



# City Health Information

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## BIOTERRORISM PREPAREDNESS FOR HEALTH CARE PROVIDERS

- Be alert for illnesses that may be due to bioterrorism.
- Be aware that children, the elderly, and other special needs populations may require additional considerations for the diagnosis and treatment of illnesses caused by bioterrorism.
- Learn how you can prepare for and respond to bioterrorism events.
- Familiarize yourself with online preparedness resources before disasters and emergencies.

New York City (NYC) continues to be at risk for a bioterrorism attack. Government and civilian collaboration will be needed to respond effectively. Medical providers in both outpatient and inpatient settings in NYC will play major collaborative roles in the event of a bioterrorist attack.

### BIOTERRORISM IN NEW YORK CITY: HOW IT MIGHT PRESENT

In 2001, anthrax contaminated letters were sent to NYC addresses, resulting in a cluster of 8 anthrax infections.<sup>1</sup> One person with inhalational anthrax died.<sup>2</sup> The resulting illnesses caused significant concern and led to costs to government, private businesses, health care

facilities, and individuals. A more efficiently dispersed bioterrorism agent (e.g., aerosol released from a truck or boat) could be far more damaging.

Either bacteria (such as enterohemorrhagic *E. coli* or anthrax), viruses (including smallpox or those causing hemorrhagic fevers), or toxins (e.g., botulinum toxin) could be used as weapons. Intentional tampering could lead to small or widespread food-borne outbreaks. If disseminated widely, bioaerosols could cause thousands of potentially serious illnesses, including life-threatening neurological disorders, pneumonias, sepsis syndromes, gastrointestinal illnesses, and skin infections (Table 1).

If the dispersion of a bioterrorism agent were to go unrecognized, the event might not be detected until hours or days later, when ill patients presented for medical evaluation. To respond effectively, authorities must detect a bioterrorist incident as soon as possible after a biological agent has been released, and take action to minimize the impact of the agent on the population.



**Table 1. Spectrum of Potential Bioterrorist Incidents**

| <b>Considered More Likely</b>                                                                                | <b>Considered Less Likely</b>                                                                                                                                  |
|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Biological Threat Agent:</b><br>Routine organisms found in clinical laboratories (e.g., <i>Shigella</i> ) | Organisms not routinely found in clinical laboratories (e.g., anthrax, plague, or smallpox)                                                                    |
| <b>Agent Characteristic:</b><br>Not weaponized                                                               | Weaponized (e.g., processed to enhance environmental stability, manufactured in respirable size range or made resistant to antimicrobials)                     |
| <b>Target Population:</b><br>Localized individuals (e.g., customers of specific restaurants)                 | Consumers of widely distributed food item (e.g., milk) or residents from a large geographic area (e.g., aerosol release from vehicle on an inner-city highway) |
| <b>Dissemination technique:</b><br>Unsophisticated; inefficient                                              | Sophisticated; efficient                                                                                                                                       |
| <b>Scale:</b><br>Few casualties; limited consequences                                                        | Many casualties; catastrophic consequences possible                                                                                                            |
| <b>Perpetrator:</b><br>Self-supporting individual or technically unsophisticated group                       | Well-trained, technically sophisticated individual or group (e.g., state-sponsored organization)                                                               |

## DETECTING A BIOTERRORIST ATTACK IN NEW YORK CITY

NYC public health and law enforcement authorities have devised integrated strategies to detect a potential bioterrorism attack quickly and efficiently.

### Interdiction:

The New York Police Department (NYPD), the Federal Bureau of Investigation (FBI), and other local law enforcement agencies (e.g., the NYC Transit Police and the Port Authority Police Department) share information and coordinate terrorism-related investigations. It is possible that plans for an attack could be detected and thwarted by law enforcement authorities before they are initiated or completed.

### Environmental Monitoring:

Federal and local authorities have deployed air samplers in various NYC locations. Air samples are tested daily for potential bioterrorism agents. This system could detect bioterrorism within hours of the release of an agent.

### Syndromic Surveillance:

The NYC Department of Health and Mental Hygiene (NYC DOHMH) evaluates large data sets every day for unusual statistical patterns that might reflect sudden increases in citywide or localized illness. Information related to purchases of over-the-counter and prescription medications, Emergency Medical Services transports, and patients' chief complaints from >90% of all NYC emergency department encounters are analyzed for unusual trends.<sup>3</sup>

The NYC DOHMH has successfully detected and tracked annual influenza and gastrointestinal epidemics (e.g., norovirus and rotavirus) with syndromic surveillance. It is possible that a sudden increase in a disease syndrome (e.g., fever or respiratory illness) could provide an early indication of a large, covert biological release before reports of suspected or confirmed cases were received from NYC providers or laboratory workers.

### Provider Reporting

The New York State Sanitary Code and NYC Health Code mandate the immediate reporting by providers or

laboratory workers of any suspected or confirmed illness caused by a potential bioterrorism agent.<sup>4</sup> Previous cases of inhalational anthrax<sup>5</sup>, bubonic plague<sup>6</sup>, and West Nile virus<sup>7</sup> were detected rapidly and reported immediately to the NYC DOHMH by astute clinicians. (See attached poster: "Bioterrorism Syndromes.")

