



Bioterrorism Alleging Use of Anthrax and Interim Guidelines for Management— United States, 1998

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FROM OCTOBER 30 THROUGH DECEMBER 23, 1998, CDC received reports of a series of bioterroristic threats of anthrax* exposure. Letters alleged to contain anthrax were sent to health clinics on October 30, 1998, in Indiana, Kentucky, and Tennessee. During December 17-23 in California, a letter alleged to contain anthrax was sent to a private business, and three telephone threats of anthrax contamination of ventilation systems were made to private and public buildings. All threats were hoaxes and are under investigation by the Federal Bureau of Investigation (FBI) and local law enforcement officials. The public health implications of these threats were investigated to assist in developing national public health guidelines for responding to bioterrorism. This report summarizes the findings of these investigations and provides interim guidance for public health authorities on bioterrorism related to anthrax.

Indiana

The threatening letter was opened by an administrative assistant, who called 911; police, fire, emergency medical services (EMS), and hazardous materials units (HAZMAT) (i.e., first responders) were sent to the clinic, and the local FBI office was contacted. The letter was sealed in a plastic bag and collected by FBI. All 31 adults who were in the building when the letter was opened were considered possibly exposed to *Bacillus anthracis* spores and were detained for approximately 3 hours.

First responders in consultation with public health officials in the Marion County Health Department (MCHD) decontaminated the potentially exposed persons in a temporary shelter constructed on the scene. HAZMAT personnel used full protective gear with self-contained respirators (level A protection). The 31 occupants placed their clothing and personal effects in plastic bags and showered using soap and water plus a dilute bleach solution. The desktop where the letter was opened was washed with a 5% hypochlorite solution (i.e., standard household bleach). All 31 persons were transported to local emergency departments (EDs) to receive oral chemoprophylaxis with ciprofloxacin (500 mg twice daily); some underwent additional decontamination (i.e., showered again with soap and water) as required by hospital policy.

Public health officials from the MCHD collected contact information from all persons and informed them they would be notified when results from laboratory testing were available; arrangements also were made for counseling. The letter was taken by FBI to the Indiana State Department of Health Laboratory, where cultures for *B. anthracis* were negative. The next day, FBI transported the letter to the United States Army Medical Research Institute for Infectious Diseases (USAMRIID), U.S. Department of Defense, in Ft. Detrick, Maryland, where direct fluorescent antibody testing and culture were negative.

Kentucky

The letter was opened by an administrative assistant; the assistant called the postal inspector and was advised to put the letter in a plastic bag. The postal inspector contacted the local FBI office and went to the clinic. FBI contacted the assistant fire chief who sent police, fire, EMS, and a HAZMAT unit to the clinic.

Jefferson County Health Department personnel recommended that the staff member and the postal inspector shower

with soap and water at the clinic and obtain oral chemoprophylaxis (ciprofloxacin 500 mg twice daily) at a local ED. The Kentucky State Department for Public Health, FBI's Weapons of Mass Destruction Office, and USAMRIID advised that decontamination and oral chemoprophylaxis were not necessary for five other adults in the center who may have been exposed to the letter. The desktop where the envelope had been opened was decontaminated with a hypochlorite solution.

The letter was taken by FBI to a bio-safety level 3 facility at the University of Louisville Hospital Clinical Microbiology Laboratory, where phase microscopy revealed no spores consistent with *B. anthracis*, and cultures were negative. The next day, FBI transported the letter to USAMRIID, where direct fluorescent antibody testing and culture were negative.

Tennessee

The letter was opened by an administrative assistant, who called the local police department; officers took custody of the letter and placed it in a plastic bag. A clinic administrator contacted CDC seeking advice about preventive health measures. CDC notified the local FBI field office and the Tennessee Department of Health regarding the threat. FBI took the letter from the local police department to USAMRIID, where tests were negative for *B. anthracis*. The administrative assistant and the responding police officer, both of whom had direct contact with the letter, received chemoprophylaxis.

California

During December 17-23, 1998, four threats alleging use of anthrax were reported in greater metropolitan Los Angeles. The response to all four threats involved the police and fire departments, EMS, HAZMAT, FBI, the County of Los Angeles Department of Health Services (CLADHS), the California Department of Health Services, and CDC.

The first threat was a letter mailed to a private business; all 28 adults consid-



ered at risk for exposure to *B. anthracis* were decontaminated at the scene and given chemoprophylaxis. The letter was transported by FBI to a CLADHS biosafety level 3 laboratory and cultured for *B. anthracis*; all cultures were negative.

