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Emergency Management: Resuscitating the Community

We have come a long way in the field of emergency medical services in thousands of communities; a sudden medical emergency patient will have a team of fire service medics place some pads on his or her body. The medics then will be able to read that person's heartbeat on an instrument screen. Every heart disorder has a specific rhythm. The patient's cardiac condition can be assessed, and the appropriate medical intervention can be applied. If the diagnosis is done quickly and correctly, the patient's chances for survival increase significantly.

What is not so well known is that a community also has a heartbeat. There is a rhythm to life. Things happen—traffic jams, rain on a company picnic, the television goes out during a soap opera—and communities suffer from real emergencies. Each type of emergency creates an impact on the quality of life in that community. This is where the fire service comes in.

Our job is to provide some type of intervention that restores the community back to normal. Sometimes, it is a small event that affects only a few people, like a traffic accident or a single house fire. Then there are times when a community is stricken by an emergency so widespread and traumatic that it paralyzes the entire community. When this happens, the community must be treated like a single patient. The condition must be diagnosed, the proper treatment applied, and the situation stabilized. Sometimes we need to examine the community's electrocardiogram (EKG) to determine how severely the rhythm has been disrupted.

Historically, the fire service has been in the forefront of handling emergencies. Past experiences seem to indicate that often we have had to learn our lessons the hard way. Time after time, our own cities and towns have been impacted by disasters that have immobilized both the population and the emergency service.

Over the last two decades, we have seen the development of a number of techniques which can be used to minimize disaster impact on emergency service, so we can continue to function with a community in distress. The most important of these techniques is the Incident Command System (ICS). The concept, pioneered by the Firescope project, has been refined, adapted and implemented by agencies ranging in size from local, regional, state and federal levels. Further, it has been adapted by many other emergency services groups, such as law enforcement.

To utilize ICS to its fullest extent, a fire agency must take one more step back from the emergency scene. We need to examine other models: the impact model and the response model.



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The impact model is in the form of a wave (see illustration 1). It is the community's EKG. The impact model demonstrates that time is the fixed element in all emergencies. No matter what event occurs, the element of time is relentless. Minutes turn to hours, hours into days, and days into weeks. The model is to be read left to right, with the left being normalcy. The line curves up, indicating a stressor in the community. There is a point at which there is a loss of control concerning some aspect of community safety. The curve continues until the maximum impact; then begins to decline until control is restored, and the community returns to normal.

There are sub-elements to the model. The passage of time from normalcy is classified as an event's "speed of onset." The time between losing and gaining control is the "duration of the event." The period from gaining control until the condition returns to normal is the "recovery period."

The theoretical model is a perfect bell curve. In actuality, the emergency rhythm takes on a different configuration. Moreover, the model expands in perspective as the emergency expands to encompass a larger population or larger curves. For example, a structure fire can be charted on the model. A normal reflex time chart is used to describe response times. This fits into the "speed of onset" element. The element's magnitude is relatively low. Now, apply the flame model for an earthquake or a detonation of a truck loaded with explosives. The rhythm of emergencies can create a shock to the community, not unlike a heart attack to an individual.

Almost every potential emergency has a different rhythm. A weather emergency, like a flood or hurricane, has a different profile than an environmental or natural event, such as a landslide or an earthquake that is more instantaneous.

The impact model implies that emergencies can be classified or categorized into three basic configurations: instantaneous emergency, escalated emergency and incremental emergency. Examples of instantaneous emergencies are explosions or earthquakes. Escalated emergencies are floods, an epidemic, or any situation that starts small and grows. Incremental emergencies get progressively worse, such as a fire that turns into a hazardous materials incident, which grows to an environmental crisis. These are relatively predictable, and each has implications for the emergency service in a given jurisdiction.

The corollary model is the response model. It, too, has a wave-like configuration, and the base line also is time. Reading from left to right, the response model has three elements escalation, resource management and resource integration. Escalation is the period of time it takes for all required resources to deal with maximum impact to the emergency scene. Missions, objectives and priorities are assessed, assigned, reassessed and reassigned in management. Integration is the period in which emergency service groups develop and implement relationships with nonemergency service groups essential to restoring normalcy to the community.



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The response model also is like the impact model in that different configurations are possible. It has three basic profiles: programmed or automatic activation, increment planned activation and improvised activation. Improvised activation is a configuration that almost runs in fixed parameters that require little decision-making. Incremental activation requires actual decisions and approvals of different levels of supervision in the hierarchy.

