TERRORISM AND EMERGENT CHALLENGES IN PUBLIC HEALTH

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ABSTRACT

The authors explore the complexity of challenges facing the public health community in an era increasingly defined by terrorism. The public health and associated political structure in this country has much to do to better coordinate its' efforts in an effective way. Solutions will ultimately come from partnerships between government agencies, community organizations, the business community, and international interests.

INTRODUCTION

The recent events of the twentieth century have served as a portent of things to come. These ominous incidents told us in advance that terrorism could come from within our country as well as from outside our borders (Johnson, Kennedy and Delener, 2005). The callousness of these acts illustrates not only that terrorists place no value on human life, but that they are willing, even eager, to sacrifice themselves to accomplish their destructive intent.

The random nature of their acts underscores their goal of indiscriminate death and destruction. Thus we realize that terrorism in the twenty-first century will become increasingly unpredictable (Johnson, Kennedy and Delaner, 2005).

Any response to counter terrorism must be broad and comprehensive, and the public health system of the United States must necessarily occupy a major place in the vanguard of the nation's response. In a free society like the United States, prevention and preparedness are options readily embraced. Perhaps no time in history has seen so much effort and so many resources dedicated to terrorism preparedness (Johnson,, Kennedy and Delener, 2005).We seek to examine and explore the changing nature and role of public health in response to the emerging challenges of terrorism. These changes are broad based, comprehensive, and affect the very infrastructure of public health in the vital areas of community assessment, policy development and assurance.

BACKGROUND

Recently transpired events influence and guide public decision-making. The relationship between medicine, public health, ethics and human rights is evolving in response to economic, political, and social events. Thought and decisions, in the area of human rights, and closely aligned to public health and human rights related roles and responsibilities for health care professionals, are receiving increased attention.

Recent developing public health trends include: measurable and substantial growth in organized health care delivery systems, including managed care organizations; more frequent "purchaser driven" health care services; an aging population; rapid changes in technology; emerging new infectious diseases and reemerging "old ones"; a shift

from infectious/communicable disease to chronic disease; increasing importance and relevance of behavioral risk factors and their impact on overall community health; a decline in percent of health care expenditures earmarked for public core services; low levels of trust and confidence in public institutions; and the growing importance of community involvement and collaboration activities (O'Boyle and Simms, 2005).

In the last century, the most significant advances in public health were interventions focused primarily on sanitation and hygiene: clean water, clean food, and immunizations--concerns at the forefront of sustainability. Effective public health efforts also helped to improve health and raise life expectancy in the United States from 47 years in 1900 to 78 years in 1995 (Bloom, 2000). The field has contributed to the quality of life within a managed care system, yet less than one percent (1%) of the allotted prevention money is used for programs that actually impact public health; therefore, one of today's major challenges for health leaders is to bring together perspectives and resources of the medical care industry, the population-based public health sector, and the community, to develop community-based health systems that work (Woltring & Barlas, 2001).

This challenge of coordinating these perspectives and resources is compounded when considering the overwhelming advances in biomedicine in the 1990s. This decade saw the introduction of 148,000 patents as part of the mapping and sequencing of the human genome. Advances in biotechnology, such as prenatal genetic testing, new reproductive technologies, and DNA data banks , are displacing the less provocative public and social issues of gun control, immunization, employee leave programs to assist care for dying relatives, emergency room use as primary care sites by the uninsured, and medical care for the homeless (Turner, 1997). Further,

these very advances in biotechnology may actually facilitate bioterrorism (Simms, 2004a). Bioterrorism is the release of toxins or biological agents "to terrorize a civilian population or manipulate a government" (Strongin, 2001). Although biological agents, such as smallpox and the plague, are difficult to work with, the application of biotechnology, along with the relative easy-of-access to materials, makes these weapons attractive to terrorists (Henderson, 1998). The majority of planning for emergency response is on overt attacks such chemical terrorism or bombings. Bioterrorism is covert and requires an entirely different dimension of response involving the entire healthcare infrastructure. Biological and chemical weapons have been in existence for decades, yet the public is not prepared for the public health, social and psychological impacts of these weapons (Bartlett, O'Toole, Inglesby & Mair, 2002). Due to the urgency that terrorism poses, preventive medicine, social medicine, and the core competencies of public health, receive less attention.

