



## **Emergency Medical Services Agency**

August 8, 2012

### **Report to the Local Agency Formation Commission**

#### **The Relationship of Fire First Response to Emergency Medical Services**

On September 26, 2011, the Contra Costa Emergency Medical Services (EMS) Agency submitted a report to LAFCO on the accomplishments and challenges facing the EMS System. Since then the EMS agency has become actively involved in mitigating consequences of fire station closures in East Contra Costa County and is concerned about the potential erosion of fire first response countywide. In preparation for the August 8, 2012 LAFCO meeting the EMS Agency has been requested to submit the following report.

#### **The Challenge**

Fire services play a vital role in providing an engine “first response” to 9-1-1 medical emergencies. In some areas (Moraga-Orinda and San Ramon Valley) fire services also provide emergency ambulance response. In other areas of Contra Costa County, emergency ambulance response to 9-1-1 calls is provided by a private company, American Medical Response (AMR). The Contra Costa EMS Agency, a division of Contra Costa Health Services, is charged with overall coordination of the EMS system and administration of ambulance service contracts, as well as contracts with fire services providing paramedic service and with hospitals providing specialized emergency service. With significant budgetary pressures currently affecting nearly all public sector entities, Contra Costa County has already been impacted by cutbacks in fire service in some areas, and may see more cutbacks in service in the months ahead. Fire station closures mean fewer fire engines available for medical first response. The purpose of this document is to discuss the structure of the EMS system and the potential impacts of fire station closures.

#### **The EMS System at Work and the Role of First Responders**

When a medically-related 9-1-1 call occurs in Contra Costa, the call is routed to one of three designated fire/medical dispatch centers located at Contra Costa County Fire, San Ramon Valley Fire, and Richmond Police. There, specially-trained dispatchers systematically assess the medical needs based on information the caller provides, assigns a dispatch priority to the call, dispatches the appropriate EMS resources and may provide emergency first aid directions to the caller. A typical emergency call receives a fire engine first response and an ambulance, both dispatched immediately with lights and siren (Code 3). In some cases, where the dispatcher determines the call is less urgent and less complex, an ambulance alone may be dispatched without lights and siren.



All emergency ambulances and most fire first responder units are staffed with at least one paramedic-trained crewmember.<sup>1</sup> Other crewmembers are trained at the Emergency Medical Technician I (EMT-I) level. All responders, whether paramedic or EMT-I, are trained and equipped to perform most immediately needed life-saving first aid measures such as controlling bleeding, opening and maintaining an airway, providing cardio-pulmonary resuscitation (CPR), and performing cardiac defibrillation. Only paramedics can administer drugs and perform certain other advanced medical procedures.

Fire first responders typically arrive 2-5 minutes before an ambulance, but, depending on the location of the call and the location of the responding units, that interval can be 10 minutes or more. While a few minutes difference in response times do not affect the outcome for most patients, in certain critical cases – cardiac arrest, breathing difficulty, profuse bleeding – minutes, or even seconds, can make a difference in saving a life or avoiding serious complications. Fire first-responders provide emergency treatment on scene until care can be transferred to the ambulance crew, continue to assist in patient care when needed both on the scene and, in some cases, en route to the hospital. Importantly, fire first responders provide scene management, safety oversight, and rescue services (e.g., extricating patients from motor vehicle accidents). When patients require transport by helicopter (most often critical trauma patients), fire responders are required to manage the landing site. Fire personnel have all hazard capabilities not easily duplicated or replaced by other personnel.

While fire resources generally are station-based, AMR ambulance resources are “dynamically” deployed. Using a system known as “system status management,” ambulance units are moved to predefined post locations based on system status (number of units available) at any given time. Thus, when one ambulance is dispatched to a call, one or more other ambulance units may be moved to best cover the area. The goal is to post to locations where the best response times can be achieved for the next expected calls based on history, time of day, and day of week. While this system maximizes use of available resources, it does not provide the depth of resources generally associated with the fire services.

### **Potential Patient Care Impacts of Reductions in Fire Service Resources**

Ambulance response time is unaffected by the changes in fire first response as emergency ambulance response time requirements are set by County contract. First responder response times are obviously affected in those areas where a fire station closure increases the response time from the next closest station. Additionally, first responder response times may be negatively impacted in all areas when the engine from the closest station is occupied on another call. Where first responder response times are delayed, critical interventions needed in the early stages of some calls may be delayed and, in the most serious cases, treatment delays may affect patient outcome. Also, transport times (time from 9-1-1 call

---

<sup>1</sup> In areas without paramedic first response (East Contra Costa County Fire, Richmond, Crockett-Carquinez Fire), the County through its ambulance contract has required AMR to provide additional ambulance units or single-paramedic-staffed non-transporting “Quick Response Vehicles” to respond with the fire first responders.



until patient arrival at hospital) may be negatively impacted when the ambulance crew is required to spend more time treating the patient on the scene due to the delayed arrival of the first responder.

### **Disaster and Multi-Casualty Events**

Contra Costa County, like many communities in the Bay Area, has hazards related to industry, transportation, flood and wildfire, as well as urban and rural demographics. The Contra Costa EMS Agency plays a role in supporting emergency operations as part of a system of strong "all hazards" emergency response. Although large-scale emergency events occur infrequently, they predictably require numerous fire, ambulance and hospital resources to rapidly respond, triage, treat and transport victims. In these scenarios the importance of having an adequate first response capability to effectively mitigate these risks cannot be minimized. The "all hazard" capabilities of the fire services are part of the county's critical infrastructure to respond to a mass casualty event or disaster.

