# Mobilizing Professional Communities

John G. Bartlett, MD[a]

Medical providers play an important role in planning for bioterrorism but have been reluctant participants in most of the planning. The purpose of this review is to summarize the role of practicing medical professionals for bioterrorism defense, identify the reasons for reluctance to participate in the planning process, and suggest methods that would correct the perceived deficits. The emphasis is on physicians because of the importance of their role and because this is the population with which I have the greatest experience.

## WHY DO PHYSICIANS REJECT PARTICIPATION?

There is widespread planning for a bioterrorist event with substantial federal and state funding and wide acknowledgement of the critical role of the community of practicing physicians as well as other health professionals in the private sector for mounting an effective response. Nevertheless, there has been substantial reluctance on the part of physicians in both practice and in academic medical centers to participate. The reasons for this are complex.

Perhaps the most important single factor is the lack of funding that targets medical professionals in either the private sector or academia. Thus, as noted, there is substantial funding for the planning process, but nearly all of this targets public health personnel, an antibiotic/vaccine arsenal, and research. Specifically, there is virtually no line item with an allocation of support for participation by practicing physicians. This represents an important disconnect that needs to be solved in view of the critical role that these health professionals will play.

The medical profession is now facing what many perceive to be a crisis that threatens the survival of hospitals, health systems, and academic centers. At present, one third of hospitals in Maryland are operating with deficits, some of the best academic centers are experiencing huge debts, and several large health systems are also in serious financial trouble. Much of the current problem can be ascribed to the changes in health care economics associated with

[a]Division of Infectious Diseases, Department of Medicine, Johns Hopkins School of Medicine and Center for Civilian Biodefense Strategies, Johns Hopkins University, Baltimore, MD

Address correspondence to: John G. Bartlett, MD, Director, Division of Infectious Diseases, Johns Hopkins School of Medicine and Center for Civilian Biodefense Strategies, Johns Hopkins University, 1830 Monument Street, Room 439, Baltimore, MD 21205; tel. 410-955-7634; fax 410-955-7889; e-mail <jb@jhmi.edu>.

© 2001 Association of Schools of Public Health

managed care. With respect to the individual practitioner, a representative primary care physician has reported the following typical daily schedule: one return visit at 15-minute intervals for 7.5 hours a day, five days a week for a total of 30 scheduled patients a day or 150 patients a week. The schedule is made up three months in advance; any missed time, such as that spent at committee meetings, must be made up; and any scheduled conferences or meetings must be planned more than three months in advance or rescheduling of patients will be required. It is easy to see that it will be difficult to elicit the participation of practicing physicians in any planning process with the ardor of this routine.

Another problem is the perception that this is a low-probability event. Bioterrorism is generally viewed as probable at the national level but relatively unlikely at the local level. This means that a bioterrorism event should be anticipated in the United States, but the probability of this event at any specific location is relatively low. Faced with the economic crisis mentioned previously, most administrators in academic centers and the private sector would be forced to conclude that the low probability of this event in the face of competing priorities for economic survival does not warrant allocation of internal funds and time for planning.

Additional issues for the practitioner concern the fact that most are not trained to do this. Physicians in practice have allocated the highest priority to individual patients, which is appropriate. However, it means that planning for management of large populations is not something that they want to do, are trained to do, are paid to do, or are expected to do. In terms of competing priorities, there is the extraordinary work schedule combined with what might be called an information avalanche in reference to new medical information that directly impacts practice, such as new drugs, new laboratory tests, new management strategies, and new health maintenance organization rules. It is not clear that the situation is much different in academic medicine, where the competing priorities are somewhat different but equally demanding. Bioterrorism has not reached a high priority in the vast majority of medical centers in terms of the medical school curriculum, resident training programs, or biomedical research agenda.

A conclusion regarding the issue of participation of health care professionals in the private sector is that bioterrorism has not been deemed a substantial priority in either the private sector or academic medicine. This applies to most health care systems and most academic centers. The reasons are complex but largely can be ascribed to a lack of targeted funding and competing priorities.

## THE ROLE OF THE HEALTH CARE PROFESSIONAL

The private sector is viewed as a critical component of bioterrorism defense with two primary responsibilities: (a) detection of a possible event and (b) the field force for medical management of sick patients and application of preventive measures.

The potential role for detection is illustrated by the experience with West Nile virus in New York City. On August 23, 1999, Dr. D. Asmis at Queens Hospital was disturbed by two cases of unexplained weakness and possible encephalitis. This information was reported to Dr. M. Layton, who then established the medical surveillance that eventually defined 62 cases of West Nile virus encephalitis in New York City. This experience nicely illustrates the potential role of the practicing physician for detection. It does not illustrate the role of the medical profession for applying specific therapy, playing an important role for prophylaxis, or establishing strategies to prevent transmission, because there is no specific antimicrobial treatment, no vaccine or antibiotic for prophylaxis, and no person-to-person transmission. Nevertheless, these could have been essential components to the epidemic with another pathogen, including nearly all that are on the current bioterrorism priority list.