## RESPONDING TO A SUSPECTED BIOTERRORIST ATTACK IN NYC

If the release of a bioterrorism agent were suspected by the NYC DOHMH, the following steps would occur immediately:

- The NYC DOHMH and law enforcement agencies would investigate to confirm the incident and determine who might be at risk. These efforts might include joint public health/law enforcement in-hospital interviews of patients and/or patient contacts.
- Information and guidance would be made available to all New Yorkers.
- The NYC DOHMH would provide the health care community with specific recommendations in the following areas:
  - Criteria for reporting suspect cases to the NYC DOHMH (e.g., signs, symptoms, laboratory findings, and possible risk factors).
  - Diagnostic testing, including proper specimen collection and packaging to transport to the NYC DOHMH Public Health Laboratory for reference lab testing.
  - Treatment, prophylaxis, and infection control measures.
  - Dedicated hotlines for provider questions and reporting of suspected illnesses.

If the release of a bioterrorism agent were confirmed, government authorities, in coordination with the health care community, would mobilize resources rapidly to:

- Prevent infections through mass antimicrobial prophylaxis, if indicated, first targeting those people most likely to have been exposed.
- Identify suspected patients and administer appropriate treatment.

- Augment treatment capacities in anticipation of mass casualties.
- Implement isolation or quarantine measures to contain and control a contagious infectious disease outbreak.
- Remove a contaminated food product from homes and the marketplace, if warranted.
- Keep the public and health care provider communities informed with the latest information.
- Address the mental health needs of all New Yorkers, but especially the most vulnerable populations (e.g., children and people with mental health problems).
- Determine appropriate clean-up measures to address any latent environmental hazards.

## HOW YOU CAN PREPARE FOR A BIOTERRORIST ATTACK

To effectively respond to an attack, health care providers must prepare beforehand. The NYC DOHMH recommends these 10 bioterrorism preparedness steps that the practicing health care provider can take:

1. **Become familiar with the clinical features of illnesses caused by key potential bioterrorism agents** and clinical patterns found when outbreaks are caused intentionally (Table 2 and fold-out poster).
2. **Know how to report your suspicions immediately to the NYC DOHMH.** If you think that a patient might have a disease caused by bioterrorism, immediately call: **NYC DOHMH’s Bureau of Communicable Disease 212-788-9830 (business hours).** **NYC DOHMH’s Poison Control Center 212-POISONS or 1-800-222-1222 (during non-business hours).**
3. **Prepare to address the psychological impacts of bioterrorism.** Most acute stress reactions following a disaster can be considered normal and tend to diminish over time. After certain type of disasters, it is common to have many people seeking health care services for physical concerns that originate from overwhelming stress and anxiety.  
Psychological casualties (e.g., persons who believe they have been exposed or are ill without medical symptoms

relatives and friends of people who have been affected by the attack; disaster responders; and other staff) may far outnumber medical casualties.

Health care providers can prepare to address these psychological effects by learning to:

- Recognize normal and abnormal stress reactions to traumatic events.
  - Provide effective medical and behavioral triage.
  - Identify and manage psychiatric emergencies.
  - Give psychological first aid.
  - Use basic risk communication skills.
  - Maintain emergency cultural competency.
  - Employ self-care strategies and positive coping skills.
  - Be aware of your own physical and mental health needs, as well as those of your colleagues.
4. **Anticipate how patients with special needs will receive care during a biological emergency.** Patients who are elderly, homebound, disabled, homeless, dialysis- or ventilator-dependent, or mentally ill may be especially vulnerable to interruptions in care during citywide emergencies. They may also have additional physical and mental health needs.  
Children represent an especially large and potentially vulnerable population. Pediatricians and other primary care providers should consider the special needs of children in advance of any potential disaster or biological emergency (Table 3).  
Health care providers should provide guidance to care givers of patients with special health needs on how to:
- Notify utility company whether emergency support during a disaster will be needed (e.g., if patient is ventilator-dependent). The utility company should assist in identifying contingencies should it not be able to provide alternative power during extended power disruptions.
  - Maintain stocks of medications and equipment should supply be disrupted during a disaster.
  - Obtain medications and equipment during a disaster.
  - Train household members to assume the role of in-home health care providers during a disaster.

**Table 2. Indicators of Possible Bioterrorism-Related Infections or Disease Clusters**

| Indicators                                                                                                              | Examples                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Occurrence of a disease that is unusual for a given geographic area or season                                           | Plague in New York City; a large cluster of influenza-like illness in July                                                                                                                                                                |
| Unusual clustering of illnesses by location or time                                                                     | Increase in respiratory disease following a large public event                                                                                                                                                                            |
| Atypical distribution by person for common diseases                                                                     | Increase in severe, acute gastroenteritis among bank employees                                                                                                                                                                            |
| Other unusual exposure risks for a given disease                                                                        | Botulism cluster associated with consumption of a manufactured food product                                                                                                                                                               |
| Illnesses with findings suggestive of infection caused by a biological threat agent                                     | Rapidly progressive respiratory failure with widened mediastinum and pleural effusion on CXR (i.e., inhalational anthrax)                                                                                                                 |
| Sudden and severe respiratory, gastrointestinal, dermatologic, or neuromuscular illnesses in previously healthy persons | Progressive respiratory failure (e.g., inhalational anthrax or pneumonic plague); bloody diarrhea with acute abdomen (e.g., gastrointestinal anthrax); febrile syndrome with rash (e.g., smallpox); descending paralysis (e.g., botulism) |

