



Disaster Preparedness and Emergency Management as a Core Competency in Occupational and Environmental Medicine

The occupational and environmental medicine (OEM) physician has a critical role to play in disaster preparedness and emergency management. This role evolved from the historic involvement of OEM physicians in disaster planning, workforce protection, and prevention of disease and injury. The OEM physician can best carry out this role as a member of a team that includes managers, technical personnel, and emergency responders. The role includes, but is not limited to, protecting the workforce, preserving business continuity, preventing plant- or facility-specific incidents, planning for the mobilization of resources in the event of a community-wide catastrophe, vulnerability assessment, risk communication and collaborating with community resources and authorities, such as public health departments and regulatory agencies.

Since the Industrial Revolution, practitioners of occupational medicine have had to treat the victims of mass casualties and industrial misadventures.¹ The “industrial surgeon” was called upon to manage the consequences of injuries on a mass scale. This expanded the scope of occupational medicine practice and led to a role of the physician in “accident prevention,” which at the time did not carefully distinguish between prevention of individual injuries and mass casualties.* Later, particularly as corporate medical departments were established and expanded in the early 20th Century, the OEM physician became a valuable and effective resource for disaster planning and emergency response.² During World War II, the OEM physician played a valuable and respected role in ensuring safe and secure operation of critical industries. This interest in disaster planning and emergency response continued for some time after the War and remained strong in hazardous industries, where there was renewed interest after significant events like the Bhopal catastrophe. More generally, however, the role of OEM physicians in disaster management declined as it was obscured by the increasing involvement of OEM physicians in disease prevention and health promotion.³

The role of OEM physicians in disaster planning and emergency management abruptly returned to its historic centrality since the tragic events of “9-11” and its aftermath, the anthrax attacks, the SARS outbreak, several highly visible plant incidents, the smallpox vaccination campaign, and the series of natural disasters of 2005 (including Hurricanes Katrina and Rita and the mid-continent tornadoes). OEM physicians are now called upon to act in response to public and management concern over threats from intentional assaults (including terrorism),⁴ unintentional incidents that may result in mass casualties, and natural disasters.³ For many OEM physicians, this is a new function but for most it is a logical extension of their current duties.⁵

The role of OEM physicians in disaster preparedness is distinct from those of safety engineers and risk managers. The role of OEM physicians in emergency management is distinct from those of emergency medicine and emergency management personnel. OEM physicians’ roles in both are complementary, sometimes overlapping, and predicated on the unique value that they are physi-

cians who bring both public health and clinical training to these functions. The OEM physician is well equipped to manage many aspects of disaster planning and emergency management because relevant knowledge and skills are already core competencies in occupational and environmental medicine, including:⁵

- Knowledge of specific threats, including a broad range of chemical, biological, radiological and physical hazards;
- Knowledge of personal protection and other applied approaches to health protection and the skills to evaluate the adequacy of protection at the individual level;
- A systematic approach to monitoring and protecting the health of populations, that is, people in groups;
- A systematic approach to monitoring and protecting the health of workers and other persons at risk, that is, people as individuals;
- Skills in managing behavioral factors associated with the workplace and stressful events;
- Detailed knowledge of individual plants, working populations, communities, and resources within their areas of responsibility;
- Managerial skills and the skills to effect change through policies and management of information;
- Clinical skills and an understanding of appropriate utilization;
- Working knowledge of regulations, regulatory compliance, and the structure of government agencies responsible for health protection at most relevant levels;
- Experience in evaluating individuals for fitness to work, which may be applied in emergency situations;
- Experience in evaluating workplaces for safety and health protection, which may be applied in emergency situations; and
- Expertise in risk management, including risk communication in an emergency.

As both a public health officer for workforces and a clinician charged with protecting workers, the OEM physician is well prepared to work with management and technical personnel at the plant, enterprise or corporate level in preparing for plausible incidents, planning for an effective response, identifying resources that will be required, and advising on their deployment. The OEM physician is generally well-prepared to work with other professionals, including occupational and environmental health nurses, engineers, industrial hygienists, emergency medicine specialists or emergency management professionals, on a team focused on the response to an incident. The OEM physician is not generally a specialist in emergency medicine, an expert in emergency management and incident command or a safety engineer, notwithstanding that many individual OEM physicians do have special expertise in these areas.