As far back as the 1980s, The Institute of Medicine (IOM) has called for the improvement of essential public health services. A central theme of the IOM mandate has been commitment to core competencies while providing a mechanism for public health response to advances in biotechnology and the shifting focus the geopolitical realities of terrorism bring (The Institute of Medicine, 1988).

PUBLIC HEALTH AND 9/11

The focus of public health shifted with the events of September 11 (APHA, Nation's Health, November 2001). One result is greater communication and new partnerships between public health personnel and emergency responders. Today, the nation's public health system is

better prepared to respond to a terrorist attack than it was a year ago, but the system is still behind in areas such as training, coordination, and education, according to a report card released in September by the American Public Health Association (APHA, Nation's Health, October 2002). The year's successes included a reinforced public health infrastructure, expanded public health laboratories, improved surveillance, and strengthened communication (APHA, 2001). The report also highlights gains made in increased funding for readiness and programs aimed at responding to emergencies; yet, the report also states that public health is behind in a number of areas such as regional coordination of response activities, education and training for public health professionals, protection of food and water supplies, and ensuring the safety of chemical plants.

Through the formation of the Department of Homeland Security and expanded funding of the Centers for Disease Control in Atlanta, the government has made considerable efforts to ready the citizenry for potential threats. Despite the areas of progress, there are advocates who are concerned that terrorism may overshadow and siphon funding from the broader mission of protecting and improving the public's health. Just such a shift in priorities has been especially apparent at the CDC with preparedness funding now shifting to the states. As a result, state agencies have increased laboratory capacity, instituted new training and procedures, recruited new personnel and strengthened surveillance. CDC Director, Julie Gerberding, MD, MPH states, "We are building terrorism capacity on the foundations of public health, but we are also using new investments in terrorism to strengthen the public health foundation and these two programs are inextricably linked, and I think both will benefit from the efforts and the investments we intend to make on an ongoing basis" (Mientka, 2002).

Despite the potential for building community preparedness (Johnson, Kennedy, & Delener, 2005) and strengthening public health foundations, the question remains: Who should shoulder the burden of caring for the sick and dying following a major terrorist attack, especially when the public health infrastructure is already suffering from personnel shortages and financial woes? Among the major concerns for post-9/11 public health are the following:

- State budget cuts in nearly two thirds of states threaten to undermine bio terrorism and other health-crisis readiness.
- Much of the federal bioterrorism aid is wrapped up in red tape, with only half of the states having spent 90 percent of fiscal year 2002 funds. Procurement problems, hiring freezes, and shortages of trained workers contribute to the delays.
- Only one third of states have passed along half of their federal funds to local health departments. State, local, and city health departments often disagree on how resources should be distributed.
- The public health workforce is about to face a major shortage.
- Only two states are at the highest preparedness level required to receive and distribute pharmaceuticals and other medical supplies needed to provide emergency vaccinations and antidotes.
- Readiness for threats from infectious diseases and other health crises is in jeopardy, with only one quarter of states having a plan to respond to a pandemic flu outbreak.

PUBLIC HEALTH AND WORKFORCE CHALLENGES

Historically, public health focus was centered on containing communicable diseases (i.e., plague, smallpox); however, today, public health concentrates on chronic disease, resulting in limited training and skills to prepare the public health workforce to concentrate on biological agents and toxins that terrorize populations. Some of these potential health threats have been recognized for years, yet have not been addressed due to the strain on the public health system (Future of Public Health Committee, 2002).