*Suspected human cases of anthrax, plague, smallpox, viral hemorrhagic fever, botulism, tularemia, Q fever, brucellosis, melioidosis, or glanders must be reported to the NYC DOHMH without delay (Resources).*

### Table 3. Bioterrorism and Children

- Children comprise 25% of the NYC population, yet their special needs can be overlooked by emergency planners and responders.
- Children may be more vulnerable to acts of bioterrorism than other population groups.
  - o Greater potential exposure risks include:
    - Faster breathing rate.
    - Specific food products geared toward children.
    - The concentration of children in schools during the daytime hours.
    - Toddlers may not tolerate wearing masks when indicated.
  - o Greater potential clinical risks include:
    - Vulnerability to dehydration and shock.
    - A likely shortage of specialized treatment facilities, equipment, and trained personnel needed to care for more severely ill children, especially infants.
    - Less data on the effectiveness of treatment and prophylaxis in children.
  - o Unique pediatric mental health stressors include:
    - Responses to trauma are age-related.
    - Possible separation from parents or primary caretakers.
    - Possible unfamiliar surroundings and caretakers.
- Clinicians may need to address childrens' broad needs in disasters, including physical and psychological trauma and injury.
- Pediatricians should consider providing parents with disaster planning literature and discuss during anticipatory guidance.

Advise parents to:

- o Have a family disaster plan that includes contingencies for alternative caretakers if parents/guardians are unavailable.
- o Discuss and practice the plan with their children.
- Other possible ways to prepare for pediatric disaster needs in your neighborhood:
  - o Participate in local school disaster planning activities.
  - o Ensure proficiency in life support and obtain basic training in assessing and treating chemical, biological, radiological, nuclear, and explosive agents.

#### Suggested resources for NYC pediatricians and other primary care providers include:

- NYC DOHMH Pediatric Preparedness Web site: [www.nyc.gov/html/doh/html/bhpp/bhpp-focus-ped.shtml](http://www.nyc.gov/html/doh/html/bhpp/bhpp-focus-ped.shtml).
- NYC DOHMH Pediatric Disaster Toolkit for Hospitals [www.nyc.gov/html/doh/html/bhpp/bhpp-focus-ped-toolkit.shtml](http://www.nyc.gov/html/doh/html/bhpp/bhpp-focus-ped-toolkit.shtml)
- American Academy of Pediatrics: Children, Terrorism, and Disasters: [www.aap.org/terrorism/index.html](http://www.aap.org/terrorism/index.html)
- American Academy of Pediatrics, The Pediatrician and Disaster Preparedness: Policy Statement, Committee on Pediatric Emergency Medicine, Committee on Medical Liability and the Task Force on Terrorism <http://aappolicy.aapublications.org/cgi/content/full/pediatrics;117/2/560>
- American Academy of Pediatrics Emergency Information Form: [www.acep.org/webportal/PatientsConsumers/MedicalForms/EmergencyInformationFormforChildrenWithSpecialHealth.htm](http://www.acep.org/webportal/PatientsConsumers/MedicalForms/EmergencyInformationFormforChildrenWithSpecialHealth.htm)

- Keep an up-to-date Emergency Information Card with patients' medical information, should the regular health care provider be unavailable.
- 5. **Know where to find essential information during an emergency.** Information critical for NYC health care providers will be posted on the NYC DOHMH Health Alert Network (HAN) and public Web site. Bookmark the following links to online emergency preparedness and response resources on your Web browser, and become familiar with them **before** an emergency occurs.
  - **NYC DOHMH Health Alert Network (HAN):**  
The NYC DOHMH uses the HAN to post important information and emergency updates for NYC health care providers. NYCMED is the single point of entry for providers to access all NYC DOHMH online resources, including the HAN. In order to receive periodic HAN e-mails (including Public Health Alerts), providers must register with NYCMED. If you are not currently a member, go to [www.nyc.gov/health/nycmed](http://www.nyc.gov/health/nycmed). If you have problems accessing NYCMED, please e-mail [nycmed@health.nyc.gov](mailto:nycmed@health.nyc.gov) or call 888-NYC-MED9.
  - **NYC DOHMH Public Web site:**  
[www.nyc.gov/html/doh/html/home/home.shtml](http://www.nyc.gov/html/doh/html/home/home.shtml).  
The Health Department's public Web site contains a library of documents on many emergency preparedness and public health emergency topics. During an emergency, information for health care providers will be posted on this Web site.