The OEM physician can add value to the management of catastrophic consequences in many ways. These include, but are not limited to, the following:

- Survival of key personnel in a catastrophic event;
- Continuity of business following a catastrophic event;

- Instant connectivity to resources for assistance in a health-related emergency;
- Surveillance of the workforce and the early detection of an outbreak;
- Integration of emergency response with public health agencies;
- Surge capacity in the event of a local event requiring mobilization of all available medical resources;
- Vaccination programs and other protective measures;
- Determining when it is safe to reenter a contaminated site; and
- Protection of the health of the entire workforce, addressing prioritized issues, ethics, protective equipment and resources as well as population health interventions.

Adaptation of the existing occupational and environmental health service makes sense for many employers, especially those in critical or hazardous industries. Expanding the mission of the occupational and environmental health service builds new efficiencies into the emergency response system. The same resources used for tracking employees' health can be used for surveillance to detect potential disease outbreaks due to bioterrorism. The technology of hazard identification and measurement can be applied to detect chemical or radiation threats. The medical staff on duty primarily to monitor health and to provide timely clinical care to workers can provide surge capacity to the community in time of crisis. Clinical health services can be applied to keep key personnel on the job and safe, especially when they are moved to new locations or are operating under conditions of stress and extreme risk.

The American College of Occupational and Environmental Medicine (ACOEM) has provided opportunities for its members to learn practical skills in disaster planning and emergency management for decades. Most recently, in 2000, it became among the first specialty organizations to train its members in practical issues in bioterrorism and homeland security and has expanded its coverage of these topics since.

In 2003, leaders within the College developed the Occupational Health Advisory Committee (OH-AC) as a resource for coordinating responses, accessing management resources and sharing information in times of crisis. With the mandate of Homeland Security Presidential Directive 7,⁶ OH-AC is sponsored by the Department of Health and Human Services, within the National Healthcare and Public Health Sector Coordinating Council. OH-AC has developed the Occupational Health Disaster Expert Network (OHDEN) as a support tool for occupational and environmental health professionals faced with the challenge of emergency management. The mission of the OHDEN is to protect the health of the nation's workforce as critical infrastructure necessary to assure survival and continuity of all economic sectors. Its goal is to provide occupational and environmental health professionals with what they need when they need it in time of crisis.

An estimated 125 million Americans go to work every day. At many workplaces, employers and their employees rely on occupational and environmental health providers for health information and care with a focus on the threats, hazards, and injuries unique to workplace organizations. Occupational and environmental health professionals represent a workplace health system with similar, and in some cases, more robust capabilities than the general public health system. In the wake of a series of terrorist actions and natural disasters since the fall of 2001, the demands on and expectations of OEM physicians to play a central role in disaster preparedness and response has

grown dramatically. Their scope of responsibility and the requirements for their expertise and instant response grew from dealing with workplace-specific hazards and injuries to being prepared to confront mass-casualty weapons and other large-scale threats to the workplace. OEM physicians now need to make themselves expert advisors on chemical, biological and radiological threats as well as on naturally occurring disasters including emerging and reemerging infectious diseases.

*Bibliographic research on this topic is difficult because the terms “disaster” and “emergency management” were not commonly used until recently. Prior to 1936, most citations in the Index-Catalogue of the Library of the Surgeon General’s Office, U.S. Army (Army Medical Library) are catalogued under the type of disaster (e.g., “explosions” or “fires”). In the 4th edition (1936) the citations are mostly under “Accident Prevention.” The early Index Medicus series usually categorizes such citations under “Industry and Occupation, Hygiene,” not “Accident, Prevention.” In the 1960s, most Index Medicus citations can be found under “Accidents, Industrial; prevention and control.” Little distinction is made between the topics of preventing mass casualty events and of injury prevention.

References

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- ⁶The White House. Homeland Security Presidential Directive-7: Critical Infrastructure Identification, Prioritization and Protection. December 2003. Available at www.whitehouse.gov/news/releases/2003/12/20031217-5.html.

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