In the second threat, a telephone caller to a government building claimed to have contaminated the building's air-handling system. Approximately 95 adults received chemoprophylaxis. First responders, FBI, and CLADHS jointly decided not to decontaminate involved persons.

In the third threat, a telephone caller to 911 claimed to have contaminated the air-handling system of a federal building with *B. anthracis*; 1200-1500 persons (at least one of whom was pregnant) and two children potentially were exposed. Contact information for potentially exposed persons was collected for follow-up. No one was decontaminated on the scene, and chemoprophylaxis was not recommended; all potentially exposed persons were asked to go home, wipe down the interiors of their potentially contaminated vehicles with a solution of one part bleach to 10 parts water, place their clothing in a plastic bag until results from laboratory testing were known, and then shower. Environmental samples taken from the air ducts of the building were cultured for *B. anthracis* at CLADHS; all cultures were negative.

In the fourth incident, an anonymous telephone caller to 911 claimed to have contaminated the air-handling system of an office building occupied by approximately 200 persons. FBI was contacted; the threat was deemed to have low credibility. FBI in conjunction with CLADHS decided that neither decontamination nor chemoprophylaxis was warranted. Environmental samples tested at CLADHS were negative for *B. anthracis*.

Reported by: Marion County Health Dept, Indianapolis; Indiana State Dept of Health. Jefferson County Health Dept, Louisville; Kentucky Dept for Public Health. Knox County Health Dept, Knoxville; Tennessee Dept of Health. County of Los Angeles Dept of Health Svcs, Los Angeles; California Dept of Health Svcs. Council of State and Territorial Epidemiologists, Atlanta, Georgia. Federal Bur of Investigation, Washington, DC. US Army Medical Research Institute for Infectious Diseases, US Dept of Defense, Ft. Detrick, Maryland. Office of Emergency Preparedness, US Dept of Health and Human Svcs. Emergency Response Coordinating Group, National Center for Environmental Health; Meningitis and Special Pathogens Br, Div

of Bacterial and Mycotic Diseases, National Center for Infectious Diseases; and an EIS Officer, CDC.

CDC Editorial Note: Anthrax is an acute infectious disease caused by the spore-forming bacterium *B. anthracis*. It occurs most frequently as an epizootic or enzootic disease of herbivores (e.g., cattle, goats, and sheep), which acquire spores from direct contact with contaminated soil. Humans usually become infected through contact with or ingestion or inhalation of *B. anthracis* spores from infected animals or their products (e.g., goat hair). Human-to-human transmission has not been documented.

Although all the threats alleging use of anthrax described in this report were hoaxes, they demonstrate settings where bioterrorism can occur and the potential public health impact. These threats required prompt action by health, law enforcement, and laboratory personnel. Coordination and communication across agencies are necessary to protect the public and first responders from credible biologic warfare and bioterrorism agents such as anthrax.

The spore form of *B. anthracis* is durable and can be delivered as an aerosol.¹ The incubation period for anthrax is 2-60 days. Inhalation causes the most serious form of human anthrax, and although contemporary experience in humans is limited, mortality may be high even with appropriate therapy (T.V. Inglesby, D.A. Henderson, J.G. Bartlett, et al., *Working Group for Civilian Biodefense*, personal communication, 1998). The likelihood of developing cutaneous disease is low after exposure of *B. anthracis* spores to intact skin. The risk for "secondary" anthrax through reaerosolization appears to be low in settings where *B. anthracis* spores were released unintentionally or were present at low levels.² In situations where the threat for transmission of *B. anthracis* spores is deemed credible, decontamination of skin and potential fomites (e.g., clothing or desks) may be considered to reduce the risk for cutaneous and gastrointestinal forms of disease.

Planning for Response to Threats

The public health response to bioterrorism requires communication and coordi-

dination with first responders and law enforcement officials. State and local health departments should work with these groups to ensure that local disaster preparedness plans address bioterrorism; define the roles of each agency, including protection of first responders; and are tested through simulations. FBI has jurisdiction for bioterrorism response but recognizes the need to conduct epidemiologic investigations, define at-risk groups, and rapidly implement potentially life-saving medical and public health responses. When bioterrorism alleging use of anthrax or other agents occurs, the local emergency response system should be activated by dialing 911 in most communities; in communities without 911 systems, local law enforcement authorities should be notified. The local FBI field office and local and state public health authorities also should be notified.