- **Greater New York Hospital Association (GNYHA):** [www.gnyha.org](http://www.gnyha.org).  
The GNYHA maintains a comprehensive library of online emergency preparedness documents for the New York City provider.
- **University of Minnesota's Center for Infectious Disease Research and Policy (CIDRAP):** [www.cidrap.umn.edu](http://www.cidrap.umn.edu).  
This clinical- and public health-oriented Web site contains articles, overviews, clinical pathways, images, and resource lists for key potential bioterrorism agents (e.g., anthrax, plague, etc.) and pandemic influenza. It is updated frequently with news items and links to the latest literature.
- **U.S. Centers for Disease Control and Prevention (CDC):**  
[www.bt.cdc.gov/](http://www.bt.cdc.gov/)  
The CDC's Emergency Preparedness and Response Web site offers many useful resources for the clinician and public health professional, including fact sheets, guidelines, and links to downloadable video broadcasts.
- 6. **Anticipate your technical communication needs now.**  
Health care providers will need to access the latest government advisories and guidelines in order to properly inform their patients. Reliable, high-speed computer service should be commonplace and used routinely in all primary care clinical settings. Providers also will need to communicate directly with patients, their families, public authorities, colleagues, and hospitals. Since routine telecommunications and power may fail during

### Table 4. Communication Tips for Public Health Emergencies

- Become familiar with the NYC DOHMH public Web site and join the NYC DOHMH HAN.
- Bookmark and become familiar with recommended Web sites with information related to bioterrorism preparedness.
- Identify and test alternative ways to communicate with other clinicians in your community.
- Maintain at least one telephone line and fax that are powered by phone company-supplied electricity (these are less likely to fail during power outages).
- Have extra, charged cell phone and laptop batteries.
- Have at least one battery-operated radio with extra batteries and a non-battery portable radio.
- Maintain reliable backup power supply for at least one desktop computer.

catastrophic events, it is advised to maintain additional communication devices (Table 4).

7. **Institute infection control triage procedures in your office or clinic for patients presenting with fever and respiratory symptoms or rash.** These measures will protect patients and staff from both naturally occurring and intentionally released contagious diseases.
- Establish mechanisms to identify, mask, and isolate patients with fever and either respiratory symptoms or rash near their point of entry into clinics and facilities.
  - Make sure anyone with these symptoms or findings is immediately given a surgical mask and removed from the common waiting areas.
  - Designate one examination room (preferably distant from the waiting area) for patients presenting with fever and either respiratory symptoms or rash.
  - Display respiratory etiquette and hand hygiene signs in appropriate languages for your patients. Download free **Cover Your Cough** brochures and posters at: <http://home2.nyc.gov/html/doh/html/cd/cd-cough.shtml>. Brochures and posters also can be ordered in bulk from the NYC DOHMH Provider Literature Distribution Service by calling the NYC DOHMH Call Center:

### Table 5. Join the New York City Medical Reserve Corps

- The NYC Medical Reserve Corps (MRC) is a pre-identified, pre-trained and pre-credentialed group of professionals who are prepared to take part in a coordinated NYC response to a public health emergency.
- Following a bioterrorist attack, thousands of MRC volunteers may be needed to staff emergency antibiotic distribution or vaccination centers. This operation most likely would occur before most clinicians would be needed to evaluate and treat ill patients.
- **Consider volunteering for the NYC MRC.** For more information, go to the MRC Web site: [www.medicalreserve.org](http://www.medicalreserve.org) or call the Provider Access Line at 1-866-NYC-DOH1.

212-720-7136. See examples of available materials: [www.nyc.gov/html/doh/html/cd/cdmaterials.shtml](http://www.nyc.gov/html/doh/html/cd/cdmaterials.shtml).

8. **Become involved with preparedness networks in your neighborhood.** If you are associated with or refer patients to one or more hospitals or hospital networks, integrate your preparedness activities with colleagues from these institutions. Establish informal clinical networks with other health care providers in your neighborhood. Your standard arrangements for patient coverage may not be sufficient during public health emergencies.
9. **Join the New York City Medical Reserve Corps.** Volunteer to take part in crucial New York City emergency responses if needed (e.g., mass antimicrobial distribution after confirmed dissemination of a bioterrorism agent), and encourage your professional colleagues to do so as well (Table 5).
10. **Prepare comprehensive emergency plans for yourself, your family, and your practice.** Without such plans, you might not be able to respond to your community's needs during a public health emergency. Conduct a drill of each emergency plan at least once a year. Two helpful guides are:
- **Preparing for a Public Health Emergency:** [www.nyc.gov/html/doh/downloads/pdf/bt/bt-prepare-brochure.pdf](http://www.nyc.gov/html/doh/downloads/pdf/bt/bt-prepare-brochure.pdf).
  - **Ready New York: Household Preparedness Guide:** [www.nyc.gov/html/oem/html/ready/household\\_guide.shtml](http://www.nyc.gov/html/oem/html/ready/household_guide.shtml).

## WHAT TO ANTICIPATE IF A BIOTERRORISM AGENT IS RELEASED IN NYC

All NYC health care providers will play a crucial role if NYC faces a bioterrorism attack. Regardless of how, where, or when a potential agent is released, the initial cases could present in any primary care office or emergency department in the New York City metropolitan area. Consequently, every NYC health care professional must consider how they might first encounter and diagnose a victim of bioterrorism. Primary care providers, dermatologists, pulmonologists, infectious disease experts, gastroenterologists, intensivists, or emergency department physicians could be the first to recognize an act of bioterrorism. Once diagnoses are considered and appropriate clinical specimens are collected, the NYC DOHMH can facilitate rapid confirmation in its Public Health Laboratory.

NYC health care providers should expect that their patients will call them for advice. A recent study by the New York Academy of Medicine found that most Americans prefer to discuss bioterrorism-related issues with an expert who has their best interests in mind and is familiar with their medical histories.<sup>8</sup>

Questions for which health care providers will need appropriate answers may include:

- “How will I know if I or my children were infected?”
- “What should I do to protect myself and my family?”
- “Should I wear a mask?”
- “Should I stay indoors?”
- “Where can I get treatment for myself and my children?”
- “Should I leave the city, or should I stay?”