The Institute of Medicine (IOM) and Centers for Disease Control and Prevention (CDC) detail new public health challenges for the next decade , (CDC, Mission, 2005), (CDC, The Futures Initiative, Spotlight, 2005). These challenges include the moving back to science as the basis for public health policy. The goal is to stimulate state and local governments to review the organization, delivery, payments and evaluation of health services in order to create a healthier population. Current efforts in public health identify the priorities of acquiring funds for health promotion and health education, negotiating state and federal cuts in health promotion and health education other than that earmarked for terrorism, developing partnerships in today's dynamic health care environment, and addressing mandates for future health initiatives which range from immunizations to terrorism.

The role of assessment in public health centers on monitoring trends, economics, and demography. Public health has recently initiated practice scenarios for a variety of conditions such as terrorism generating community "report cards" and acting as a clearinghouse for health information (informatics). The role of advocacy is accomplished by working with diverse populations to assess present challenges and role in preventive health care

services through social marketing, and acting as experts by policy makers in interpreting policies. In this capacity, public health maintains its sensitivity to social, cultural, economic and political influences. The role of assurance is targeted at developing, initiating and implementing programs and services through collaboration with business, church and the community in which it serves (O'Boyle & Simms, 2005). "To effectively create the future, mastering the process of anticipatory thinking is crucial. This is the process of using scanning and what-if scenarios to anticipate the future conditions, which may materialize. But the anticipatory thinking process must also be inclusive and involve a significant amount of grassroots input" (Barlow, 2001, p. 20).

In the March 31, 2000 issue of Morbidity and Mortality Weekly Report (MMWR) reported results of a survey conducted by the Pew Charitable Trusts, a Philadelphia based philanthropy that supports non-profit activities in the area of culture, education, health and human services, public policy and religion (Milne, 2000). In 1999 the Mellman Group and Public Opinion Strategies conducted both a qualitative and quantitative study to assess the public's attitudes about public health. This study of registered voters asked respondents a series of statements defining public health. When respondents were asked, "When you hear the term public health, what do you think of?" They were given a choice of four descriptions. Fifty seven percent (57%) of respondents could define public health as approximately either protecting the population from disease or policies and programs that promote healthy living conditions for everyone" (CDC, 2000). A study with Harvard School of Public Health, "Survey Shows Americans Not Panicking Over Anthrax", (Blendon, Benson, DesRoches, & Herrman, 2001) indicates that local community sources considered reliable in disseminating information in the event of a health and/or

terrorist outbreak were Fire Departments (61%), Police Departments (53%), Health Departments (52%) and Own Physician (77%). Consequently, "the public health workforce lacks adequate training to ensure the protection of the public's health" (Milne, 2001).

CDC and Health Resources and Services Administration (HRSA) data, indicate as much as 80% of the public health workforce is without formal, academic training in public health, although this finding may not reflect practice expertise. This data supports a clear need to maintain a consistent level of performance among all public health workers nationwide.

One way this need for healthcare competence is being met is through funding from the Health Alert Network as part of terrorism emergency funding from Congress. Initial start-up monies are expected to serve all states on a continuing basis. Four areas of support include the:

- replacing of outdated IT equipment in local health departments;
- linking local and state public health jurisdictions, community partners and federal health organizations via the Internet resulting in high-speed full-time connections;
- providing ongoing workforce training in information management and technology;
- integrating reporting and electronic surveillance systems that includes environmental health surveillance (Milne, 2001).

This congressional funding effort bolsters public health infrastructure by incorporating the three areas of organizational capacity, workforce development, and information technology. Each area is addressed in the Healthy People 2010 Objectives for Improving Health. "In

fact, Healthy People 2010 for the first time includes an entire chapter on "Public Health Infrastructure" (Chapter 23) that should be given consideration" (Milne, 2001).

These trends in public health workforce parallel and signal formidable public health challenges as well. "Whether preparing for terrorism or preparing for emerging and resurging infectious diseases, it is not always possible to know when and where an event may occur. The challenge is to be adequately prepared for the unimaginable at all times, in all places." (CDC, 2003, p. 33). Infectious disease has no boundaries.