If one examines the impact model based on different risks, and assesses the necessary response based on available resources, it is clear that the more instantaneous and widespread the emergency, the more likely even a programmed response will be inadequate for a while. Also, it establishes that an incremental emergency can be made into a disaster by a rigorous model that is improvised during the emergency. An emergency service manager's objective should be to match the model profile as closely with the disaster as possible. Incongruity between profiles presents a series of problems for the community.

Widespread emergencies with inadequate resource response place the community into a position of self-help. In the most severe emergencies, adequate responses contain, control and coordinate resources, and can shorten the event's duration, resulting in a community's stability.

If the impact model is based on resource assessment, it follows that the response model is based on risk assessment. Both are capable of being analyzed, and of being predicted with a certain degree of accuracy. That is what emergency planning is about. The real question is how thorough is the job we have done in preparing to keep the community's rhythm intact? Are we as ready as we ought to be to resuscitate our ailing community?

We have focused on the day-to-day operations. ICS serves us well in the escalation period. Mutual and automatic aid is there for our use. The concept of all-risk emergency planning is doing a great deal to bring integration between emergency and nonemergency agencies and resources. The record of major events in the western United States has given us excellent examples of how emergency services personnel can rise to the occasion to deal with a crisis. But, it is also true that all of us can become better.

Over the last 25 to 50 years, we have seen some landmark events. These have included widespread structural and property loss from fires such as Malibu, Bel-Air, and the latest in Yellowstone. Mother Nature has challenged us with the Mount St. Helen's eruption and the Whittier earthquake. If we go back further, we can learn from the great San Francisco earthquake. Technology and human error have given us the boiling liquid-expanding vapor explosion (BLEVE) in Kingman, the dynamite blast in Rodebury, Oregon and the Exxon crude oil spill. More events such as these are waiting to occur in each of our communities right now.



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Recently an exercise in Sacramento, California examined how much we have learned from the previous events. The three-day exercise was based on an earthquake scenario. It could have been any other type of instantaneous, widespread event. The results were not available at the time of writing this article. However, interviewing two fire command personnel who attended, Division Chief Larry Greene, Fullerton (California) Fire Department and Assistant Chief Frank Borden of the Los Angeles (California) Fire Department, provided me with some interesting thoughts on future events.

There is still a need to assess the availability and capability of resources required to respond for relief of an impact area. Secondly, there is still a serious problem in the communication of vocabulary and expectation between large, autonomous resources. Often, those we call in to help us speak a different technical language, and are going to carry out a mission that is different from what the requesting agency expects. Lastly, there are still areas that need improvement in hardening emergency services resources, so that they can operate without immediate assistance from the outside world.

Those observations are not criticisms, but rather a recognition. The planning process for a community's defenses against major emergencies is continuous. Moreover, many fire departments are becoming more involved in urban planning activities for the entire community. Because so many emergencies we face are a combination of natural phenomena complicated by manmade situations, the process of emergency management now includes the need to assess risks before they are actually created by zoning and planning. Excellent examples of this can be found in the new requirements for hazardous materials facilities, as well as seismic considerations.

Emergency management, which is broader than incident management, is rapidly evolving into a new discipline that integrates special knowledge of emergency services with the tools and techniques of urban planners. Simultaneously, the fire service and specifically, the fire chief, is evolving into a more responsible position in the emergency management field. It is not uncommon for the fire chief to be wearing two hats—fire chief and emergency management director.

This responsibility has created some new demands upon many fire agencies. Among these is the responsibility to conduct public education and awareness seminars, as well as the need for the fire service to become even more self-supporting in the event of widespread emergencies. Many departments that are responsible for areas with several potential disasters have stepped up their efforts to motivate the citizenry to develop some self-dependency. Sunnyvale, California, has created a fire service version of a neighborhood watch program. This program results in a community having special procedures and resources to operate on their own during major earthquakes.

Many departments are also recognizing that they have not provided for their own support. For example, how many fire stations have three-day rations of food and water? How many have contingency plans to



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relocate if their facilities are damaged or destroyed during an impact period? What contingencies are in place for the care of firefighters' dependents for long duration events? These questions must be asked and answered if the fire service is to maintain both credibility and leadership in this area.

A community has a vitality and a rhythm just like an individual. When it is shocked by a traumatic event, it can be destroyed and disabled or it can be defended and resuscitated. The degree to which the fire service is prepared to respond to routine emergencies is often the basis for its community image and the community's well being.