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Additional Notes, Problems, Lessons Learned, Statistical Data from Oklahoma City Bombing of Alfred P. Murrah Federal Building at 9:01 AM on April 19, 1995.

Within an hour after the bombing, 139 patients had been transported to area hospitals. Before 19 am that morning, more than 50 ambulances arrived on scene and began the arduous task of transporting the walking wounded to one of the 11 area hospitals. When officials on-site recognized that most of the victims were going directly from the bombing site to the hospitals, they determined it would be best to move the triage unit closer to ground-zero. However, at around 10;30 am a second bomb threat came in and forced them to move it once again, further away. Needless to say, this was frustrating to many of the victims still needing assistance, aid, and transport. By the time the "all clear" signal was given for the second bomb threat, most of the victims had already been extracted from the federal building and there was little use for the triage unit. By the end of that first day, approximately 450 people had been treated at area hospitals for a multitude of injuries. Of the 450 or so treated, about 355 were released that same day while the remaining 95 victims were treated and required to stay overnight. Ten people died after being admitted to the hospital. Overall, most considered the response a big "success." The primary reasoning behind this was the inter-agency preplanning, training, and interactions between the various departments and agencies that helped lead, for the most part, to an integrated response. Two keys to the rescue operation were the establishment of a Multi-Agency Coordination Center (MACC) and the use of an Incident Command System (ICS). Due the excellent working relationship between the various agencies and public services groups, a plan for a MACC was developed to streamline the rescue process. This central unit housed representatives of most of the major agencies and it should be noted that most of the significant decisions went through this center during the rescue and recovery operations. Since each agency was aware of the other agencies' actions, as well as problems, an integrated response was developed where shared resources were used and each unit helped and received help from the others when in need. Also, many activities that could be accomplished by any of the agencies were efficiently assigned based on current workload numbers. It is important to note that such an integrated center cannot, and would not be successful, if it were set-up spontaneously. It takes careful and well-thought-out pre-planning. The only way a center like the MACC will work efficiently and effectively is if there are good relations and continuous interactions among the various agencies and public service branches in any given city, and a center is planned for prior to a disaster occurring.

The other major tool that was employed was the ICS. This facility is used to manage all personnel and to develop and plot out rescue plans. This system helps to log, track, and maintain an overview of all rescue operations that are occurring simultaneously. The system is also used to plan rescue routes and allocate supplies. The key to success in this system is that it integrates the different rescue units into one single "mega-unit" that helps to increase the productivity of the process.

Lastly, Police Chief Gonzales stressed that one of the most important criteria for having a successful integrated response is well-developed relationships among the various heads of the many branches. The

chief reported that he and Fire Chief Marrs were very good friends, which led to them working together successfully on emergency response delegation and planning. One of the most important factors to this is to have interagency training exercises on a regular basis so that team skills and coordination can be developed and enhanced.

**The following list covers five problematic areas, responses, and recommendations:**

**#1.  Intake and Storage of Donated and Requested Goods:**

One of the major logistical problems that occurred during the rescue effort involved prioritizing and tracking of supplies that were ordered. While there wasn't a problem getting the supplies and equipment needed for the effort, there were major problems with locating and tracking supplies. Multiple staging areas were set up to which supplies were delivered, wherein it exacerbated the logistical headaches. For example, the Red Cross ordered more raincoats, rescue leaders at the scene would have no way of knowing where and when they were delivered, without going to each and every staging station and looking for the supplies and asking volunteers or by searching themselves. Commercial tractor trailers donated for storage of supplies and equipment were literally filled with everything from, football helmets, to wheelbarrows, to doggie foot pads, to search-and-rescue gear. Due to the enormous amount of goods that were donated and to the rate at which supplies were arriving, it could not be verified what was on scene at any given time. Another major problem with inventory control was that different personnel did all the documentation manually, each with his/her own system of recording supplies and equipment. With no electronic tracking system in place, rescuers had to physically go to the staging areas and ask volunteers to rummage through piles upon piles of supplies and equipment, in order to determine if the supplies they requested had been delivered and where they could be picked up. This, obviously, led to significant amounts of time, often delaying the search and rescue effort.

Part of the problem with the staging areas, in addition to their multiple locations and lack of coordinated information sharing, was that each was operated by a different agency---implying differing "ownerships." The Oklahoma City Fire Department set up a staging area that hey thought would be the only location for delivered goods. However, as the day went on, other agencies including the American Red Cross, Feed the Children, and the Oklahoma Highway Patrol, set-up their "own" staging areas in other locations around the Federal Building. Multiple staging areas were thus created and resulted in numerous problems in trying to locate supplies and equipment. When delivery trucks tried to drop off supplies and equipment, they did not know which staging area to bring them to. These problems, combined with a lack of an electronic inventory system, resulted (for example) in supplies intended for the Red Cross being dropped off at the Feed the Children staging area. This further delayed the process of getting much needed supplies and equipment to rescuers. As a result, the rescue effort was slowed considerably, due to the many logistical problems created.