Staying informed about the constantly changing emergency circumstances following a bioterrorist attack will be crucial for all NYC health care providers.

If a covert, sophisticated bioterrorism agent is released in NYC, outcomes will depend largely on the swiftness of detection and how quickly effective antimicrobial prophylaxis can be given to those exposed. You can play an important role by learning to recognize signs and patterns of bioterrorism and joining the NYC Medical Reserve Corps to help provide protection for New Yorkers during a biological attack. ♦

## RESOURCES:

### Reporting Bioterrorism:

Suspected cases of bioterrorism should be reported to:  
Business hours: NYC DOHMH's Bureau of Communicable Disease  
212-788-9830

Non-business hours: NYC DOHMH's Poison Control Center  
212-764-7667 or 800-1222

### General Emergency Preparedness:

Greater New York Hospital Association (GNYHA)  
[www.gnyha.org](http://www.gnyha.org)

Center for Infectious Disease Research and Policy (CIDRAP)  
[www.cidrap.umn.edu](http://www.cidrap.umn.edu)

U.S. Centers for Disease Control and Prevention (CDC)  
[www.bt.cdc.gov/](http://www.bt.cdc.gov/)

Preparing for a Public Health Emergency  
[www.nyc.gov/html/doh/downloads/pdf/bt/bt-prepare-brochure.pdf](http://www.nyc.gov/html/doh/downloads/pdf/bt/bt-prepare-brochure.pdf)

Ready New York: Household Preparedness Guide  
[www.nyc.gov/html/oem/html/ready/household\\_guide.shtml](http://www.nyc.gov/html/oem/html/ready/household_guide.shtml)

Communicating in a Health Emergency  
[www.nyc.gov/html/doh/downloads/pdf/bt/comm-health-emergency-guide.pdf](http://www.nyc.gov/html/doh/downloads/pdf/bt/comm-health-emergency-guide.pdf)

Emergency Preparedness: Addressing the Needs of Persons with Disabilities  
National Consensus Conference 2007  
[www.nod.org/index.cfm?fuseaction=Page.viewPage&pagel=11](http://www.nod.org/index.cfm?fuseaction=Page.viewPage&pagel=11)

### Pediatric:

NYC DOHMH Pediatric Preparedness Web site  
[www.nyc.gov/html/doh/html/bhpp/bhpp-focus-ped.shtml](http://www.nyc.gov/html/doh/html/bhpp/bhpp-focus-ped.shtml)

NYC DOHMH Pediatric Disaster Toolkit for Hospitals  
[www.nyc.gov/html/doh/html/bhpp/bhpp-focus-ped-toolkit.shtml](http://www.nyc.gov/html/doh/html/bhpp/bhpp-focus-ped-toolkit.shtml)

Pediatric Terrorism and Disaster Preparedness (AHRQ)  
[www.ahrq.gov/research/pedprep/resource.htm](http://www.ahrq.gov/research/pedprep/resource.htm)

American Academy of Pediatrics – Children, Terrorism, and Disasters  
[www.aap.org/terrorism/index.html](http://www.aap.org/terrorism/index.html)

American Academy of Pediatrics, Emergency Preparedness for Children with Special Health Needs: [www.aap.org/advocacy/emergprep.htm](http://www.aap.org/advocacy/emergprep.htm)

American Academy of Pediatrics, The Pediatrician and Disaster Preparedness: Policy Statement, Committee on Pediatric Emergency Medicine, Committee on Medical Liability and the Task Force on Terrorism <http://aappolicy.aappublications.org/cgi/content/full/pediatrics;117/2/560>

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<http://aappolicy.aappublications.org/cgi/content/full/pediatrics;117/2/e340>

Pediatric Emergency Preparedness for Disasters, Terrorism and Public Health Emergencies: National Consensus Conference 2007 [www.bt.cdc.gov/children/](http://www.bt.cdc.gov/children/)

### Mental Health Disaster Preparedness:

NYC DOHMH Mental Health and Disaster Preparedness and Response Web site:  
[www.nyc.gov/html/doh/html/mhdpr/mhdpr.shtml#b=12](http://www.nyc.gov/html/doh/html/mhdpr/mhdpr.shtml#b=12)

Mental Health Disaster Preparedness Fact Sheets:  
[www.nyc.gov/html/doh/html/mhdpr/mhdpr-fact.shtml](http://www.nyc.gov/html/doh/html/mhdpr/mhdpr-fact.shtml)

SAMHSA'S National Mental Health Information Center: Emergency Mental Health and Traumatic Stress  
<http://mentalhealth.samhsa.gov/cmhs/EmergencyServices/>

Mental Health and Traumatic Events (US Department of Health and Human Services) [www.hhs.gov/disasters/index.shtml#post](http://www.hhs.gov/disasters/index.shtml#post)

Coping with a Traumatic Event: Information for Health Professionals (CDC):  
[www.bt.cdc.gov/masscasualties/copingpro.asp](http://www.bt.cdc.gov/masscasualties/copingpro.asp)

References Available Online: [www.nyc.gov/html/doh/downloads/pdf/chi/chi26-7-ref.pdf](http://www.nyc.gov/html/doh/downloads/pdf/chi/chi26-7-ref.pdf)

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**DOHMH JOB OPENINGS:** We seek doctors, nurses, administrators, social workers, and other public health professionals. Visit [www.nyc.gov/health/careers](http://www.nyc.gov/health/careers) to view openings.



