Laundry Robes Uniforms	700	10,093	5,375	7,636	6,000	3,247
Supplies Medical	39,660	28,546	27,497	42,061	75,000	23,724
Supplies Uniforms	25,111	4,322	13,723	22,420	17,000	6,270
Supplies Other	5,997	3,834	4,057	6,700	15,000	2,733
Supplies Special Projects	16,632	0	0	0	0	0
<b>Subtotal Supplies</b>	<b>89,861</b>	<b>48,941</b>	<b>52,914</b>	<b>81,020</b>	<b>115,400</b>	<b>37,462</b>
Service Contracts	440	0	80	0	2,000	372
Registrations	614	425	500	830	500	650
<b>Serv Contract-Physician</b>	<b>31,246</b>	<b>20,543</b>	<b>22,494</b>	<b>34,508</b>	<b>40,000</b>	<b>24,111</b>
Telephone and Telegraph	6,807	5,791	5,153	4,138	8,000	899
Repairs Equipment	14,390	39,030	(7,467)	13,340	32,000	7,779
Repairs Vehicle	2,375	3,003	3,439	5,156	3,500	1,949
Repairs Office Equip.	260	0	0	0	200	0
Rental Equipment			0	21	0	0
Freight and Express			0	105	0	0
Training	8,297	4,319	6,264	5,932	18,000	4,821
Electric Utilities	59	109	99	100	0	51
Health Serv Employees	0	65	0	235	0	0
Memberships	0	0	72	0	125	25
<b>Insurance False Arrest</b>	<b>20,845</b>	<b>20,844</b>	<b>41,516</b>	<b>32,292</b>	<b>49,176</b>	<b>0</b>
<b>Malpractice Insurance</b>	<b>16,197</b>	<b>16,197</b>	<b>22,431</b>	<b>17,388</b>	<b>26,572</b>	<b>0</b>
<b>Subtotal Service Contracts</b>	<b>101,530</b>	<b>110,326</b>	<b>94,581</b>	<b>114,045</b>	<b>180,073</b>	<b>40,656</b>
Travel Regular	0	0	0	0	50	0

**Genesee County Sheriff's Office Paramedic Revenues & Expenses**

<b>Account Name</b>	<b>Actual 9/30/01</b>	<b>Actual 9/30/02</b>	<b>Actual 9/30/03</b>	<b>Actual 9/30/04</b>	<b>Budget FY04/05</b>	<b>Actual Oct-Apr05</b>
Equipment	92,814	1,952	27,622	103,072	112,370	20,600
Equipment Under \$250	0		0	0	0	0
Equipment-Computer	0	(4,000)	3,000	0	0	0
Office Equipment	0		0	0	2,000	0
Equipment Under \$1000	20,359	5,174	0	0	12,000	850
Books	0		329	0	1,000	0
<b>Subtotal Capital Outlay</b>	<b>113,173</b>	<b>3,126</b>	<b>30,951</b>	<b>103,072</b>	<b>127,370</b>	<b>21,450</b>
Cont Other Funds	0		0	0	0	0
GM Tax Settlement-GB	7,528	7,528	7,528	7,528	7,528	0
GM Tax Settlement	4,341	0	0	0	4,341	0
<b>Subtotal Other Costs</b>	<b>11,869</b>	<b>7,528</b>	<b>7,528</b>	<b>7,528</b>	<b>11,869</b>	
Attorney Fees Corp Counsel	\$0		-	-		-
Print Shop	\$0	\$300	-	-	1,500	-
Convenience Copier	\$0		-	-		-
Motor Pool Charges					310,000	247,308
Rental Car	\$278,768	\$275,812	315,159	385,518	-	-
<b>Subtotal IGSF Controll.</b>	<b>\$278,768</b>	<b>\$276,112</b>	<b>315,159</b>	<b>385,518</b>	<b>311,500</b>	<b>247,308</b>
Personnel Services	\$0	\$0	-	-	-	-
Controller Services	\$0	\$0	-	-	-	14,541
Purchasing Services	\$0	\$0	-	-	-	9,084
Insurance General	\$0	\$0	-	-	-	44,899
Rental County Office	\$0	\$0	-	-	-	-
<b>Subtotal IGSF Non-Con.</b>	<b>\$0</b>	<b>\$0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>68,524</b>
<b>Total Expenditures</b>	<b>\$2,760,230</b>	<b>\$2,728,705</b>	<b>\$3,078,189</b>	<b>3,988,931</b>	<b>4,169,327</b>	<b>2,271,754</b>
<b>Starting Fund Balance: FY2000</b> (per financial statements)	\$1,840,642	n/a	n/a	n/a	n/a	n/a
<b>Current FY Excess Revenue Over Expenditures</b>	\$547,554	\$790,017	\$606,541	\$134,896	\$0	n/a
<b>Fund Balance Carried Forward</b> (agrees with financial statements)	<b>\$2,388,196</b>	<b>\$3,178,213</b>	<b>\$3,784,754</b>	<b>\$3,919,650</b>	<b>\$3,919,650</b>	n/a

