Occupational Medicine in Time of Crisis

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Abstract

Homeland security requires protection of the essential infrastructure that provides and delivers goods and services that supply on-going needs and that maintain the economy. Protecting the workforce, senior managers, and essential personnel is essential, not only to preserve critical industries but to maintain business continuity to prevent severe and prolonged economic disruption. Most large employers have an under-utilized resource available for this purpose. This is the occupational health service, which already serves many compatible functions and houses personnel with many of the requisite skills. Occupational medicine specialists, occupational health nurses, and industrial hygienists have special training on chemical, biological, physical and psychological hazards in the workplace that translate readily to homeland security applications. Developing emergency management capacity within the occupational health service builds on its traditional role in disaster planning and derives a dual benefit from the investment. The leadership organizations in the three professions have taken the lead in developing the Occupational Health and Disaster Expert Network (OHDEN), an Information Sharing and Analysis Center (ISAC) -based network for this purpose.

KEYWORDS: occupational medicine, emergency management, dual benefit, workforce protection, infrastructure protection, business continuity, occupational health

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Introduction

Large employers and many government agencies employ specialized providers in the field of occupational health, mostly physicians, nurses and industrial hygienists. Their primary role in the organization is generally to protect the health of workers, to reduce losses, to enhance productivity, and to ensure compliance with regulation. However, these same professionals have demonstrated capability to protect continuity of production and operations, to manage risks, to assist in the response to a crisis, to increases the chances of survival of the enterprise, and to protect the workforce and key personnel within the workforce. Occupational health professionals have played a major role in disaster planning before, especially in high-risk industries, and have the skills and training to do so again. They are already trained to a level of some sophistication in work-related chemical, biological, physical, and psychological hazards. This article describes this underutilized asset and how it can be used effectively in homeland security and emergency management.

Homeland security requires measures to protect the infrastructure of the country that keeps necessary goods and services available during a crisis and that supports the economy so that recovery can follow. This infrastructure includes: vital resources, such as food, water and medical care; transportation services; communications; energy supplies; public services, such as police and fire protection; public health; financial services, such as banking, credit, and payroll; manufacturing capacity; construction; and government. Interruptions in these services threaten the fabric of society as well as cause injury to those directly affected, because such disruptions deprive the affected community of badly needed resources in the short term and the ability to rebuild and recover in the long term. (Hogan, 2002) More vulnerable parts of the national economic infrastructure risk becoming targets, as illustrated by the attack on the World Trade Center, which was a major concentration of financial services.

For this reason, governments, as well as corporations and other large institutions, have become deeply concerned with business continuity of operations and the protection of their enterprise’s own infrastructure. They realize that continuity of operations is not only a matter of survival for the enterprise but also for those who depend on the product or services they provide, for the workers who depend on them for their income, and for the local and potentially the national economy. They are also concerned about reducing exposure to liability and potential loss when faced with a crisis.

A critical part of the infrastructure of any enterprise is the people who work in that enterprise, particularly those with experience and those who occupy key production jobs. Workforce protection is therefore a critical part of infrastructure protection. The workers in any critical or highly visible enterprise are at risk for attack and may become targets themselves. Critical or highly visible enterprises must therefore be concerned about the security of their personnel. For both reasons, enterprises have had to reexamine workforce protection since “9/11” and the anthrax assaults. (McLellan, Deitchman, 2003)

Assets in Place

Fortunately, most large enterprises, whether businesses, private-sector institutions or government agencies, already have a substantial resource available: their occupational
health services. This means that in most large operations, the essentials are already in
place in most large operations to monitor the health of workers, document their health
and capacity to work, evaluate hazards, respond to emergencies and plan for and respond
to emergencies. (Hudson, Roberts, 2003) Their general duties are outlined in Table 1.
(Emmett, 1996; Guidotti et al., 1989)

Table 1. The core functions of an occupational health service.

1. Acute care for injured employees on site.
2. Monitoring care given off site.
3. Preplacement (“post offer”) evaluations that assess fitness to work.
4. Assessing functional capacity to do the job.
5. Assessing need for accommodation under the Americans with Disabilities Act.
6. Functional evaluation of employees after hire.
7. Fitness-to-work evaluations that assess the recovery and functional capacity of injured employees to return to work and what accommodations may be needed.
8. Impairment evaluation for injured workers who are the subject of workers’ compensation claims.
9. Certification of time off work for workers with a nonoccupational illness or injury.
11. Periodic health surveillance of employees exposed to a particular hazard such as noise, chemicals, dusts, or radiation. (This often takes the form of a medical examination, often conducted annually.)
12. Investigation of exceptional hazards, disease outbreaks, unusual injuries, fatalities or other emerging issues.
13. Prevention, health promotion and educational programs designed to enhance the health of employees and to increase productivity.
14. Management of the health problems of employees on site, to reduce absence and disability.
15. Advice and consultation to management on issues of health, health and workers’ compensation insurance and regulatory issues in occupational health.
16. Disaster planning and emergency management on site.
17. External communications on health issues, as with local public health agencies and local physicians.
18. Managing relations between the organization and local hospitals and the medical community.
19. Employee assistance programs, for employees with problems involving alcohol and drug abuse or other addictive behaviors, such as gambling, that interfere with work.
20. Executive wellness programs, such as special medical evaluations or monitoring health problems among senior executives.
Larger and more complex organizations may also involve the occupational physician in managing environmental risks, product safety, contracting for health services, representing the organization in industry-wide health activities and proactive programs for preparedness, risk management and other senior management functions.