FBI will coordinate the collection of evidence (e.g., letters, packages, or air-handling system samples) and deliver materials to an FBI or US Department of Defense laboratory for testing. To guide decision-making, test results identifying *B. anthracis* should be available as soon as possible, at least within 24-48 hours. Efforts are under way to assess and enhance the capabilities of state and local health department laboratories to fulfill the need for rapid analysis. Planning for laboratory testing should be part of bioterrorism preparedness by state and local public health, law enforcement, and first responder authorities in consultation with federal officials.

Public health officials, working with law enforcement and first response personnel, should determine the need for decontamination and postexposure prophylaxis. In most of the recent hoaxes purporting anthrax exposure, immediate postexposure decontamination and prophylaxis have not been indicated because of the lack of credibility of the threat. Public health officials should collect contact information for potentially exposed persons for notification of laboratory results or other follow-up. Potentially exposed persons should be given information about the signs and symptoms of



illnesses associated with the biologic agent and about whom to contact and where to go should they develop illness.

Recommendations for Postexposure Prophylaxis

Postexposure prophylaxis for exposure to *B. anthracis* consists of chemoprophylaxis and vaccination. Oral fluoroquinolones are the drugs of choice for adults, including pregnant women (T.V. Inglesby, D.A. Henderson, J.G. Bartlett, et al., *Working Group for Civilian Biodefense*, personal communication, 1998³). If fluoroquinolones are not available or are contraindicated, doxycycline is acceptable. Children should receive prophylaxis with oral ciprofloxacin or oral doxycycline (T.V. Inglesby, D.A. Henderson, J.G. Bartlett, et al., *Working Group for Civilian Biodefense*, personal communication, 1998³). Prophylaxis should continue until *B. anthracis* exposure has been excluded.

Postexposure vaccination with an inactivated, cell-free anthrax vaccine (Bioport Corporation, formerly Michigan Biologic Products Institute†) is indicated in conjunction with chemoprophylaxis following a proven biologic incident (T.V. Inglesby, D.A. Henderson, J.G. Bartlett, et al., *Working Group for Civilian Biodefense*, personal communication, 1998⁴). Postexposure vaccination consists of three injections: as soon as possible after exposure and at 2 and 4 weeks after exposure. Anthrax vaccine can be requested through CDC. Although this vaccine is now being administered routinely to US military personnel, routine vaccination of civilian populations is not recommended. This vaccine has not been evaluated for safety and efficacy in children aged <18 years or adults aged >60 years.

If decontamination is appropriate, persons should remove their clothing and personal effects, place all items in plastic bags, and shower using copious quantities of soap and water.⁵ Plastic bags with personal effects should be labeled clearly with the owner's name, contact telephone number, and inventory of the bag's contents. Personal items may be kept as evidence in a criminal trial or returned to the owner if the threat is unsubstantiated. For incidents involving possibly con-

taminated letters, the environment in direct contact with the letter or its contents should be decontaminated with a 0.5% hypochlorite solution (i.e., one part household bleach to 10 parts water) following a crime scene investigation. Personal effects may be decontaminated similarly.

CDC and other offices in the US Department of Health and Human Services are working with state and local health departments, federal agencies, and nongovernmental organizations to improve the public health capacity to address bioterrorism and develop locality-specific response plans. CDC also can assist public health officials with decision-making if a threat occurs alleging the use of a biologic agent.

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*Infection caused by the bacterium *Bacillus anthracis*.
† Use of trade names and commercial sources is for identification only and does not imply endorsement by CDC or the US Department of Health and Human Services.

Surveillance of Morbidity During Wildfires—Central Florida, 1998

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SEVERAL LARGE WILDFIRES OCCURRED IN Florida during June-July 1998, many involving both rural and urban areas in Brevard, Flagler, Orange, Putnam, Seminole, and Volusia counties.^{1,2} By July 22, a total of 2277 fires had burned 499,477

acres throughout the state (Florida Department of Community Affairs, unpublished data, 1998). On June 22, after receiving numerous phone calls from persons complaining of respiratory problems attributable to smoke, the Volusia County Health Department issued a public health alert³ advising persons with pre-existing pulmonary or cardiovascular conditions to avoid outdoor air in the vicinity of the fires. To determine whether certain medical conditions increased in frequency during the wildfires, the Volusia County Health Department and the Florida Department of Health initiated surveillance of selected conditions. This report summarizes the results of this investigation.

The surveillance system monitored the frequency of patient visits associated with selected conditions at seven hospitals in Volusia County and one hospital in Flagler County. The medical records departments of these eight hospitals furnished data about persons seen in the emergency departments (EDs) and/or admitted for the selected conditions during June 1-July 6, 1998. For comparison, the hospitals also provided the same information for June 1-July 6, 1997. Data from the eight hospitals were combined for analysis.

