

Introduction: Consequences of Terrorism

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Abbreviations:

CBRNE = chemical, biological,
radioactive, nuclear, or explosive
EMS = Emergency Medical Services
HHS = US Department of Health and
Human Services
SARS = severe acute respiratory syn-
drome
US = United States of America

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Abstract

Recent acts of terrorism have ranged from the dissemination of anthrax spores to intentional contamination of food to the release of chemical weapons to suicide attacks using explosives. The prediction of such events is difficult, if not impossible. The recent attacks that have generated massive numbers of injured and dead may signal the crossing of a new threshold from multi-casualty events to the use of weapons of mass destruction. Consequently, the medical and healthcare infrastructure must be able to prevent and treat illness and injury resulting from such events. Thus, a first step in improving the preparation for and responses to such events must include a sustained commitment to training physicians, nurses, identification specialists, pathologists, and other first responders. The rapid spread of SARS gives reason to believe that the distribution of such agents has potential advantages over the use of other weapons. Investments in the public health and healthcare systems provide the best defense against terrorism.

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Over the past decade, acts of terrorism have ranged from dissemination of aerosolized anthrax spores, intentional food product contamination, release of chemical weapons in major metropolitan subway systems, and suicide attacks using explosive devices. Unfortunately, predicting when and how such attacks might occur has proven to be very difficult. Since the bombing attacks at the World Trade Center in New York in 1993 and 2001, the Federal Building in Oklahoma City in 1995, US embassies in Kenya and Tanzania in 1998, and just recently in Saudi Arabia and Morocco, and the release of impressively weaponized anthrax spores in the US Postal System during the autumn of 2001, large-scale terrorist attacks on civilian populations using weapons of mass destruction no longer seem in the realm of the fantastic. At their worst, the New

York, Oklahoma City, and Tokyo sarin attacks may represent the crossing of a grim threshold, weakening long-standing taboos, and increasing the likelihood of analogous attacks in the future. Preparing the medical community to address these threats is a formidable challenge, but the consequences of being unprepared could be devastating.

The medical and healthcare infrastructure must be prepared to prevent and treat illness and injury that would result from chemical, biological, radioactive, nuclear, or explosive (CBRNE) terrorism, especially a covert terrorist attack. As with emerging infectious diseases such as Hantavirus, West Nile Virus, and now, SARS, early detection and control of biological or chemical attacks depends on a strong and flexible public health system at the local, state, and federal levels. In addition,

emergency and primary healthcare providers throughout the United States must be vigilant because they probably will be the first to observe and report unusual illnesses or injuries. For covert biological attacks, those on the front lines will be physicians in hospitals, clinics, and in family practice rather than police, emergency medical services (EMS), or quick-response or search and rescue teams that would be critical to coping with attacks using explosive, chemical, or radioactive materials. In view of this, the rush to hospitals and medical facilities by potentially thousands of "worried well" likely will be a major patient management disaster in and of itself. The US Department of Health and Human Services (HHS) has been taking steps since 1999 to prepare for these challenges—and the anthrax attacks on the US postal system in the fall of 2001 constituted a sudden test of these initial steps. While the medical response benefited from this initial preparedness, the attacks also demonstrated significant gaps, and they underscored the need to move much more quickly in building the public health network and national emergency response capacities.

This issue of *Prehospital and Disaster Medicine* outlines steps for strengthening medical and public health capacity to protect against these dangers. The medical and healthcare professions must join with public health departments, law enforcement, intelligence services, and defense agencies, in addition to traditional healthcare organization partners, to address these national security threats. For example, public health officials likely could benefit from domestic and international intelligence that there was a probable biological threat and consequent concern over the potential use of a particular biological agent. Conversely, law enforcement and intelligence agencies could benefit from being regularly informed on what outbreaks are being detected by epidemiological surveillance (both domestic and international) and how these outbreaks are being controlled (or not controlled). However, the best way to ensure that busy physicians

improve their expertise in this area is to require relevant knowledge in medical school curricula and certification examinations, and to offer appropriate training. Since 11 September 2001, US President Bush requested US\$37 billion from Congress to deter and respond to terrorist incidents involving biological and chemical weapons. This request included continued funding for local training programs. The first step in improving response to terrorist incidents is for the Federal government to make this a long-term, sustained commitment to training for the nation's physicians, nurses, identification specialists, pathologists, and other first responders.

Recent threats and use of biological and chemical agents against civilians have exposed the vulnerability of the population of the United States and has highlighted the need to enhance its capacity to detect and control terrorist acts. Fortunately, tools developed in response to terrorist threats serve a dual purpose. They help to detect rare or unusual, naturally occurring disease outbreaks, as well as enhancing response to other medical emergencies such as industrial injuries that might resemble terrorist events in their unpredictability and ability to cause mass casualties. In early 2003, public health officials in China received reports of patients with severe acute respiratory syndrome (SARS) and high mortality rates. Many cases of SARS have occurred among travelers coming from parts of the world with SARS. A novel coronavirus is believed to be responsible for the global epidemic of SARS. Although SARS is a previously unrecognized, naturally occurring disease, similar behavior endows other infectious diseases with special advantages as terrorist weapons compared to other potential means of mass destruction. Investments in the public health and hospital and healthcare systems provide the best defense against terrorism and will improve our ability to respond successfully to other public health threats that will emerge during the 21st century.