"As our world grows ever more connected, public health must change and adapt to meet our new challenges. CDCs systems to detect and diminish harm are our nation's safety net. By preparing for the worst, we make America's response to ongoing health threats such as infectious and chronic diseases, injuries, environmental exposure to toxins and others more comprehensive and effective" (CDC, 2003, p. 33). It is the interconnectedness that necessitates the need for the continuing expansion into areas of national safety and security.

PUBLIC HEALTH AND NATIONAL INTERESTS

Questions of national safety, security, health and human rights drove President Bush's initiative to shift some of the nation's public health responsibilities to the Department of Homeland Security (DHS). Some public health experts have expressed concern that the plan will compromise the nation's overall public health system (APHA, Nation's Health, August 2002). Under the Bush plan, the security, protection and emergency response

activities of the Centers for Disease Control and Prevention, US Department of Health and Human Services and the Health Resources and Services Administration are in one Department. Many public health experts fear this will hinder overall effectiveness of a broad-based public health system. Concern is especially valid given that DHS was created to respond directly to terrorist activity and threatens to take resources from other public health activities/threats.

At a hearing of the House Energy and Commerce Committee's Oversight and Investigations Subcommittee June 25th 2002, Senator Henry Waxman (D-California) testified: "If we attempt to protect ourselves at the expense of our nation's public health system, we may find that we have undermined, rather than enhanced, our nation's true security" (Waxman, 2002). Under this proposal certain public health functions are moved out of the Department of Health and Human Services into DHS. Included are oversight of pharmaceutical stockpiles, medical supplies, transfer of dangerous pathogens and toxins, and office of Public Health Emergency Preparedness, created in 2001. The primary concern is that placing certain public health activities out of The Department of Health and Human Services could disrupt public health activities and investigations, which depend on the same communications structure, resources and infrastructure.

Despite the creation of the DHS and Public Health departments, organizations and universities across the country continue to use public health competencies to help strengthen their work force and programs. The Core Competencies for public health professionals, developed by the Council on Linkages Between Academia and Public Health Practice, (Public Health Foundation, 2004), outline the skills, knowledge and attitudes required to carry out and improve the practice of public health. These competencies are built around 10 essential public health services, which

include monitoring health status, investigating health problems and enforcing regulations and laws. They blend theory and practice and create a consistent protocol by clearly identifying what skills and abilities professionals need, a practice itself that supports sustainable development. There is wide agreement that focus on core competencies is necessary for workforce development and is being used at the local levels as standards that health department staffs must meet in leadership and cultural awareness (APHA, Nation's Health, September 2002).

Placed in focus as well are the three factors i.e., agent-host-environment that directly affect the public's health. The question for public health officials becomes: How does this complex system interact with health promotion/prevention activities to protect the ability to react to disease, the environment, and the community? Successful protection of the public's health, therefore, must include efforts at interrupting this agent, host and environment cycle—the fundamentals of public health--while protecting the quality of life.

Conscious attention to agent-host-environment cycle serves the public health role perhaps best in addressing terrorism. In letters to all U.S. governors, (May, 2003) Then Secretary of Health and Human Services, Tommy Thompson detailed how much each state would receive of the $1.1 billion dollars in appropriated acts intended to develop comprehensive terrorism preparedness plans, upgrade infectious disease surveillance and investigation, enhance the readiness of hospital systems to deal with large numbers of casualties, expand public laboratory and communication capacities, and improve the connectivity between hospitals, local and state health departments to enhance disease reporting. The Secretary reported and explained that the money was sent to states and local communities to build strong public health systems for responding to terrorism attacks. "These funds are just

the start of our efforts to help states and communities build up their core public health capabilities. We must do everything we can to ensure that America's ability to deal with terrorism is as strong as possible" (Thomson, 2003). The anticipated results of such funds distribution include improved preparedness to respond to public health emergencies. This includes responses to terrorist actions by hospitals and EMS systems; assessment and capacity upgrades for hospitals and medical control authorities that involves training, equipment, surveillance, medical supply or communications upgrades, and multi-tiered systems to triage, isolate, treat and stabilize and refer multiple casualties of a terrorist incident. These results will coordinate and communicate responses from public health, law enforcement and emergency management resources in the event of a terrorist attack.