### **EMS Agency Role and Changes in Fire First Response**

Fire first response is provided by the county's six fire districts and three municipal fire departments and is supported primarily through local funding. Each of these services through its governing body, determines the level of service to be provided. The EMS Agency works in collaboration with Fire-EMS and Ambulance provider agencies to support a coordinated system of patient care pursuant to Section 1797.103 of the California Health and Safety Code.

### **Measure H Support for Fire First Responders and Fire Paramedic First Response**

In 1988, a countywide ballot measure (Measure H aka CSA-EM-1) enabled the Board of Supervisors (BOS) to establish an annual parcel charge (\$10 for a single family residence) to pay for enhancements to the County EMS system, including providing increased paramedic availability. From 1989-2004 this funding was primarily used to provide more paramedic ambulance availability.

In 2004 a County EMS system redesign plan was approved by the Board of Supervisors and since then Measure H funding has been used to subsidize the added cost of providing fire first responder paramedic service. The available Measure H funding has enabled the County to provide an annual subsidy of \$30,000 for paramedic-staffed fire engines. Since 2004 the majority of Measure H funding has been used to support Fire-EMS paramedic programs.

Measure H partially offsets the added cost to a fire service to upgrade its first responder units to the paramedic level, but, obviously, represents a small fraction of the actual cost of maintaining a station. In areas without paramedic engines, the County has provided additional paramedic coverage through AMR. In Emergency Response Zone A (Richmond) this is accomplished with AMR providing dual paramedic ambulances and in Emergency Response Zone E (East County) by providing single medic Quick Response Vehicles (QRVs) co-located with fire to provide a level of paramedic first response.



These accommodations were instituted in 2004 to provide an “equitable level” of prehospital care to all communities.

In 2010 the Contra Costa BOS approved a provision to preserve Measure H paramedic first response funding for fire agencies faced with “browning out or closing” fire stations due to budgetary constraints. Under this provision fire agencies continue to receive their same level of paramedic engine funding as long as “paramedic first response service” continues to the affected community. As the fire agencies are forced to reduce “paramedic engines,” funding for paramedic first response may be affected under the current paramedic first responder fund requirements. The EMS Agency believes that funding to preserve fire first response, regardless of level, is a priority for the Contra Costa EMS system.

### **Other Support for Fire First Response from Measure H**

Measure H funds directly support the practice of medicine by prehospital personnel with the goal of improving patient outcome throughout the EMS System. Examples of fire agency support include:

1. Prehospital equipment, such as Automated External Defibrillators (AEDs), 12-lead (ECG) transmission-capable cardiac monitors, cardiac compression devices and mass casualty equipment.
2. Contra Costa Fire-EMS Training Consortium competency programs including patient care simulators that mimic real-life physiologic response to life threatening conditions.
3. Implementation of electronic prehospital patient data systems providing appropriate oversight of patient care to support improved outcomes in cardiac arrest, stroke, heart attack, and other conditions.
4. Fire-EMS clinical personnel responsible for agency level oversight of paramedic and EMT clinical performance required to support systems of care, e.g. Trauma, Stroke, STEMI and Cardiac Arrest.
5. Computer-aided dispatch upgrades and “smart” integrated dispatch automated programs supporting appropriate matching of resources to patient condition including bystander CPR, e.g. Emergency Medical Dispatch<sup>2</sup>, PulsePoint<sup>3</sup>.

### **Summary:**

The coordinated response of fire and ambulance services is an essential partnership in the care of 9-1-1 patients. The EMS Agency will continue to work with each fire service to achieve optimal integration

---

<sup>2</sup> Emergency Medical Dispatch (EMD) is a standardized dispatch interview approach to 9-1-1 medical calls consistent with national dispatching standards.

<sup>3</sup> PulsePoint is a dispatch linked GPS smartphone enabled application that advises bystanders trained in CPR where the nearest AED is located and advises them that they are near cardiac arrest victim.



and coordination of first responder and emergency ambulance service, but the level of fire first response is determined by the governing bodies of each fire service. The Contra Costa EMS Agency does not control the funding, configuration or response capability of fire first-responder services and does not have the resources to fill gaps that may result from cutbacks to fire services. **Although 9-1-1 ambulance response times are NOT impacted by these changes, ambulance service cannot duplicate fire first response times or activities.** Contra Costa EMS continues to carefully monitor EMS response and patient care as the capabilities of fire first response change.

At the same time emergency medical care is entering a period of dramatic change that requires the EMS system to “fully integrate” with the health care system to reduce cost and improve patient outcomes. Partnerships will include not only hospitals but health information systems, Accountable Care Organizations (ACOs), and Patient Safety Organizations (PSOs). EMS-Health Care integration will provide extraordinary enhancements in emergency care and opportunities for interested provider agencies to innovate using trained prehospital professionals. Examples include:

1. The current EMS System Trauma, STEMI, Stroke, Cardiac Arrest and *HeartSafe* programs.
2. Linking dispatch agencies to nurse call centers to better match patient need to resources.
3. The use of community paramedics to support in-home programs to prevent injuries, provide health maintenance, monitor medically fragile or discharged patients reducing the volume and cost of preventable emergencies.
4. Integrated health information record systems to support coordinated care between the field and the emergency department.
5. EMS provider agency and ACO partnerships to reduce or prevent hospital re-admissions.
6. Implementation of new pre-hospital care roles, e.g. Advanced EMT, Community paramedic.
7. Innovative programs to help support populations who use the EMS system because access to care is otherwise not available.
8. Creation of potential new revenue streams to support EMS providers interested in pursuing hospital and ACO partnerships.

Contra Costa EMS System provider agencies are all well positioned to partner with health care system providers to support efficient, safe and evidence-based patient care in this new environment. The EMS Agency is committed to working collaboratively within the capabilities of the community to help support these opportunities and fulfill its mission.