Occupational health services have existed for centuries in high-risk industries such as mining and manufacturing and for over a century in other sectors of the economy such as services. Originally, these facilities were created to treat injuries that occurred on the job and diseases arising from workplace hazards and conditions. Later, the emphasis shifted to preventing injuries and illnesses and to supporting the productivity of the workforce. Occupational health services are most familiar in the form of corporate medical departments and in the setting of plant medical clinics.

A corporate occupational health service is usually led by a physician with training or who gains experience on the job in occupational medicine. The corporate medical director serves as a traveling troubleshooter, in-house resource on health issues and auditor for health affairs. In recent years, there has been a general trend toward outsourcing occupational health under contract and increasing use of consultants. However, this trend may be reversing as employers find it to their benefit to have in-house expertise intimately familiar with the operations and mission of the organization.

In a plant or local site, such medical services usually include at least one occupational health nurse (also a professional specialization), an occupational physician (typically on a contract managed by a corporate medical department) and support staff. In many, and in all of the best ones, there is a close reporting and consultative relationship with the plant manager and senior executives, especially in human resources. There are other occupational health professionals, in particular industrial hygienists and safety officers.

Community-based occupational health services usually take the form of clinics or small consultancies, usually physicians or hygienists. In this format, employers usually contract just for the services they need and the healthcare provider serves several local employers. Community-based occupational health professionals may offer services that are very useful in an emergency, such as expertise on toxic hazards, biological threats, when it is safe to reenter a location, appropriate medical surveillance for workers, recommended policies, and appropriate post-event psychological interventions.

Major occupational health consultants serve national corporations, usually on a case-by-case or problem-by-problem basis. They are useful for advice and serve as clearinghouses to benchmark response and to learn what other employers are doing about the problem.

The occupational health professions may be less familiar to emergency management professionals than other healthcare specialties. They are very old and in the United States were shaped largely by critical industries where the risk of injury and disease was historically high, such as mining, chemical manufacturing, and railroads. Disaster planning and emergency preparedness were a recognized part of their duties from the beginning. Occupational medicine is one of medicine’s oldest recognized specialties, with antecedents dating to ancient times, a specialized body of knowledge codified since 1700, and formal recognition as a specialty in the United States since 1955. Occupational health nursing is a specialized field of nursing dating to the nineteenth
century, particularly valued for the professional autonomy it gave to nurses. Industrial hygiene shares ancient roots with occupational medicine and has its own origins in the late Middle Ages; in the twentieth century, it became a specialized profession dedicated to the anticipation, recognition, evaluation and control of occupational hazards. Over time, the occupational health professions have become well organized. Each has its own associations, credentials, and certification pathways to ensure professional competence. In recent decades, as jobs in industry have generally become less hazardous, the emphasis in their mission shifted from response and disaster planning to prevention, promotion of health, and enhancing productivity. It is now time to shift back and to find a balance that includes a renewed role in emergency management.

Adapting the Mission

The imperatives of corporate security and homeland defense have expanded the mission of occupational medicine and restored its historic involvement in emergency management at the enterprise and site levels. The usual functions of an occupational physicians working in a corporate medical department have traditionally been clustered in a few broad missions: to protect health, to support productivity, to reduce loss and liability, to manage health affairs and to ensure compliance with regulations and best practice for the industry. The non-emergency functions of the occupational physician came to be viewed as support functions that were not part of the core business of the organization. These functions were subject to outsourcing throughout the private and government sectors during the 1980’s and 1990’s.

Although emergency preparedness and disaster planning has always been part of the job description, they assumed lesser importance in recent years as industries generally became safer, although sporadic, highly visible industrial incidents (most famously Bhopal but also numerous lesser incidents) often restored this key function to primacy in individual enterprises. (Haddow, 2003; Guidotti, 1986) The role of the occupational physician is now more widely recognized for its potential to contribute to the survival of the enterprise, not just its recovery from a temporary setback or to support its efficient operation.

