

Evaluation in Design of Taipei City Emergency Operations Center

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Abstract

Taipei City Government has implemented the first emergency operation center (EOC) in Taiwan to assist disaster response. The EOC has placed its role in dual functions, that is, providing command and assistance in disaster and communicating inter-hospital cooperation at the usual time. We assessed the infrastructure of the EOC by applying the guidance of the Department of Homeland Security in the United States to understand if the EOC has fulfilled the criteria of EOC set-up. Initial evaluation discloses that two major problems exist, that is, the limited space and incomplete documents (including emergency operation plan). On the other hand, the EOC in Taipei City has dual functions. One is preparing disaster response, and another is inter-hospital communication in transfer patients into those where beds are available. It provides 24-hour inter-hospital communication and information gathering. In two months, they have collected data from 481 mass casualties. The success rate of inter-hospital transfer is reported to increase from 10% to 38% and that of intensive care units even 100%. In summary, Taipei EOC has initial achievements and may lead Taipei City to better disaster response. (*Ann Disaster Med.* 2004;2:60-66)

Key words: EOC; Disaster; Command System

Introduction

The emergency operations center (EOC) is the essential part of disaster response system. The function of EOC includes providing a central point of contact, initial notification, gathering critical information, requests for resources, informing key managers of status, contacting managers for information, media questions, and EOC operations log.¹ In Taiwan, the disaster response system has been limited in the dispatch centers and emergency response centers that were composed and supported mainly by

the Fire Administration. The fully-functioned EOC has not been still well established in Taiwan. However, according to the concept of general management system, an emergency response center under the supervision of the Fire Administration can not afford all of the emergency functions such as medication, food and nutrition and communication. It is therefore so urgent for us to set up an EOC in our disaster response system.

Taipei City government has established an EOC under the supervision of the Bureau of

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Health on December 29th, 2003. Its structure and operations seem different from the EOCs in the United States. We thus tried to analyze the possible differences and possible advantages / disadvantages between them.

Methods

We assessed the website of Homeland Security Department to get the information of EOC organization in the United States.¹ According to the quick reference of Homeland Security Emergency Operations Center, EOC organization in the United States included communication room, meeting room, media briefing room, workplace for individual team representatives. The communication room is reported to consist of a phone bank of more than four dedicated phone lines and a TV/VCR to monitor local news. The room was designed to keep away from the sound from monitored devices to interfere with telephone communications, and is also separated from other functional areas to prevent others from intermeddling in the area. Besides, radio communications monitoring police and other response agency radio traffic was conducted in a specified area. The meeting room should be large enough to allow for seat the maximum number of participants comfortably expected in a meeting. It should account for the participants including the crisis management team, recovery team leaders, and outside representatives. The meeting room is equipped with status boards, wall mounted presentation pads and white boards for tracking the recovery process. EOC staff updates the status boards. Space and connections are available for a television if televised press conferences from other sources may be a part of meetings.

The Media Briefing Room was not within the security perimeter of the rest of the EOC. The briefing room was a controlled access room to ensure that only authorized members of the press has access. The room was configured to support briefings to the media. Facilities will designate parking lot spaces for satellite up-link trucks. Recovery team workspace was available for team representatives co-located in the EOC. Each space has its own separate voice / data lines and power.

EOC equipment and supplies include four main categories such as communications, office supplies, office equipment, and documents. According to Home Security Design, the detailed information of EOC should include 1) activation of EOC; 2) provision of a central contact; 3) initial notification; 4) record inbound/outbound calls; 5) gather critical information; 6) requests for resources; 7) inform key managers of status; 8) contact managers for information; 9) media questions; and 10) EOC operation log. On the other hand, all of the contents for information gathering are included. The EOC function details between the U.S. EOC and Taipei EOC were thus compared.

Results

EOC organization

Taipei City EOC consisted of only two rooms, that is, conference room and information room. The conference room is compatible to the meeting room mentioned above. And the information room possesses the functions of media briefing and communications. The recovery team room was not included in these two rooms and might be arranged in either of them dependent of the needs during crisis. The structure of Taipei EOC is almost compatible with the re-

quirements established by the United States Homeland Security Department. The space of the rooms may be overall slightly limited.

EOC equipment and supplies

As to the requirements of EOC equipment and supplies such as those concerning communications, office supplies, office equipment, and documents, Taipei City EOC has yet lacked complete documents as suggested. As mentioned, the documents included continuity plans, other recovery SOPs, payroll and benefits SOPs, building blueprints (all buildings), electrical schematics (all buildings), area map showing all alternate facilities, local street guide/map, local telephone directories, branch office contact lists, and procedures for installing BCP software.

EOC function guide

The details of Taipei EOC functions include to provide a central role of contact, initial notification, record inbound/outbound calls, gather critical information, receive requests for resources, inform key managers of status, contact managers for information, receive media questions (direct to public information officer). The functions have met the criteria provided by the guidance mentioned above.

According to Homeland Security Department,¹ the EOC support staff acts as a center for response and recovery information. Taipei City EOC had the similar setting of its functions. It provides a critical service during difficult times, and thus call to report injuries, to update the progress in their area, to find a specific leader and to pass along media inquiries. Everything that happens during the response and recovery operations will eventually be recorded

at the EOC. Other EOC functions should include a central role of contact and initial notification. The work include recording inbound/outbound calls, gathering critical information, receiving requests for resources, informing key managers of status, contacting managers for information and receiving media questions (direct to public information officer). As to initial notification, the EOC duty staff will begin the process of notifying key managers of the situation after the activating official notifies. When the duty EOC staff activates the EOC, the EOC staff assumes the responsibility of notifying the remaining key managers. The activating official will provide the EOC staff of the message to give key managers. The EOC staff member will read the message back to the activating official to insure that the information is correct. If the activating official or the EOC staff gets an answering machine, give a brief message explaining the situation and ask them to call the EOC for further information. The activating official will report to the EOC as soon as possible after activation. While in route to the EOC he/she can be contacted on the cellular phone should questions arise. Upon arrival, the activating official will assume responsibility for the functions of the EOC. Initial notification will be logged on the Senior Management Notification Checklist. Place the appropriate contact status code and the time the call was made in the Status and Time Called column. Make room for multiple entries if the initial call is not a "Contact Made". Each call requires a time and status entry.

