



TOO MANY PATIENTS

Reducing mass-casualty incidents to their most basic elements — more victims than resources — reveals the importance of planning for such events. They're more common than you might think. By S. Christopher Suprun Jr.

We're in the middle of a snowstorm and we're driving northbound in southbound lanes on Interstate 95 to find an accident with a vehicle fire," says Asst. Chief Brian Rooney of the Stafford (Va.) Volunteer Fire Department.

Like a Christmas tree's flashing, sparkling lights, there's a faint reflection of red and white glowing in the air. The vehicle's siren is overshadowed by the pounding of the wipers against the feather-like dust on the windshield as Assistant Chief 2 tries to make it to the accident scene. He sees the car fire approaching, but then he sees something more.

Behind the car fire is an accident that stretches both the mind and the roadway — an accident that is 1½ miles long stops southbound traffic on the Eastern Seaboard's most significant route. "We knew we had something out of the ordinary!" says Rooney.

Revised definition

This accident in February 2001 would have been considered one of the more significant of the year, but it was overshadowed seven months later when terrorists hijacked four airplanes and flew them into the World Trade Center, Pentagon and pastures of Pennsylvania. Still, management of the mass-casualty incident is usually not the result of a terrorist attack or 1½-mile-long pile-up on a major roadway.

mcis can be difficult to manage, and they will certainly be a strain on the local system and the responders. However, a basic five-step approach to scene management allows incident commanders to better handle everything from the simplest mci to the big one.

True mass-casualty events happen when a given event requires more personnel to handle it than are available. For example, many fire departments dispatch a single engine and ambulance to a two-vehicle accident. But if both vehicles in the collision have a driver and passenger and all complain of injury, you quickly have four patients but room for only two in your single transport unit. You have exceeded your system's resources for the most basic rescue call, and you now have a mass-casualty incident.

Who goes in this first ambulance? Does your jurisdiction have a second transport unit that can be dispatched to the scene? Is that

unit even available, or will a neighboring jurisdiction be asked to assist on the event via mutual aid? Having an order and organization to this event ultimately will help answer these questions and, with training, make managing one second nature.

Mass-casualty incidents happen every day, but most of us don't consider them significant. However, how much time and effort goes into deciding how to transport four patients when there's room for only two? Imagine a Friday night bleacher collapse during a high school football game, a bus accident or a terrorist event using any number of weapons of mass destruction.

Primary goals

When we consider firefighting operations or hazmat incidents, it becomes very easy to see the goal. We need to stop the fire, mitigate the hazard or provide for life safety. In mci scenarios our goals are the same, but they also encompass proactive management that doesn't pass the buck. On an mci, the incident commander should have three primary goals.

1] Do the best we can, for the most we can. mcis have one thing in common: too many patients. Because of this, we must do the best we can for the most we can. While this seems counterintuitive, let's look at some typical, everyday responses.

In the northern Virginia suburbs of Washington, D.C., the Prince William County Fire Department will dispatch on a typical cardiac arrest call one ALS medic unit staffed with two medics, one fire engine with three to four EMTs, and one BLS ambulance with two EMTs or another suppression unit if closer. This is an amazing amount of personnel to commit to a single person's resuscitation. In neighboring Fairfax County, you'll lose the second BLS unit, but you will receive an EMS supervisor and have a medic on the engine company. Again, seven to eight people committed to a single cardiac-arrest patient.

This level of response is entirely inappropriate in an mci because circumstances won't allow the same ratio of providers to patients as every other day. With multiple patients hurt from a bus wreck, natural disaster or terrorism event, patients must be categorized quickly, and in a sense ruthlessly, to provide the best chance of survival for the most injured people.

2] Use scarce resources effectively. Very few departments have a significant stockpile of materials for a mass-casualty incident. Whether it's ambulances, personnel or even backboards, material will quickly become scarce in a mci. The second goal of managing a mass-casualty event must be to keep limited materials. It should become second nature that in an mci, ambulances and fire engines committed to the call may be asked to drop their aid bags at the Treatment Sector and then be assigned to another art of the incident. Fire crews without EMS training may be used as porters to move the injured from the scene to treatment areas. Ambulances may be asked to transport patients from on scene treatment to various hospital destinations with the equipment they carry in the unit's various cabinets and shelves.

3] Do not relocate the disaster. Emergency rooms all over the country are inundated by medical complaints and are at near-maximum capacity on many days. What happens when we add an auto accident with 100 or more vehicles? If all these patients were sent to a single hospital, there would be pandemonium.