Well-trained occupational physicians play a major role in managing the consequences of widespread disruption of business operations due to major threats and of protecting the business, the product and the brand against catastrophe in cases in which a company’s products, facilities or operations are used to deliver a threat or as targets for terrorist activity. These may include, but are certainly not limited to, sending infectious material through the mail to company personnel, using company equipment (such as airplanes or, potentially, chemical plants or storage facilities) as instruments of assault and managing the psychological consequences of an assault. Similarly, the occupational physician has been called upon to manage the corporate response to serious health-related issues, such as travel to areas in which SARS and other emerging infections are a risk, rapid investigation of suspicious outbreaks of disease or following exposure to potential hazards, and determining when reentry and reoccupancy is possible in contaminated facilities, such as post office facilities contaminated with anthrax.

These functions build on the traditional involvement of physicians in disaster planning, as well as health protection for employees. Disaster planning has traditionally
been one of the core functions of the medical department and of occupational physicians in corporate settings. The physician has usually assumed responsibility within the organization for planning the medical response to emergencies, identifying facilities and resources for dealing with serious injuries and mass casualties and providing health protection for key personnel if required. Although outsourcing has reduced the direct involvement of occupational physicians in planning emergency management in many organizations, particularly in the service sector, this function has not been completely replaced by external consultants because it requires a practitioner with intimate knowledge of the operations, hazards, workforce and policies of the organization.

The occupational physician can also add value to the management of catastrophic consequences in other ways. These include 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.

To perform these duties effectively requires that time be dedicated for preparedness activities, that an occupational health service be structured for the mission and that providers be trained. However, it is costly and inefficient for even large corporations to dedicate a full staff and support structure for the management of an event that may or may not materialize. This is why adaptation of the existing occupational health service makes sense for many employers, especially those in critical or hazardous industries.

Expanding the mission of the occupational health service builds efficiencies into the emergency response system that it would not otherwise have. The same systems used for tracking employees’ health can be used for surveillance to detect potential disease outbreaks due to bioterrorism. Absence tracking and on-site medical services may readily pick up evidence for an outbreak relatively early. The technology of hazard identification and measurement can be applied to detect chemical or radiation threats: industrial hygienists, especially, can detect hazards beyond the chemical agents they usually monitor. The medical staff on duty primarily to monitor health and to provide timely clinical care can provide surge capacity in time of crisis. For example, if there is an emergency in the community or plant, the routine preplacement and fitness-to-work evaluations get traded for acute care, trauma stabilization, and triage.

Health protection for senior executives and essential personnel can keep key people on the job and safe in an emergency. In any organization, a limited number of people have the experience and knowledge needed to ensure business continuity. An occupational health service that is already tracking their health through an executive health program will know their health needs when they are moved to new locations or are operating under conditions of stress and potential risk.

The skills that are normally applied to ensuring a safe workplace can be used to determine when it is acceptable to return to work or to venture into a facility that has
been contaminated or damaged. Assessing the safety of reentry is not much different from evaluating a conventional health hazard.

Planning for foreseeable industrial disasters can also inform and refine the response to unforeseen threats, given that sophisticated disaster planning is a matter of identifying resources and contingencies, not deriving detailed plans for single-threat incidents. For example, an occupational health service trained in airborne hazards will not find it a stretch to understand the potential delivery of a pathogen through the ventilation system of a building.

Perhaps most attractive to cost-conscious managers is the notion that the investment is not “lost” if an event never occurs. If the emergency management capacity is developed within an occupational health service, the same systems support and enhance the traditional occupational health services that industry and government employees require. Combining the two may lead to cost savings, increased productivity and reduced liability in their own right.

Preparing for the Mission

Conscious of their responsibility, and aware of their own position on the firing line along with the employees and executives they protect, occupational physicians have been preparing themselves for an expanded role in emergency management. The principal specialty organization, the American College of Occupational and Environmental Medicine (ACOEM), has for some time offered training in the characteristics of weapons of mass destruction (well before 9/11 and the anthrax assaults), emerging infections (particularly using the model of SARS), “tabletop” exercises to train participants in emergency management and recovery management for disasters and mass casualties. Immediately following the tragedy of 9/11, an ACOEM task force produced a guide to the management of mental health issues among survivors of mass assaults, disseminated it to all members and posted it on the College website – all within four days. This achievement was unique and widely admired among medical specialty organizations.

In 2003, leaders within the College, in collaboration with the American Association of Occupational Health Nurses and the American Industrial Hygiene Association, developed a coordinating body to develop an organized platform for occupational health professionals engaged in homeland security and emergency management. The emphasis was to be sharing information and benchmarking against best practices and the model was the response to SARS, which was a particularly influential experience for corporate medical directors.