From 1997 to 1998, ED visits increased substantially for asthma (91%), bronchitis with acute exacerbation (132%), and chest pain (37%). ED visits for painful respiration decreased (27%). Changes in the number of admissions were minimal.

Reported by: B Sorensen, MD, M Fuss, Volusia County Health Dept; Z Mulla, MSPH, W Bigler, PhD, S Wiersma, MD, R Hopkins, MD, State Epidemiologist, Florida Dept of Health.

CDC Editorial Note: In response to the wildfires in Florida, infection-control practitioners and public relations professionals at these local hospitals were used as liaisons between the medical records staff at their respective hospitals and the health department. The data were used to quantify the extent of morbidity possibly related to the wildfires.

The findings in this report are subject to at least two limitations. First, the



increase in the frequency of the conditions observed for this report did not necessarily result from the wildfires. Certain persons who suffered from these conditions may have never presented at a hospital because they chose not to seek medical care or were seen by their private physician. Second, coding practices differ slightly between hospitals and may change over time within the same hospital.

This report illustrates that rapid surveillance of nonreportable diseases and conditions is possible during a public health disaster. The surveillance strategy included (1) identifying key staff in local hospitals well in advance of a disaster, (2) developing connections with these persons to ensure rapid access to critical information, and (3) providing simple data collection instruments that minimize confusion.

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Update: Recommendations to Prevent Hepatitis B Virus Transmission— United States

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IN OCTOBER 1997, THE ADVISORY COMMITTEE ON IMMUNIZATION PRACTICES (ACIP) expanded its hepatitis B vaccination recommendations to include all unvaccinated children aged 0-18 years and made hepatitis B vaccine available through the Vaccines for Children program (VFC) for persons aged 0-18 years who are eligible for VFC. ACIP priorities for hepatitis B vaccination of children remain unchanged and include all infants; children

in populations at high risk for hepatitis B virus (HBV) infection (e.g., Alaska Natives, Pacific Islanders, and children who reside in households of first-generation immigrants from countries where HBV infection is moderately or highly endemic); previously unvaccinated children aged 11-12 years; and older adolescents and adults in defined risk groups.

In 1991, the ACIP recommended a comprehensive hepatitis B vaccination strategy to eliminate HBV transmission in the United States.¹ Critical elements of this strategy include preventing perinatal HBV transmission by identifying and providing immunoprophylaxis to infants of hepatitis B surface antigen-positive mothers and universal hepatitis B vaccination of infants to interrupt transmission. In 1994, the ACIP expanded the recommendations to include previously unvaccinated children aged 11-12 years.² The percentage of children aged 19-35 months who have received three doses of hepatitis B vaccine has increased substantially from <10% in 1991 to 84% in 1997.³ No nationwide vaccine coverage data are available to assess vaccine coverage among children aged 11-12 years; however, vaccine coverage in this group is expected to increase in states that have implemented middle school entry requirements for hepatitis B vaccination.⁴

To increase access to hepatitis B vaccine, the new recommendations encourage vaccination of previously unvaccinated children and adolescents aged 0-18 years whenever they are seen for routine medical visits. This expansion of the recommended age group for vaccination and for VFC eligibility simplifies previous recommendations and the eligibility criteria for VFC vaccine. Providers should ensure that vaccination records of children and adolescents presenting for vaccination are checked for receipt of previous doses.

Universal vaccination of infants and children aged 11-12 years will result in a highly immune population and is expected to eliminate HBV transmission in

the United States. However, high rates of HBV infection continue to occur among Alaska Native and Pacific Islander children and among children residing in households of first-generation immigrants from countries where HBV infection is endemic.^{5,6} As a result, targeted programs are needed to achieve high vaccination coverage among these children. In addition, because most HBV infections in the United States occur among adults, vaccinating infants and adolescents aged 11-12 years alone will not substantially lower disease incidence for several years. Most HBV infections in adults occur among persons who have defined risk factors for HBV infection, including persons with multiple sex partners (more than one partner during the preceding 6 months); men who have sex with men; and injecting-drug users.⁷ The primary means to prevent these infections is to identify settings where adolescents and adults with high-risk drug and sexual practices can be routinely accessed and vaccinated (e.g., sexually transmitted disease clinics, family-planning clinics, drug-treatment clinics, community-based human immunodeficiency virus prevention sites, and correctional facilities).

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