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## BIOTERRORISM PREPAREDNESS FOR HEALTH CARE PROVIDERS

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**If you suspect disease from a potential bioterrorism event, call the New York City Department of Health and Mental Hygiene (NYC DOHMH) IMMEDIATELY:  
Business Hours: (212) 788-9830 • Non-Business Hours: (212) POISONS or 800-222-1222**

|                                 | Bioterrorism threat disease description                                                                                                                                                                                                                                              | Differential diagnosis                                                                                                                                                                                                                              | Picture | Initial laboratory & other diagnostic test results                                                                                                                                                                                                                                                | Immediate public health & infection control actions                                                                                                                                                                                                                                                                                                                          |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Respiratory syndrome with fever | <b>Inhalational Anthrax</b><br>Abrupt onset of fever, malaise, chest pain, respiratory distress; typically, without radiographic findings of pneumonia; no history of trauma or chronic disease; without treatment, progression to shock and death within 24-36 hours.               | Dissecting aortic aneurysm, pulmonary embolism, influenza                                                                                                                                                                                           |         | Chest X-ray with widened mediastinum with or without effusions; Chest CT with mediastinal adenopathy, edema and effusions with areas of high density; non-motile, non-hemolytic gram positive bacilli in sputum or blood; definitive testing available at the NYC DOHMH Public Health Laboratory. | Call NYC DOHMH. Alert your laboratory to possibility of anthrax. No person-to-person transmission. Infection control: standard precautions. Ask family members/close contacts of patient to stay at the hospital (if already present) for public health interview.                                                                                                           |
|                                 | <b>Pneumonic Plague</b><br>Apparent severe community-acquired pneumonia but with hemoptysis, cyanosis, gastrointestinal symptoms, shock, and occasional acral necrosis; without treatment, respiratory failure and death within 24-36 hours.                                         | Community-acquired pneumonia, Hantavirus pulmonary syndrome, meningococemia, rickettsiosis, influenza                                                                                                                                               |         | Gram negative bacilli or coccobacilli in sputum, blood or lymph node; safety pin appearance with Wright or Giemsa stain; definitive testing available at the NYC DOHMH Public Health Laboratory.                                                                                                  | Call hospital infection control and NYC DOHMH. Ask family members/close contacts of patient to stay at the hospital (if already present) for public health interview and chemoprophylaxis; get detailed address and phone number information. Alert laboratory of possibility of plague. Infection control: droplet precautions in addition to standard precautions.         |
|                                 | <b>Pneumonic tularemia</b><br>Fever, chills, rigors, headache, myalgias, coryza, sore throat initially; followed by weakness, anorexia, weight loss. Substernal discomfort, dry cough. Regional lymphadenopathy may be present if originated from glandular or ulceroglandular form. | Community-acquired pneumonia, Hantavirus pulmonary syndrome, rickettsiosis, influenza                                                                                                                                                               |         | Small, faintly-staining, slow-growing, gram negative coccobacilli in smears or cultures of sputum, blood. Slow-growing organism; cultures may need to be held. CXR may show infiltrate, hilar adenopathy, effusion. Definitive testing available at the NYC DOHMH Public Health Laboratory.       | Notify your laboratory if tularemia suspected—microbiological testing should be done in a biological safety cabinet to prevent lab-acquired infection. Ask family members/close contacts of patient to stay at the hospital (if already present) for public health interview. Call the NYC DOHMH. Infection control: standard precautions. No person-to-person transmission. |
| Dermatologic syndrome           | <b>Cutaneous anthrax</b><br>Erythematous papule that evolves into vesicle, followed by eschar. Satellite lesions may be present. Painless, with significant surrounding edema and occasional swollen lymph nodes. May have fever.                                                    | Insect bite (e.g., spider, tick), bacterial infection, tularemia, cat-scratch disease, ecthyma gangrenosum, cutaneous leishmaniasis                                                                                                                 |         | Call NYC DOHMH before obtaining specimens. Attempt culture and PCR from ulcer base. Punch biopsy of non-necrotic skin for PCR, culture and immunohistochemical staining at CDC. Blood culture. Gram positive rods evident on stain.                                                               | Call NYC DOHMH. Dermatologic consult. Alert your laboratory to possibility of anthrax. No person-to-person transmission. Infection control: standard precautions. Ask family members/close contacts of patient to stay at the hospital (if already present) for public health interview.                                                                                     |
|                                 | <b>Smallpox</b><br>Papular rash with fever that begins on the face and extremities and uniformly progresses to vesicles and pustules; headache, vomiting, back pain, and delirium common.                                                                                            | Varicella, disseminated herpes zoster, vaccinia, monkeypox, cowpox                                                                                                                                                                                  |         | Clinical diagnosis with laboratory confirmation; vaccinated, gowned and gloved person obtains specimens (scabs or swabs of vesicular or pustular fluid). Call NYC DOHMH immediately before obtaining specimen; definitive testing available through CDC.                                          | Call hospital infection control and NYC DOHMH immediately. Ask family members/close contacts of patient to stay at the hospital (if already present) for public health interview and vaccination; get detailed address and phone number information. Infection control: airborne and contact precautions in addition to standard precautions.                                |