Control over personnel and patient movement and patient tracking will take a great deal of work and organization to know that each patient was treated and transported and can be accounted for later. The larger the incident is, the greater the logistical nightmare. In any case, it isn't appropriate to dump patients on one or two hospitals. Coordinate hospitals in your area and surrounding communities to obtain bed and treatment space.

The Five Ss

Since the inception of the fire service, we have used mnemonics and other aids to remember the actions to take on various incidents. mcis are no different, and the five Ss can help you remember key points to an mci.

1] Self (or safety). Like on any incident, we must guard against wandering into a situation that requires special consideration. Just as you wouldn't descend the steps of a house into a basement fire without SCBA and turnout gear, mcis require their own consideration as well, especially in the post-Sept. 11 environment. When you respond to an odor at a local agriculture supply store and see people seizing and coughing vigorously, it's not the time to rush in

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unprotected from a product that closely mimics nerve agents in medical presentation.

Rather than continue with an endless list of situational possibilities, it's important for first-arriving officers to ask "What if?" and ensure the safety of their crews. One lesson our service is still learning is the need to make sure we go home safe and sound at the end of the incident or shift.

2] Scene size-up. Size-ups are perhaps the thing we do best in the fire service. Whether it be an accident on the highway or a house fire, the best officers proactively gain information to formulate a plan of action instead of reacting only to the one person with a broken arm who runs up to the fire engine. Size-ups are important and should answer "How bad is it?" and "How much is there?"

The auto accident with two vehicles and four patients is an mci for the town with one ambulance. For larger jurisdictions it might not be a blip on the radar, but what happens when you arrive at the scene of a local farmers' market with damaged booths, produce everywhere, and 63 eventual victims, like the 2003 accident in Santa Monica, Calif.?

If this event will require multiple transport units, where are the routes of ingress and egress? Where will you stage multiple ambulances? If there are multiple critically injured patients apparent, is the weather appropriate for a medevac helicopter? Do you have the space for it to land?

3] Send information. Once information has been developed from the initial officer on the scene, it must get out. The on-scene report

will tell other responders quite a bit about the scene, answering the two questions asked during size-up. This initial information also may be needed to activate any number of agencies.

For example, if hazardous materials are involved, state police or natural resource agencies may be called in to assist with mitigation and cleanup. If it's a terrorism event, local, state and federal law enforcement will need to be contacted in addition to the hazmat teams. Some of these steps may occur through a state disaster coordinator or emergency management office. If activating this office frees you up to save lives, protect property and eliminate the event's hazard, then all the better.

The initial communication of a 10-car pile up with 19 patients, an auto accident involving a tanker truck carrying whatever methyl-ethyl

Triage Needs to START Before MCI Can End

When dealing with patients, field officers should be well-versed in the START method. START stands for Simple Triage and Rapid Treatment.

Developed in California in the early 1980s, the system provides responders with a mechanism by which to assess patients and classify them as critical, delayed, walking wounded or dead with red, yellow, green and black tape.

Using START is simple. It is essentially a linear decision-making tool that uses an assessment of respirations, pulses or perfusion, and mentation or level of consciousness. While the system is simple, it must be practiced to avoid putting too many resources into treating a single patient when dozens are waiting for care.

"START triage is quick and easily understood due to the simple criteria and the color-coding of the categories," says Los Angeles County Fire Department Capt. Dennis Ortiz, vice president of Disaster Management Systems.

You start by addressing a group of patients and asking those who can move to go to a designated area where another provider can start recording who is injured, what injuries they have and confirm that they are "green," or walking wounded.



Individual patients should be assessed by first checking their respiratory status. Those who are not breathing should have their airway repositioned and opened. If the patient begins spontaneous respirations, the patient should be tagged "red," or immediate. If they do not begin breathing on their own, they should be tagged "black," or dead.

If the patient is breathing faster than 30 times per minute, then a red tag is also appropriate, as this may be one of many signs of shock. If the patient is breathing on his or her own, less than 30 times per minute, continue the assessment.

The next check should be of perfusion. Some systems use pulse checks, others use a capil-

lary refill time of less than two seconds. Obviously, cap refill time is not a good indicator in cooler ambient temperatures. Regardless of method, the patient should have a peripheral perfusion check. If present, continue the triage assessment. If perfusion is not present, the patient should be tagged red.

Finally, ask the patient a few appropriate questions to determine mentation status. If the patient answers correctly, the patient is tagged "yellow," or delayed. If not, they are tagged red. This step can have problems because of language barriers and other physical disabilities.

While these steps of respirations, perfusion and mentation may seem like they would take a long time, triage can be effectively completed in about 30 seconds.