The Occupational Health Coordinating Group (OH-CG), now the Occupational Health Sub-Council (OH-SC), is a resource for coordinating responses, accessing management resources and sharing information in times of crisis. It includes physicians, occupational health nurses and industrial hygienists and will be expanded shortly to other occupational health professionals. The OH-CG is a working council, sponsored by the Department of Health and Human Services, within the National Healthcare and Public Health Sector Coordinating Council, the health-sector ISAC (Information Sharing and Analysis Center) organization. (ISACs are sector-specific preparedness organizations recognized by the Department of Homeland Security for “information sharing and
coordination"). Notwithstanding the placement, the OH-CG cuts across industry sectors and is not focused on healthcare facilities and hospitals. ISACs have been formed, for example, in industry sectors such as critical utilities and transportation and a goal of the OH-CG is to serve as a resource for human resources protection across critical sectors. Its mission is to provide occupational health professionals with what they need in times of crisis, through channels that do not depend on any one mode of communication.

How might an organization prepare its occupational health department to respond on a large scale in a crisis? Partly, the answer is to build an effective and efficient team. Teamwork comes from training and planning but also from regular personal contact and cooperation. A team that functions well in the complex duties of an occupational health services and that already knows the operations, workforce and facilities is more likely to function well in an emergency than an outside provider – who may not be around in a crisis.

Another part of the answer is to build information systems that work well and that can be used to retrieve quickly critical information on hazards, disease or injury patterns and individual health records. Occupational health systems may require upgrading to do this effectively but the technology is readily available.

Acquiring the necessary expertise is obvious. The occupational health staff may require special training to take on the additional functions but this is not really a departure from current duties. For example, ACOEM routinely, at its major meetings, provides continuing education on bioterrorism, chemical threats, and emergency management, alongside its usual offerings on toxicology, musculoskeletal disorders, workers’ compensation, and much else.

Establishing networks and agreements for mutual assistance may be critical. Here the occupational health staff can coordinate arrangements with local hospitals, specialist practitioners, public health agencies and first responders in advance and maintain personal relationships required for smooth operation in the event of a crisis.

Facilities planning may be required, taking into account the characteristics of the site, for evacuation, securing the premises but preserving access for ambulances and first responders, defining areas of the plant for operational response (for example, for staging rescue operations, triage, stabilizing casualties, decontamination, sheltering in place, and “incident command” activities). Even locations without special hazards may benefit from such contingency planning in the event of an external threat. For example, the first anthrax assault was in the office of a newspaper, not normally a high-risk location.

Surge capacity, the ability to accommodate an extreme but transient workload, may be projected under various contingencies, whether to call in help for managing mass casualties on sites (especially if local hospitals are not functioning or cannot be reached), to assist other units in a mutual assistance pact or to perform services such as mass immunizations.

Certain routine functions can be anticipated and planned for. For example, if anthrax or some other threat is suspected in the mailroom, procedures (in the case of anthrax, quite simple) can be put in place in advance to protect employees, limit disruption and rapidly evaluate evolving situations. This last function is particularly important to deter inevitable hoaxes and to prevent disruptions to business from ill-defined or unknown hazards. For example, the common scenario of an unknown “white powder” appearing on a loading dock or in an office can shut down operations for a day.
or more until a toxic substance is ruled out. Having the capacity on hand to show that it is harmless saves time and anxiety. Likewise, dealing with panic among employees from rumors or incidental illness occurring at the worksite requires skill in rapid assessment and in risk communication. However, it can save an enterprise from devastating loss of confidence and the potential loss from employees who may refuse to come to work.

An enterprise may be in a position to control its liability and potential loss from claims following a disaster by developing a flexible, effective emergency management capability within its occupational health services. Reducing actual loss through planning and effective management of recovery and mitigation of the consequences is most important. Such an enterprise would also be able to show after the fact that it had done its due diligence in anticipating and preparing for plausible threats. This could reduce its exposure for punitive awards or claims based on negligence or omission. Without presuming to offer a legal opinion, it seems reasonable that a company that is seen to be prepared is less likely to be accused after the fact of ignoring a threat.

**Conclusion**

In the classic business model, the priorities of corporate management are shareholder value and profitability, continuity of production and operations, and loss control and risk management, in that order. (For government agencies, there is a similar set of priorities with the mission of the agency coming first.) However, in times of crisis, survival of the enterprise and protection of people take precedence over profitability and productivity. In the past, occupational medicine and occupational health services have always been perceived as support functions, facilitating management priorities but not a core business priority. In the new era of threats to survival and business continuity, the occupational health service professionals may play a role in the survival of the enterprise and its people. A wise organization, faced with an extraordinary threat, may look within to build its salvation on a functioning system that already serves its interests.
References