The shifting of this burden to public health comes at a time of a declining health status within a fragile public health system. The Future of Public Health Committee (2002), a bipartisan multi-issue coalition in Michigan recommends in part:

- Rebuilding public health capacity for surveillance, assessment, investigation and policy making at the state and local levels
- Applying public health science in selecting, designing and implementing public health policies and programs
- Building partnerships that mobilize talents of community-based organizations, business, academia, managed care, health care providers and other stakeholders into powerful coalitions that can approach our complex health issues from every angle
- Initiating science-based, multi-sectored efforts to close the gap between the healthiest and least healthy population groups

- Integrating public health and managed care to maximize synergies in addressing disease prevention and health promotion
- Aligning the public health functions within state government, under a structure for accountable performance

The Committee further asserts that strengthening Michigan's Public Health system requires a three-pronged approach to planning that actively involves: 1) local communities, 2) emphasis on prevention of illness and accidents and 3) a statewide infrastructure able to track and monitor progress at every level. This approach may serve well as a paradigm for a national model.

The shifting of responsibility of public health to the local level, and the developing of strategies and models to better effect this goal and serve the general public cannot be accomplished without active, continuous cooperation with, and support from, government and business. This "partnering" initiative is now recognized by government as vital to success of a comprehensive, responsive national health care system. Al Martinez-Fonts is the Special Assistant to Secretary of Homeland Security, Thomas Ridge. In remarks to the Electronic Industries Alliance on May 6, 2003 he stated, "What we mean by National is federal, state, and local governments and private sectors working together" (Martinez-Fonts, 2003). Mr. Martinez-Fonts went on to say "We are creating close partnerships with the private sector to develop and implement technologies that will move goods and people more safely and quickly through our nation's airports, seaports, and borders". Further, government is actively working to strengthen and maximize institutional efficiency through such areas as information exchange. Corporate health care providers representing the business model actively acknowledge the need for partnering. "Through

collaboration with public health leaders in academia, government, business and the non-profit sector, we are helping to meet the health needs of our nation's communities by building and stewarding comprehensive solutions to complex public health problems" (Pfizer-Public Group, 2005).

CONCLUSION

This new age of terrorism poses many challenges and requires the development of innovative partnerships between business, international and local human rights groups, labor unions, religious institutions and charitable foundations. (Simms, 2004a). One answer is cross-sector partnering, which recognizes community health in its' broadest dimension: creating a web of relationships between individuals, communities and the environment as tied to sustainable development practices (Simms, 2006). In this context, business involvement is vital to the success and impact of many community health initiatives and preparedness for terrorism. Engaging and sustaining business in such activities is challenging; consequently, most community health development efforts lack effective partnership with local businesses. A survey by Project Access, a national initiative to assist local communities in developing and sustaining efforts that promote universal health care access, reported that only 25% of community coalitions have businesses involved in their community efforts (Britt & Sharda, 2000). A similar study by the Institute of Medicine on improving community health through performance monitoring found most communities have limited experience with collaborative efforts among the diverse mix of participants that comprise community health (Britt & Sharda, 2000). Essentially, "Employers face an array of emerging biological, chemical and terrorist threats and need to form strong partnerships with public

health agencies to help them handle life threatening situations in the workplace, according to a prestigious group of private, public and government organizations who collaborated on a toolkit on emergency and bioterror preparedness for business" (National Business Group on Health, 2004).

From the interaction of the disciplines of public health and business universal themes emerge: sustainability and sustainable development; common good, community health and healthy societies; the ensuing progression to human rights practices; and personal responsibility (Simms, 2006). In partnering with public health, the business community can shape the cross-industry/cross-discipline dialogue on terrorism and health; can strengthen the role of public health and business in society; educate biotechnology industry leaders on the range of values questions generated by the times and ensure public health and business ethics as core practices (Simms, 2004a).

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