Secondary triage follows. This is a full, rapid trauma assessment performed by the most proficient on-scene provider, who will locate specific injuries and confirm the initial assessment of red or yellow. Although this person may perform immediate interventions such as chest decompression, in general he or she will confirm triage status, treat immediately life-threatening injuries and have patients transferred to the appropriate treatment sector.

death they have as cargo, or 14 people at the local court all actively seizing amid a misty cloud during a high-profile trial should raise concern among not only dispatchers but other responders as well. Relaying this information needs to be an early consideration because it can help resources get to you.

Relaying information also can prevent relocating the disaster. Should an event occur with large numbers of victims, inevitably some will leave the scene and head for the nearest hospital before rescuers arrive. Contact the coordinating hospital or the closest hospital to let them know

what is happening and that they may receive self-referrals, tying up your closest resources.

4] Set up medical ics. The Incident Command System, with its common terminology and clear chain of command structures, is ideal for larger events but should not be disregarded in the smaller arenas. An incident has a strong likelihood of turning into a successful operation by establishing command and making some initial decisions. Where should the incident command post be set up? Your size-up — where victims are, where they can be treated and where transport can occur — must be applied to ics set-up.

Donald Trump once said, “You have to think anyway, so why not think big?” This certainly applies to setting up the medical portions of the Incident Command System. ics will help accomplish that by giving specific tasks to incoming units with clear instructions that they will form this component or that of the incident, but it will only be as good as the delegation received. Putting treatment sectors too close together or near a temporary morgue may make sense initially but be problematic shortly.

An ideal first unit to help establish a treatment area might be a paramedic engine company. This engine company’s officer might manage the overall Treatment Sector, while the EMT driver-operator and/or firefighter function as treatment providers in the BLS treatment area and the paramedic is used to treat ALS injuries. By establishing command



Other MCI Elements

Transport Sector. This area is responsible for keeping ambulances and other transport vehicles moving in an orderly fashion. This sector’s officer will often have a recorder to help track patients, their transport unit and eventual destination. Other responsibilities of this sector that may be delegated include staging and landing zones.

Treatment Sector. The area of the scene where more typical treatment is occurring. This area is usually divided between red, yellow and green areas to determine the significance of injury. Teams may be responsible for all on-site treatment of a victim or, particularly with ALS providers, they may be divided into skill teams.

early and setting up the various operational sectors of triage, treatment and transportation, the IC is ready for success in the long run.

At whatever incident you might encounter, if you have available to you 10 EMS-trained fire engines and 10 ALS ambulances for 10 critical and 20 non-critical patients, you may elect to send all the critical patients immediately by ambulance to the most appropriate hospital. Another incident commander might send half of the critical patients by ground ambulance and retain some ALS resources for deterioration of the non-critical patients. Another might take an ALS ambulance out of the rotation to serve as a rehab sector for responder injuries and care. In any of these cases, the incident commander has determined the best use of resources at the time and also knows what each resource is being used to accomplish.

5] Start triage. What do you do with non-EMS-trained firefighters? Assuming there is no fire or hazard mitigation, they should start triage. The truest answer of how many and how bad will come from the triage process.

Having personnel who are not EMS-trained but who understand the basics of triage can be a huge advantage to the IC because a significant problem in triaging patients is the individual provider’s desire to stop the ailment or condition. EMS classes are filled with teaching providers how to treat injury and illness, yet in an MCI the initial course of action is to treat minimally before walking away from the injured to account for how many and how

bad. This isn’t meant to say to avoid treating the seriously injured, but a true accounting of the badly injured versus those with minor injuries will help manage scarce resources.

Additionally, triage should start where you start. (See sidebar, opposite.) The first-arriving unit, upon determining that this will be a MCI event, should consider using the vehicle’s public address system to relocate green patients — the walking wounded — to another location where they can be accounted for, treated and potentially interviewed by police or other investigators.

While not often considered, most MCI events will have some criminal component, whether it be an auto accident that will be investigated by local or state police, an airline crash investigated by the National Transportation Safety Board, or a terrorist attack investigated by the FBI or ATF. These patients may have the key to their case. Patient care should always come first, but if it can occur without hampering criminal investigations, then we are all served.

Planning matters

Mass-casualty incidents have been discussed across entire textbook chapters and a single article can only reinforce key points. There is a clear need for the other components of the medical sector, too. These components include secondary triage, treatment areas, transport and staging areas, and possibly a temporary morgue. These should be included in drills your department runs on MCIs.

MCIs, whether big or small, can no longer be the first ambulance simply taking the closest patient to the closest hospital, and repeating until all the patients are transferred to a doctor. MCIs do not need to be the source of confusion and chaos, but can help us serve many patients while not losing our patience. **[FC]**

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