**LESSONS LEARNED / RECOMMENDATIONS:** The logistics behind the intake and storage of supplies and equipment are vital for a rescue effort to be successful. The first lesson learned is that there should be one single computer system keeping track of the entire inventory. This system would incorporate a database that would track the time of arrival and the precise location of each item. While it will be necessary to have different staging areas, linking them through a computer system will solve the problem of not knowing at which staging areas particular supplies are located. The second important lesson is that all supplies and equipment need to be tracked electronically through an inventory

manager. It is crucial that each emergency response plan have an inventory management system set up and ready to be put in action if any event were to occur. This system should track the arrival time and location of each item donated so that rescuers can easily access goods that are needed. Also, a priority system needs to be put into place indicating which items are more important and need to be readily available. This priority system will help streamline the process and allow access to critical and crucial items that the rescue workers need or request. Lastly, all workers need to be trained so that they know how to use the inventory management system.

**#2  Telephone Communications:** One of the major problems that we have witnessed in many disasters involves telephone communication, or the lack thereof. This particular instance was no exception. One of the critical problems was communication among the many different resources and branches of government (police, fire, sheriff's department, EMT, 911, Federal Government, FBI, AT&F, Homeland Security, multiple other cities, States and their Urban Search and Rescue Teams, etc.) One of the main reasons for this problem was that soon after the explosion, telephone lines became jammed. However, unlike the sarin attack in Japan, officials in in Oklahoma City had a list of key contact names and their cell phone numbers. When officials tried to turn to cellular phones to communicate, they soon discovered that these lines were jammed as well. This made communication almost impossible for quite some time. However, the cell phone service provider, Cellular One at the time, (but also known as Ma Bell) came to the rescue. Cellular One donated 1500 fully charged cell phones, pre-programmed, for officials to use during the response. AND, they paid the $4 million dollar bill for the charges to the phones for use during the rescue and recovery phases. Also, Cellular One had in their supply warehouse additional mobile equipment to help increase the cellular system capacity.

**LESSONS LEARNED / RECOMMENDAIONS:**  The key lesson learned is the need to maintain an accurate cellular phone directory of all rescue personnel and officials and staff sop that when a network is jammed after an incident, priority is given to officials' calls as well as to rescue workers. This includes both personal cell phones and work cell phones. A key to achieving this is to include members of cellular phone providers in the disaster planning team. It is also vital to have a prioritization system set up with the local providers to give access to emergency but non-911 calls during post-disaster periods. The reason for this is that a pre-planned agreement is needed in order to effectively execute this service in as little time as possible. Creating these pre-planned agreements is significantly harder now than in the past and they take time, including a lot of "legal eagles" time preparing and approving them. During the time of the OKC bombing, there weren't that many cellular phone companies. The primary one used, Cellular One, now AT&T, would be competing with a half-a-dozen other companies. Therefore, begin the planning now for multiple numbers of agreements.

**#3  Radio Communications:**

Radio communications created another round of problems. In Oklahoma City, the hospitals have had a system for many years known as The Hospital Emergency Administrative Radio (HEAR) System. This system features a common radio frequency shared among the 15 area hospitals to be used during a time of disaster. The main purpose for the system is to provide inter-hospital communication. While the intention of having a system in place is excellent forethought, in reality the system, which is rarely

invoked, had unfortunately seldom been tested. Thus, when it came time for hospitals to use the system, only three of the fifteen area hospitals found their system working. As one would expect, this caused a major operational problem. One of these was determining which hospitals were at capacity and which had room in their ER's. With the HEAR system down and the phones as congested as they were, it took a lengthy amount of time to receive this critical information. As a result, law enforcement officials who were busy with other critical activities, had to travel to hospitals to determine bed availability, thus wasting critical resources. Another major problem with radio communication was the operation of a common frequency. Similar to what happened during Hurricane Floyd, each branch of service was operating on a different radio frequency making shared radio communication very difficult. Thus, it is very important to have a common emergency frequency that each branch can tune into to be able to communicate during a disaster response. Luckily, cell phones were donated and used in this disaster response, thus overcoming the problem.

**LESSONS LEARNED / RECOMMENDATIONS:** A result of the failure of the HEAR system, a test of the communication systems between hospitals is now performed on a daily basis. The lesson to be learned from this is that it is not enough to have an emergency system in place, but rather it is necessary to maintain the system and train personnel through drills.