|                                 | <b>Viral hemorrhagic fever (e.g., Ebola)</b><br>Fever with mucous membrane bleeding, petechiae, thrombocytopenia and hypotension in a patient without underlying malignancy.                                                                                                         | Typhoid, dysentery, meningococemia, malaria, typhus, leptospirosis, borreliosis, thrombotic thrombocytopenic purpura (TTP), hemolytic uremic syndrome (HUS), plague                                                                                 |         | Definitive testing available through the CDC. Call NYC DOHMH immediately to facilitate obtaining diagnosis.                                                                                                                                                                                       | Call hospital infection control and NYC DOHMH immediately. Ask family members/close contacts of patient to stay at the hospital (if already present) for public health interview and follow-up; get detailed address and phone number information. Infection control: contact precautions in addition to standard precautions.                                               |
| Neurological syndrome           | <b>Botulism</b><br>Afebrile. Acute bilateral descending flaccid paralysis beginning with cranial nerve palsies.                                                                                                                                                                      | Guillain-Barré syndrome, myasthenia gravis, midbrain stroke, tick paralysis, Mg ++ intoxication, organophosphate or carbon monoxide poisoning, paralytic shellfish, or belladonna-like alkaloid poisoning, polio, Lambert-Eaton myasthenic syndrome |         | CSF protein normal; EMG with repetitive nerve stimulation shows augmentation of muscle action potential; toxin assays of serum, feces, or gastric aspirate available at the NYC DOHMH Public Health Laboratory.                                                                                   | Call the NYC DOHMH immediately. Request botulinum antitoxin from the NYC DOHMH. Infection control: standard precautions.                                                                                                                                                                                                                                                     |
|                                 | <b>Encephalitis (Venezuelan Equine, Eastern Equine, Western Equine)</b><br>Encephalopathy with fever and seizures and/or focal neurologic deficits, altered mental status.                                                                                                           | Herpes simplex, post-infectious, other viral encephalitides                                                                                                                                                                                         |         | Serologic testing available at New York State DOH and CDC.                                                                                                                                                                                                                                        | Call NYC DOHMH. Ask family members/close contacts of patient to stay at the hospital (if already present) for public health interview. Infection control: standard precautions.                                                                                                                                                                                              |
| Gastrointestinal syndrome       | <b>GI Anthrax Intestinal</b><br>Fever, abdominal pain and tenderness, nausea and vomiting, right lower quadrant fullness on exam, ascites, flushed face, red conjunctivae, shock                                                                                                     | <b>Intestinal:</b> Typhoid and other enteric fevers, non-specific gastroenteritis, brucellosis, typhoidal tularemia, appendicitis                                                                                                                   |         | <b>Intestinal:</b> Gram positive rods by stain and/or culture positive for <i>B. anthracis</i> in blood, mesenteric lymph nodes, and/or ascitic fluid                                                                                                                                             | Call NYC DOHMH. Alert your laboratory to possibility of anthrax. No person-to-person transmission. Ask family members/close contacts of patient to stay at the hospital (if already present) for public health interview. Infection control: standard precautions.                                                                                                           |
|                                 | <b>Oropharyngeal*</b><br>Febrile, painful swelling of neck with cervical lymphadenopathy and soft tissue edema, oral and pharyngeal ulcers followed by pseudomembrane development                                                                                                    | <b>Oropharyngeal:</b> Infectious mononucleosis, diphtheria, non-specific pharyngitis                                                                                                                                                                |         | <b>Oropharyngeal:</b> Gram positive rods by stain on throat smear and/or <i>B. anthracis</i> grown from pharyngeal culture and/or blood                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                              |
|                                 | <b>Common pathogens (e.g., Salmonella species)</b><br>Cluster of patients with nausea, vomiting, and/or diarrhea with or without fever                                                                                                                                               |                                                                                                                                                                                                                                                     |         | Cultures of stool and/or blood with growth for typical pathogen                                                                                                                                                                                                                                   | Call NYC DOHMH. Depending on route of delivery (e.g., milk processing facility, restaurant salad bar), public health officials will coordinate investigation, potential closing of facility. Infection control: standard precautions.                                                                                                                                        |