ATTACHMENT C

---

## Benchmark Summary

## System Components Benchmarks Overview Genesee County, MI EMS System

<i>Communications Benchmarks</i>	<i>Comments</i>
Public access through a single number, preferably enhanced 911	✓
Coordinated PSAPs exist for the system.	<b>No:</b> 3 separate 911 centers little coordination with MCA
Certified personnel provide pre-arrival instructions and priority dispatching (EMD) and this function is fully medically supervised	✓: GC911 <b>No:</b> Flint 911 <b>No:</b> Fenton 911
Data collection which allows for key service elements to be analyzed	<b>No:</b> GC 911 provides no data to system ✓: Flint 911 provides reports ?: Fenton 911 unknown
Technology supports interface between 911, dispatching & administrative processes	GC911 appears to have capability but does not utilize ✓: Flint 911 appears to have capability
Radio linkages between dispatch, field units & medical facilities provide adequate coverage and facilitate communications	<b>No</b>

<i>Medical First Response Benchmarks</i>	<i>Comments</i>
First responders are part of a coordinated response system and medically supervised by a single system medical director.	<b>No</b> MFRs not acknowledged in system
Defined response time standards exist for first responders.	<b>No:</b> not for MFRs Targets exist for ALS
First response agencies report/meet fractile response times.	<b>No:</b> RT for all providers not reported on fractile basis
AED capabilities on all first line apparatus.	✓
Smooth transition of care is achieved.	<b>No:</b> Issues reported when multiple medics on scene/ALS medic transport

Key – Green = Documented, Yellow = Partially Documented, Red = Not Documented

<b><i>Medical Transportation Benchmarks</i></b>	<b><i>Comments</i></b>
Defined response time standards exist.	<b>No</b> : no separate transport response time standards; transport arrival times not reported to CAD or monitored
Agency reports/meets fractile response times.	<b>No</b> : transport unit arrival data not collected and segregated at CAD level
Units meet staffing and equipment requirements	<b>✓</b>
Resources are efficiently and effectively deployed	<b>No</b> : there is no overall deployment plan to include MFRs, ALS quick response, and ALS transport ambulances
There is a smooth integration of first response, air, ground and hospital services	<b>No</b> : the system is not organized
Develop/maintain coordinated disaster plans	<b>✓</b> Reported – not validated

<b><i>Medical Accountability Benchmarks</i></b>	<b><i>Comments</i></b>
Single point of physician medical direction for entire system.	<b>✓</b> Non-emergency providers have separate Med. Control
Written agreement (job description) for medical direction exists.	<b>No</b>
Specialized medical director training/certification.	<b>✓</b>
Physician is effective in establishing local care standards that reflect current national standards of practice.	<b>Partial</b> : As much as possible w/system and with data research impairments
Proactive, interactive and retroactive medical direction is facilitated by the activities of the medical director	<b>Partial</b> : As much as possible w/system and with data research impairments
PCR/QI data transparency for MD review	<b>No</b> : Data is self-selected by providers
Clinical Education/Development Effectiveness	<b>Partial</b> – independent efforts
Clinical Education Efficiency	<b>Partial</b> – independent efforts

<b><i>Customer/Community Accountability Benchmarks</i></b>	<b><i>Comments</i></b>
Legislative authority to provide service and written service agreements are in place.	<b>No</b> : no written agreements with providers; no county EMS ordinance
Units and crews have a professional appearance.	<b>✓</b>
Formal mechanisms exist to address patient and community concerns.	<b>✓</b>
Independent measurement and reporting of system performance are utilized.	<b>No</b> : lack of external monitoring through the system components
Internal customer issues are routinely addressed	<b>No</b> : lack of responsiveness reported

<b><i>Prevention and Community Education Benchmarks</i></b>	<b><i>Comments</i></b>
System personnel provide positive role models.	✓
Programs are targeted to “at risk” populations.	No:
Formal and effective programs with defined goals exist.	No:
Targeted objectives are measured and met.	No:

<b><i>Ensuring Optimal System Value Benchmarks</i></b>	<b><i>Comments</i></b>
Clinical outcomes are enhanced by the system.	Partial: based on process indicators Not clear particularly regarding response time performance
Ambulance response utilization and transport utilization (UHU) is measured and hours are deployed in a manner to achieve efficiency and effectiveness.	No: Base allocation plan
Ambulance cost per unit hour & transport document good value.	No: Duplicate resources
Service agreements represent good value	n/a: there are no service agreements
Non-emergency ambulance effective & efficient	n/a
Non-Ambulance but medically necessary (MAV) services are effective and efficient	n/a
System facilitates appropriate medical access	✓: Medical facility access
Financial systems accurately reflect system revenues and both direct and indirect costs.	Partial limited to gov’t finances; indirect costs not necessarily captured
Revenues are collected professionally and in compliance with regulations.	n/a: system revenues are 100% tax supported, private unknown
Tax subsidies when required are minimized.	✓: Service redundancies