**#4 The Operation of a Triage Center:**

One of the first centers established after the explosion was a triage center, which was located less than a block from the explosion site. The triage was set p to evaluate patients and classify them based on the nature and severity of their injuries. One of the fortunate aspects of the response was that the Federal Building was close to a dozen hospitals. Thus, according to the disaster plan, different hospitals would be equipped to treat different patients based upon their ER capacity, specializations of their physicians, and proximity to the triage unit. While a sophisticated system was in place, an acute failure resulted. The main reason this system failed is that due to the proximity of the Federal Building to hospitals, over 300 of the 600-plus victims bypassed the triage unit and went directly to hospitals via volunteers, medical transport, or other means. Part of the reason for this failure was that rescue workers were unaware of the center and thus did not inform rescuers about this service. Another reason few went through the triage is that the center was moved many times. At first it was located too far from the Federal Building, causing many to miss it. However, after it was moved closer to the building, another bomb threat was issued. So, it was again moved, this time, further back. However, by this time, over an hour and a half after the initial explosion, most still waiting to see a nurse became frustrated and went directly to a hospital of their choosing. Consequently, many hospitals were over-flowing with patients while others appeared empty while doctors, nurses, and staff stood by waiting on patients to arrive.

**LESSONS LEARNED / RECOMMENDATIONS:** The key lesson learned here is the importance of the triage center. However, in order to use the center to its full potential and effectiveness, it is vital to locate it in an area that is adjacent to the area of the attack. Also, in order to increase its effectiveness, rescue workers need to be telling victims about the triage center and leading them to it. If this is not done, the triage becomes a waste of time and resources. Such malfunction also results in the inefficient use of doctors and nurse because each hospital then has to have a separate intake triage unit set up. All of this greatly detracts from the care the hospitals can provide patients due to inefficient use of resources.

**#5  Accountability of Backup Personnel and Volunteers:**

Another major problem encountered during the Oklahoma City bombing rescue involved management and control of an influx of back-up personnel and volunteers. The disaster centered on a small piece of property in a very fragile state, so the number of rescuers that could enter the building at one time was limited. However, immediately after the explosion, the local media took it upon themselves to issue a call for medical volunteers and personnel at the scene. This call turned out to be a major mistake, resulting in increased, management and coordination of well-meaning volunteers but took certified rescuers away from their primary job. Hundreds of volunteers responded to this call—some coming as far away as California, Arizona, and New York. The presence of volunteers on the scene became a major problem for the Oklahoma City Fire Department. Many became frustrated because they were not given assignments, so—wearing little or no protective gear, they took it upon themselves (the volunteers) to go directly into the Federal Building and tried to rescue trapped victims. This resulted in the Fire Department having to take on additional responsibilities of monitoring safety and removal of medical volunteers from the building thus further distracting them from the primary rescue effort. It was reported that there were more volunteer nurses than victims at the bombsite. Perhaps the true risk of medical volunteers was exemplified when a 36-year old nurse, Rebecca Anderson, attempting to rescue a trapped victim, was hit on the head with a large chunk of concrete that fell from above and killed her. Police Chief Gonzales said the major problem with the response effort was "caring folks of the city who poured out trying to help, but not realizing that many of them were not needed, and in fact, were distracting from the response effort."

**LESSONS LEARNED / RECOMMENDATIONS:** The key lesson to be learned here is the importance of recognizing that "the more is better" phrase is not always true. In order for volunteers to be effective, they need to be trained, organized, managed, supervised, and have a clear objective and assignment in terms of their role in the rescue. In future efforts, it is important to have a staging area to which all volunteers are directed to report at. This did not happen in Oklahoma City and as a result volunteers started to assign themselves. At the staging area, there should also be a place where volunteers can comfortably await their assignments, so they do not get frustrated. It is also necessary to alert the media not to issue unsolicited open calls for medical volunteers. Requests should be made for a certain number of volunteers and these requests should go through hospitals and other local medical authorities. Lastly, just as there is a response procedure and computerized system for EMT and fire responses, it is recommended that volunteer responses be integrated with the incident management system and be taken as seriously as the others.

**Over 350 of the 600-plus employees housed in the Journal Record Building, (including my office and 7 other State Agencies totaling 307 employees) went to a hospital in an ambulance. 289 treated for lacerations needing stiches, 14 treated for fractures or dislocations, 36 treated for head trauma injuries, 21 treated for eye injuries, and 6 treated for burns.**

**A total of 347 persons were treated and released, and 82 persons were hospitalized.**

**160 deaths in Federal Building**

**2 deaths from the Water Resources Building**

**4 deaths from the Athenian Building Restaurant (part of Water Resources Building)**

**2 deaths outside near the blast**

**1 death from a volunteer nurse**

**TOTAL FROM BOMB BLAST= 169**


**Estimated a half-dozen committed suicide in the years following the bombing**