## CME/CNE Activity Bioterrorism Preparedness For Health Care Providers

- Which of the following bioterrorism incidents is the LEAST likely to occur?
  - Dissemination of anthrax in envelopes through the US Postal Service.
  - A covert attack by a highly trained, state-funded group, with sophisticated military weapons.
  - An explosion in a public square caused by a home-made bomb that contains bacterial cultures taped to the device.
  - A few hours after enjoying a Thanksgiving meal at a local restaurant, residents from a college town in Iowa are afflicted with nausea, vomiting, abdominal pain, and bloody diarrhea.
- In July, over the course of 4 days, an increasing number of office workers in a large New York City investment company have been experiencing mild fever, sore throat, non-productive cough, fatigue, and general body aches. The company's Employee Health Director then learns that some of these people have been taken to emergency departments with increasing breathing difficulty and chest tightness. Which next steps should the Director take?
  - Contact the NYC Department of Health and Mental Hygiene to report an unusually high incidence of mid-summer respiratory illness among employees.
  - Monitor fax and email for Health Alert Network (HAN) alerts from the NYC Department of Health and Mental Hygiene.
  - Begin to collect information on ill employees including demographics, work location, job type, common facility usage (gymnasium, cafeteria, conference room, etc).
  - Maintain and reinforce routine respiratory etiquette and hand hygiene protocol in the Employee Health Clinic and office areas.
  - All of the above.
- Which of the following emergency preparedness steps is NOT recommended by the NYC Department of Health and Mental Hygiene for bioterrorist events in New York City?
  - Register with NYC MED, the medical portal of NYC DOHMH, to receive public health alerts via the HAN (Health Alert Network).
  - Plan to include additional provisions for children, the elderly, and other people with special needs.
  - Contact the NIH (National Institutes of Health) to obtain public health alerts and key emergency preparedness information.
  - Volunteer for the New York City Medical Reserve Corps (MRC).
  - Evaluate the speed and reliability of your current telecommunications systems, and make necessary upgrades.

- In a bioterrorist event, the first responder(s) is/are most likely to be:
  - Police and fire departments.
  - Individual civilians posting on the Internet and/or other media outlets about announced threats.
  - Astute clinicians in emergency departments and outpatient settings who become aware of an unusual disease presentation, clustering, or demographic distribution among their patients.
  - The NYC Department of Health and Mental Hygiene responding to data collected by sophisticated environmental sampling methods.
  - a and c.
- When a biological threat agent release is suspected, the NYC Department of Health and Mental Hygiene will provide health care providers with:
  - Recommendations on diagnostic pathways; specimen collection; patient treatment and prophylaxis; infection control.
  - Large-scale isolation and quarantine facilities.
  - Removal of possibly contaminated items from homes and commercial venues.
  - a and b.
  - b and c.
- How well did this continuing education activity achieve its educational objectives?  
 A. Very well       B. Adequately       C. Poorly

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## Continuing Education Activity

This issue of *City Health Information*, including the continuing education activity, can be downloaded from the publications section at [nyc.gov/health](http://nyc.gov/health). To access *City Health Information* and Continuing Medical Education online, visit [www.nyc.gov/html/doh/html/chi/chi.shtml](http://www.nyc.gov/html/doh/html/chi/chi.shtml).

### Instructions

Read this issue of *City Health Information* for the correct answers to questions. To receive continuing education credit, you must answer 4 of the first 5 questions correctly.

### To Submit by Mail

- Complete all information on the response card, including your name, degree, mailing address, telephone number, and e-mail address. PLEASE PRINT LEGIBLY.
- Select your answers to the questions and check the corresponding boxes on the response card.
- Return the response card (or a photocopy) postmarked **no later than September 30, 2008**. Mail to:

CME Administrator, NYC Dept. of Health and Mental Hygiene,  
2 Lafayette Street, CN-65, New York, NY 10277-1632.

### To Submit Online

Visit [www.nyc.gov/html/doh/html/chi/chi.shtml](http://www.nyc.gov/html/doh/html/chi/chi.shtml) to submit a continuing education test online. Once logged into NYC MED, use the navigation menu in the left column to access this issue of *City Health Information*. Your responses will be graded immediately, and you can print out your certificate.

## CME/CNE Activity

### Bioterrorism Preparedness For Health Care Provider

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THE NEW YORK CITY DEPARTMENT OF  
HEALTH AND MENTAL HYGIENE (DOHMH)  
**CITY HEALTH INFORMATION**  
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#### Objectives

At the conclusion of the activity, the participants should be able to:

1. Describe the spectrum of possible and most probable bioterrorism incidents that might occur in New York City.
2. Identify clinical and epidemiologic indicators of illnesses due to potential biological threat agents.
3. Identify preparedness steps for and responses to bioterrorism incidents, as recommended by the NYC Department of Health and Mental Hygiene.
4. Identify effective methods of communication among health care providers, government authorities, and hospitals during a bioterrorism incident.
5. List critical information resources for public health emergencies.

#### Accreditation

The New York City Department of Health and Mental Hygiene (NYC DOHMH) is accredited by the Medical Society of the State of New York to sponsor continuing medical education for physicians. The NYC DOHMH designates this continuing medical education activity for a maximum of 1.50 AMA PRA Category 1 credit(s). Each physician should only claim credit commensurate with the extent of his/her participation in the activity.

The New York City Department of Health and Mental Hygiene is an approved provider of continuing nursing education by the New York State Nurses Association, an accredited approver of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation.

Contact hours: 1.50, Code: 6WXLFX-PRV-074.

We will *not* share information with other organizations without your permission, except in certain emergencies when communication with health care providers is deemed by the public health agencies to be essential or when required by law. Participants who provide e-mail addresses may receive electronic announcements from the Department about future continuing education activities as well as other public health information.

**Participants must submit the accompanying exam by September 30, 2008.**

#### CME Faculty:

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Scott Harper, MD, MPH, MSc

#### CNE Faculty:

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All faculty are affiliated with the New York City DOHMH, Division of Health Promotion and Disease Prevention.

The faculty does not have any financial arrangements or affiliations with any commercial entities whose products, research, or services may be discussed in this issue.



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