<b><i>Organizational Structure and Leadership Benchmarks</i></b>	<b><i>Comments</i></b>
A lead agency is identified and coordinates system activities.	No: MCA leads within its authority; regulatory leadership is lacking
Organizational structure and relationships are well defined.	No: 911/MCA/Provider issues
Human resources are developed and otherwise valued.	✓: Paramedics well respected
Business planning and measurement processes are defined and utilized.	No
Operational and clinical data informs/guides the decision process.	No: Data is not available from 911
A structured and effective performance based quality improvement (QI) system exists.	No: QI exists but is bogged down in manual data input & admin detail

ATTACHMENT D

---

## Legal Review

## **GENESEE COUNTY EMS SYSTEM AND MEDICAL CONTROL REVIEW OF LEGAL ISSUES**

Regulation of the EMS system in Michigan is accomplished through three avenues:

1. General statewide regulation of the EMS system, under the authority of Part 209 of the Public Health Code, M.S.A. 333.20901 et seq., commonly known as Act 368 of 1978, as amended. This statute lays out the regulatory scheme for the state, including defining the regulatory authority of the Department of Health to promulgate rules and regulations governing defined aspects of the EMS system.
2. By local government units, where those local government units choose to act, as set forth in M.S.A. 333.20948. This provision allows, but does not require, local government units to regulate EMS in two ways:
  - a. By providing the service themselves, or in combination with other local government units (M.S.A. 333.20948(1)). The service may be financed through fees for service or through a special assessment.
  - b. By enacting an ordinance regulating ambulance operations, non-transport prehospital life support, or medical first responder services (M.S.A. 333.20948(3)). The standards and procedures established under such an ordinance may not conflict with or be less stringent than those specified by state EMS statute or the administrative rules of the Department of Health promulgated under the state EMS statute.
3. By the duly-constituted Medical Control Authority (MCA), established under the state EMS statute and administrative rules. Unlike many state regulatory schemes, where medical control is limited to clinical matters, the Michigan statute mandates the MCA to establish protocols for agencies as well as practitioners, and further mandates the regulation of dispatch based on medical need and the capabilities of the EMS system (M.S.A. 333.20919(1)(b)). The MCA's protocols must be approved by the Department of Health prior to taking effect. This approval is conducted through its committee structure.

The MCA may require agencies within its region to meet reasonable additional standards that are more stringent than those required by the state. The MCA and the Department of Health are required to consider the medical and economic impact on the community of any additional standards. It is important to note that this is not interpreted by the state committee as considering the economic impact on a particular agency, but rather on the community as a whole (e-mail, W. Fales, M.D., MCA Kalamazoo County, July 3, 2005).

Clearly the County of Genesee, as a unit of local government, has the authority to develop an EMS system, either of its own operation or through a regulatory scheme enacted by ordinance. This is the cleanest method of resolving the issues present in the

system today. The ordinance could define service areas which providers must serve, require the use of a single dispatch center, or any other of a host of remedial measures. This avenue is not subject to review except by courts of competent jurisdiction.

On a secondary basis, the Medical Control Authority has wide discretion to regulate the system and the way it operates, but it is subject to review by the state EMS hierarchy, which may seek to impose its judgment in place of local authority.

Often, concern is raised about governmental regulation or takeover of ambulance services under the guise of “anti-trust” arguments. Typically it is alleged that a governmental unit, exercising its police power (the power to take action to protect the public health, safety and welfare) is engaging in anticompetitive behavior by displacing or regulating one or more ambulance services within its jurisdiction.

Fortunately, the Michigan Antitrust Reform Act of 1984, Act 274, provides clear guidance in this area. M.S. A. 445.774, §4(3), which provides that

*This act shall not be construed to prohibit, invalidate, or make unlawful any act or conduct of any unit of government when the unit of government is acting in a subject matter area in which it is authorized to act by law, except for purposes of conducting an investigation and the obtaining of appropriate injunctive or other equitable relief, other than civil penalties, pursuant to section 7.*

Since Act 368, supra, authorizes units of government to operate ambulance services or regulate ambulance services, the county need not fear anti-trust litigation from their actions, although specialist local legal counsel should be consulted prior to the taking of any actions that could displace established providers within the jurisdiction.

In addition, no court cases could be identified where units of Michigan government have been sued because of enactment of a regulatory scheme authorized under the EMS act.