Emphasis has traditionally been placed on detection of a bioterrorism event when there is a large number of unusual, severe, or unexplained serious illnesses in a relatively large number of patients. However, it is also likely that the event will be far more subtle or distributed to multiple offices or emergency rooms, making recognition of a single case important. With regard to the clinician, it should be emphasized that diseases that have clinical features of an infectious disease that are serious or life threatening to previously healthy, young adults are rare. Possible exceptions are toxic shock syndrome, *Neisseria meningitidis* bacteremia, and Rocky Mountain spotted fever. Pneumonia is the most common cause of death from infectious disease, but life-threatening pneumonia in young, otherwise healthy adults is extremely rare. Epidemics of influenza are common, but influenza in the off-season is a reason to be suspicious. Conditions that specifically suggest class A bioterrorism pathogens include the wide mediastinum of anthrax, the vesicular rash of smallpox (which can be confused with varicella but little else), and the capillary leak associated with viral hemorrhagic fever (which could conceivably be

confused with dengue, not currently problematic in the United States). Laboratory indicators of possible bioterrorism are pathogens that "never" occur in the United States, including inhalation anthrax, smallpox, glanders, and hemorrhagic fevers. Other possible indicators are tularemia or plague in nonendemic areas. These are some of the indicators to which physicians and microbiologists should be alert as possible indicators of a bioterrorism event. These professionals must also be aware of the steps that are appropriate to pursue in terms of diagnostic studies and alerting appropriate officials.

With regard to the health care response, the private sector is seen as critical because this represents the lion's share of health care providers with the appropriate training, legal responsibility, and credibility for this function. Public health officials play an important role but certainly not as practitioners of medicine. Further, this medical care will probably be delivered at the local level and preferably by the local medical community. Thus, medical care practitioners need to be participants in the planning process. Prophylaxis will depend on the agent and the distribution, but it is likely that many thousands of patients will need to receive prophylactic antibiotics or vaccines. Physicians and health care systems are essential for both planning and implementing these strategies.

It is important to emphasize the need for collaborative interaction between public health officials and the practice community with appropriate definition of respective roles. Public health officials are critical for planning. The practice community is critical for event recognition and medical management.

## METHODS TO ENGAGE PHYSICIANS

### Relevance

As noted, there has been substantial reluctance by the medical care professionals to become involved in bioterrorism planning despite their critical role in event recognition and medical management. Bioterrorism is viewed as a low-probability event. One method to enhance relevance is to recognize this planning as applicable to other medical events such as influenza epidemics. Managed care has substantially limited the elasticity of the medical care system. Although there are many empty hospital beds, most do not have staffing or potential for staffing so they are simply not available. Availability of nurses, pharmacists, and other members of the health care team is also at crisis levels. The implication is that appropriate staffing and available beds are sharply limited. This squeeze has been felt in recent years. In Baltimore, for example, the influenza epidemic for the 1999–2000 influenza season resulted in "red alert" in 19 of 22 regional hospitals, meaning a severe compromise in bed availability. A similar situation was experienced in Los Angeles and probably many other cities. One method to enhance enthusiasm for bioterrorism planning is to promote its potential relevance for dealing with influenza or another epidemic disease.

### Credibility

Physicians are highly influenced by peers and the hierarchy within the professional ranks. Thus, endorsement of the importance of this message by leaders in the field is very important. An example is Dr. D. A. Henderson, winner of the Lasker Award and clearly a thought leader in American medicine. His involvement in bioterrorism planning has substantial impact on physician buy-in because of his stature in the field. The same applies to many others. In addition, this needs to be a priority by chiefs of medicine in both the private sector and academic centers. Emphasis by state and local health departments may impact the physicians and public health officials who work for them, but it is unlikely to have an important impact on most practicing physicians and most in academic medicine.

### Professional Societies

Most physicians have great loyalty to their professional societies and view this as a major resource for facilitating their interests and promoting relevant education. These societies are an extraordinary opportunity for physician involvement, and most are now adopting this issue as a priority, although the level of activity is highly variable depending on the society. Perhaps the most relevant societies are the American College of Emergency Physicians (ACEP), Infectious Diseases Society of America (IDSA), Society for Hospital Epidemiology of America (SHEA), American Society of Microbiology (ASM), and some of the primary care societies, including the American College of Physicians/Internal Medicine Society of America. In terms of specific roles of these societies, the IDSA provides some good examples because the planning is quite mature. This society has an Emerging Infection Committee headed by Dr. Michael Osterholm with a subcommittee on bioterrorism led by Dr. D. A. Henderson. This committee is responsible for orchestrating society planning for bioterrorism, including (a) education material for society members in concert with the Centers for Disease Control and Prevention (CDC), SHEA, and state health departments; (b) the society journal, *Clinical Infectious Diseases,* which has a section devoted

to bioterrorism under the editorial supervision of Drs. T. Inglesby, T. O'Toole, and D. A. Henderson; (c) the annual meeting, which has a symposium or lectures dealing with bioterrorism; (d) cosponsorship of this conference; (e) involvement in multiple guidelines, which include reference to bioterrorism when relevant; and (f) a "white paper," currently in draft form, that expresses outrage regarding use of microbes to wage war. An additional important component of IDSA activities relevant to this issue is the Emerging Infection Network under the supervision of Dr. Larry Strausbaugh. This is funded as a CDC Cooperative Agreement, currently in its fourth year with a membership of 900 infectious diseases-trained physicians who represent a "field force" for bioterrorism detection and management. It should be noted that other societies mentioned have also been active participants in educating their members about the relevant issues.

