

If you hear these hoofbeats:

- Widened mediastinum on chest x-ray
- Clusters or increased influenza-like illness in summer months
- Rapidly progressive pneumonia death with hemoptysis
- Vesicular rash that starts on extremities
- Hemorrhagic fever syndrome
- Cluster of unusual, severe or unexplained illness
- Unexplained critical illness in otherwise healthy young adult



Consider these zebras:

- Anthrax
- Tularemia
- Plague
- Smallpox
- Viral hemorrhagic fever
- Other potential bioterrorism agents

BIOTERRORISM SYNDROMES

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	Image	Initial laboratory & other diagnostic test results	Immediate public health & infection control actions		Bioterrorism threat disease description	Differential diagnosis	Image	Initial laboratory & other diagnostic test results	Immediate public health & infection control actions
Respiratory syndrome with fever	Inhalation anthrax 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 immediately. 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.	Dermatologic syndrome	Cutaneous anthrax 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, echthyma 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 immediately. 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.
	Pneumonic plague 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 infection control and NYC DOHMH immediately, for consultation on management of suspected cases and persons exposed. 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.		Smallpox 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 infection control and NYC DOHMH immediately, for consultation on management of suspected cases and persons exposed. 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.
	Pneumonic tularemia 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 gram negative coccobacilli in smears or cultures of sputum or blood. Slow-growing organism; cultures may need to be held. Chest x-ray may show infiltrate, hilar adenopathy, effusion. Definitive testing available at the NYC DOHMH Public Health Laboratory.	Call NYC DOHMH immediately. 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.		Viral hemorrhagic fever (e.g., Ebola) 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 infection control and NYC DOHMH immediately, for consultation on management of suspected cases and persons exposed. 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.
Gastrointestinal syndrome	GI anthrax Intestinal: Fever, abdominal pain and tenderness, nausea and vomiting, right lower quadrant fullness on exam, ascites, flushed face, red conjunctivae, shock	Intestinal: Typhoid and other enteric fevers, non-specific gastroenteritis, brucellosis, typhoidal tularemia, appendicitis		Intestinal: 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 immediately. 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.	Neurological syndrome	Botulism 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.
	Oropharyngeal* : Febrile, painful swelling of neck with cervical lymphadenopathy and soft tissue edema, oral and pharyngeal ulcers followed by pseudomembrane development	Oropharyngeal* : Infectious mononucleosis, diphtheria, non-specific pharyngitis		Oropharyngeal* : Gram positive rods by stain on throat smear and/or <i>B. anthracis</i> grown from pharyngeal culture and/or blood			Encephalitis (Venezuelan Equine, Eastern Equine, Western Equine) 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 infection control and NYC DOHMH immediately, for consultation on management of suspected cases and persons exposed. Ask family members/close contacts of patient to stay at the hospital (if already present) for public health interview. Infection control: standard precautions.
	Common pathogens (e.g., Salmonella species) 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 immediately. Depending on route of delivery (e.g., milk processing facility or restaurant salad bar), public health officials will coordinate investigation, potential closing of facility. Infection control: standard precautions.						

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"If you hear these hoofbeats..." theme courtesy of Minnesota Department of Health