All calls will be logged on the telephone log sheets. The following information is required on all in and out bound calls: date and time of call, name of person being called, what the call

was about. For inbound calls also include the action taken by the EOC staff member in relation to the call. The initials of the person handling the call must be at the end of the log entry. Emergency or disaster situations can be confusing. Much of the information passed on by telephone is critical to our recovery. Important information could be lost unless all telephone calls are recorded accurately in a logbook. After an emergency it is important to study the actions taken by all participants. We can identify what we did right and what needs to be improved. Most of the actions taken in an emergency are by phone. It is difficult to study our responses without an accurate record of those telephonic actions.

As to requests for resources, recovery and disaster recovery requires many types of resources. Those resources may include people, recovery team members, security, guards, cleaning staff, drivers, temporary employees, supporting vendors, supplies, replacement office supplies, recovery supplies, computer printer paper, Ribbons, etc. , health and safety, food and water, vaccines, sanitary equipment, replacement production equipment, additional production equipment, replacement computer equipment, additional computerequipment, and special recovery equipment. Additionally, the EOC staff must record the resource requests as they come in. That information would be posted on the appropriate Unresolved Issues status boards. The EOC Manager or alternate EOC Manager will deal with critical requests immediately.

The situation can change quickly during recovery or disaster recovery operations. The persons in decision-making positions require the latest information so they can make the best

decisions possible. The managers assigned to carry out the response and recovery tasks need to be informed as soon as possible of changes in those tasks. The EOC staff will monitor the changing situation reports and post the information on the Response/Recovery Situation board. The EOC Manager or his alternative will inform the Recovery Director of critical information as soon as it is received at the EOC. The Crisis Management Team or EOC Manager may require information from specific individuals. The EOC staff would locate the individual and obtain the necessary information. Write down the request and the response in the telephone log since most contact is made by telephone. Be sure to post or update the information on the appropriate Unresolved Issues status boards. Public media such as newspapers, radio, and television reporters may acquire information about the emergency situation. All team members are required to pass along those requests to the EOC.

Discussion

In the United States, when a significant disaster occurs, the first response will occur at the local level with the mobilization of the Emergency Medical System (EMS), police, fire, and other identified responders. Hospitals, medical facilities, and public health agencies will activate their disaster plans; the county or city Emergency Operations Center (EOC) will open; and the American Red Cross and other voluntary agencies will respond. These local activities are mirrored at the state level, where the state EOC will be activated and staffed by state emergency management and representatives from various state agencies (such as public health) and the American Red Cross. Large-

scale disasters, such as might occur with a WMD/T attack, will also result in a response by FEMA and will likely involve activation of the Federal Response Plan (FRP).

This study demonstrated the infrastructure of Taipei EOC and make comparisons between it and that of U.S. EOC. Most of Taipei EOC structure has been comparable with that of the latter. However, some critical information gathering steps still needs further improvement.

The first problem will be the limited space. The EOC is the location from which the key members of the incident command system structure manage overall operations. As with disaster management structures, a variety of forms can be used for EOCs. They are sometimes located near the law enforcement dispatch center or a major public facility.² But the contents of infrastructure may be varied according to the special needs. However, we still believe the space of Taipei EOC may be limited and cannot afford enough area for all ICS staffs.





The second problem will be the lacking of documents including complete emergency operation plan (EOP). The overall success of a local government's response to an emergency will be largely dependent on the quality of the people who will carry out. Most cities and counties in the United States have an EOP.³ The plan will include at least damage control, field control, communications, foods, safety, medical services, student assistances, personal assistances, and other related emergency functions. The famous guide is from Federal Emergency Management Agency.^{4,5} Every kind of coordination plan, training material, and public aids are included. Disaster warning system, as an example, may be also an important function of EOC. People at risk from disasters,

whether natural or human in origin, can take actions that save lives, reduce losses, speed response, and reduce human suffering when they receive accurate warnings in a timely manner. Scientists are developing more accurate and more numerous warnings as they deploy better sensors to measure key variables, employ better dynamic models, and expand their understanding of the causes of disasters. Computers are being programmed to respond to warnings automatically, shutting down or appropriately modifying transportation systems. Current warnings can target those at risk at the county and sub-county level. The technology presently exists to build smart receivers to customize warnings to the users'; local situation, whether at home, at work, outdoors, or in their cars. It should also be possible to customize the information for trucks, trains, boats, and airplanes. The problem is to agree on standards and dissemination systems.

The EOC in Taipei City has dual functions. Besides preparing disaster response, it provides inter-hospital communication in transfer patients into those where beds are available. There are 4 staffs responsible for 24-hour inter-hospital communication and information gathering. In two months, they have collected data from 481 mass casualties. The success rate of inter-hospital transfer is reported to increase from 10% to 38% and that of intensive care units even 100%.⁷ It provides excellent initial achievements. We expect continuous improvement of Taipei EOC. The continuous improvement in software rather than in hardware may be the most important issue for Taipei EOC.

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