**Efficiency**

It is well known that the best medical learning by practitioners is through cases that require implementation of management strategies. This is not easily done with bioterrorism, and it seems unlikely that the specific application of information will be readily digested through the usual medical education resources, such as lectures and articles. Nevertheless, a potentially unique opportunity may now be available through medical guidance using handheld devices at the point of care. This means that devices such as a Palm Pilot may be used to define the specific clinical findings that suggest bioterrorism, the method to respond, and guidelines for medical management, including treatment and prophylaxis. The implication is that the guidance that has been provided by the multiple documents from the Center for Bioterrorism Defense dealing with individual patients can easily be translated to information for application at the point of care.

**Center for Civilian Biodefense**

The Johns Hopkins Center for Civilian Biodefense, sponsor of the Conference on Bioterrorism, has an agenda that includes education and training of medical practitioners through several mechanisms, including:

1. A quarterly newsletter that is mailed without charge to 1,200 (available simply by contacting the center).
2. A web site on bioterrorism, which shows the following statistics for 11 months of 2000: 1.5 million hits, 67,000 visitor sessions, 23,000 unique visitors, and an average visitor session of 20 minutes.
3. Bioterrorism guidelines by pathogen, including completed manuscripts on anthrax, smallpox, plague, and botulism.
4. Reviews on issues regarding bioterrorism that have been published in *Science, Lancet, Journal of the American Medical Association, Clinical Infectious Diseases, New England Journal of Medicine,* and *Journal of Emerging Infections.*
5. Lectures to various groups, including medical practitioners, estimated at 250 to 300 each year.
6. Special conferences, including a national conference on hospital response and regional conferences with cosponsorship by the CDC.

**Carrot or Stick**

The other method to elicit physician participation is by providing appropriate reward or punishment. Bioterrorism planning can be made a contingency for Joint Commission on Accreditation of Healthcare Organizations approval, a highly motivating requirement. On the reward side, there is a need to recognize that this is sufficiently important to be included in physicians' job descriptions and their salaries adjusted accordingly. This is not for all physicians, only those who will play key roles. Funding for this probably will not come from the budgets of hospitals, health care systems, or academic centers because they cannot afford it. Bioterrorism should also be included on relevant board and recertification exams. The notion that educational offerings by a state health department or other agency will be well attended by key physicians with volunteer time is plain folly. The problem is relative priorities and time constraints.

## CONCLUSIONS

Medical professionals from the private sector and academic medicine have been relatively reluctant participants in biodefense planning. The problem is seen as multifactorial but is in large part ascribed to funding primarily allocated to the public sector with almost no targeted funds to the private sector. The role of medical practitioners from the private sector is twofold: recognition of an event and providing the work force for management of the sick and susceptible. Lack of participation in bioterrorism planning by this group is largely ascribed to failure to recognize their relevance, failure to allocate resources to support this activity, and a perception by practitioners that this is a low-probability event at a time when there are extraordinary demands on their time. To obtain support from this critical segment, it is necessary to appreciate the

deficits with current planning. With regard to physician participation, it is critical for those who map these strategies to recognize the idiosyncrasies of the medical profession, including understanding of the extraordinary demands on time, potential importance of respected peers, role of medical societies, potential value of an efficient method to guide medical care as with point-of-care decision tools, and need for a carrot, stick, or both to achieve these goals.

## RESOURCES

***Clinical Infectious Diseases***
http://www.journals.uchicago.edu/CID/
Official Publication of the Infectious Diseases Society of America
*Confronting Biological Weapons*
Donald A. Henderson, Thomas V. Inglesby, Jr., Tara O'Toole
*Current News and Events*
Michael T. Osterholm

***Emerging Infections***
Larry J. Strausbaugh
Emerging Infection Network
*Chair:* Larry Strausbaugh
*Funding:* CDC Coop Agreement
*Duration:* 4 years
*Membership:* 900 ID physicians
*Role:* Report observations via fax and internet
*Example:* W-135 memingococcal meninigitis, Saudi Arabia, 3 cases

***Center For Civilian Biodefense***
*Quarterly Newsletter* (1200 subscribers)
Website
*Publications*

- Pathogens: Anthrax, Smallpox, Plaque, Botulism
- Reviews: Science, Lancet, JAMA, CID, NEJM, Emerg. Inf.
- Section editors for CID

*Conferences*

- Lectures: 250—300/year
- Regional conf. With CDC
- National conf.—hosp. response

Bioterrorism Center: Web Stats, 2000
*Hits:* 1.5 million
*Visitor sessions:* 67,000
*Unique visitors:* 23,000
*Average:* 162/day
*Average visitor sessions:* 30 min.