

A full-scale drill of a Hazmat recovery operation

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INTRODUCTION

In keeping with federal guidelines for disaster-resistant communities, and in light of current threats of terrorism, the Suffolk County (New York) Medical Examiner (ME), in conjunction with the Nassau County ME, conducted a joint drill involving hazardous materials (Hazmat) and mass fatalities on October 11, 2002. The purpose of the drill was to evaluate the response to the forensic aspects of a Hazmat or WMD (weapons of mass destruction) incident (i.e., recovery and identification of the deceased). The drill provided an opportunity for training and evaluating the shortcomings pertaining to care of the deceased and other components of disaster scene management. The drill defined the roles and responsibilities of the members of a forensic response team, and provided details on the preparation of an emergency area, victim assessment, treatment of contaminated victims, and decontamination (Decon) procedures.

SCENARIO

The scenario consisted of a tanker truck carrying chlorine colliding with a passenger bus on a major highway. The tanker ruptures, killing 11 of the 28 people on the bus and contaminating the area and the bodies. Prior to the exercise, it was assumed that all survivors were removed by EMS and fire personnel in Level A protective suits (chemical-resistant suits that include a self-contained breathing apparatus, providing the highest level of respiratory, skin, eye, and mucous membrane protection). According to the scenario, several hours have passed, and emergency responders in appropriate personal protective equipment (PPE) are examining the crime scene evidence and removing the deceased as well as body parts.

The drill was held on a chilly, rainy, windy day at the Suffolk County Fire Rescue Emergency Services facility in Yaphank, NY. Participating in the exercise, as part of a mutual aid effort, were the Suffolk County Police Department, Fire Department, EMS, forensic investigators, odontologists, pathologists, crime lab personnel, officials from North Shore/Long Island Jewish Hospital (which was in charge of demonstrating the Level A suits), as well as members of the Suffolk County and Nassau County Emergency Operating Centers (EOCs). Observers included dentists, emergency responders, forensic nurses from the VA Hospital in Phoenix, AZ, representatives from the Nassau County Police Department, and officials from Westchester County, NY, and Bergen County, NJ. Members of the Forensic Odontology section of the Suffolk County ME office participated as staging managers and assisted in setting up the temporary morgue.

The use of Level B protective suits was demonstrated in the removal of contaminated bodies and clothing after decontamination. The Total Station laser mapping system, which provides computerized mapping of victims, personal belongings, wreckage, and terrain, was used to locate evidence, which was tagged and retrieved by personnel wearing PPE. (The Total Station system is used by the New York State Police and Suffolk County ME in automobile and aviation accidents.)

Practical methods to decontaminate the victims were also explored. Fire rescue and emergency services provided a Decon trailer equipped with nine showers. The hospital provided a Decon tent. It was determined that the tent shower was more appropriate for decontamination of the deceased, while the Decon truck was more suitable for live victims.

Disposition of the deceased's belongings was performed according to a Standard Operating Procedure manual. A unified single numbering system was established prior to the removal of the victims and their belongings from the scene. A scribe accompanied each body through each station in the morgue, recording information pertaining to the identification of the victim as well as evidence. The decontaminated bodies were then brought to the onsite temporary morgue, and an examination and preliminary autopsy questionnaire for each body completed. The bodies were double-bagged, labeled, and transported from the scene.

EVALUATION

At the end of the exercise, a debriefing and critique took place, during which the following issues were raised.

Staging issues. Section leaders did not sign in. Name tags were not displayed. Because there was no way to keep track of who was on-scene and who was off-scene, it was determined that an entry-point log-in/log-out system must be used, and badge holders be given to all participants and observers. Extra stationery and supplies should be available (additional sign-in sheets and binders, waterproof pens and labels, identification badges, and garbage cans were needed).

Communications issues. Early in the drill, radios failed because of the wet weather conditions. An investigation is ongoing to remedy this problem.

Temporary morgue issues. The tent was not sturdy enough and needed heavier metal stakes to withstand heavy winds. Waste disposal was a problem. There were not enough stretchers or backboards for those sustaining neck or back injuries.

Safety issues. A safety officer, preferably someone with knowledge of OSHA regulations, should be present. An ambulance with advanced life-support capability must be on scene for the workers. The guy lines and electric wiring of the temporary morgue were not clearly marked, creating a potential hazard. Also of concern were generator-related issues such as carbon monoxide emissions and the storage of gasoline.

Paperwork issues. A better tracking system for victims was needed, as was a chain of custody form for field transfers.

ICS/EOC issues. The drill did not address the Incident Command System (ICS) and the responsibilities of the Emergency Operations Center (EOC). The EOC is usually activated in full-scale and functional exercises (i.e., officials and support staff assemble at a central site for the activity). The political leadership of the jurisdiction was not involved in the exercise. There is an overall need to define responsibilities to ensure effective operations and management, thereby avoiding confusion.

Hazmat equipment issues. In this incident, more Level A protective suits were needed. ME personnel need better training to respond safely during rescue and recovery operations.

Procedure issues. After drills such as this one, the Standard Operating Procedure manual and resource manual should be upgraded to reflect lessons learned.

CONCLUSION

Emergency preparedness can be achieved only through continued tabletop, functional, and full-scale exercises. Running a full-scale drill allowed us to review established procedures and learn valuable lessons. Inter-agency and inter-county participation is extremely important in mitigation, planning, response, and recovery related to a large-scale incident. The drill also gave participants a chance to network with their counterparts in other areas and encouraged them to shed distrust and territoriality in order to improve organization and communication.

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