Biological Warfare Agent

Tacoma - Pierce County Health Department
Healthy People in Healthy Communities

Oct. 2017 • Information for Pierce County Medical Provider

Communicable Disease Division
3629 South D Street, Tacoma, WA 98418
(253) 798-6410 (phone) • (253) 798-7666 (fax)

Summary of Biological Warfare Agents

Agent	Clinical Syndrome	Incubation Period	Diagnostic Samples	Diagnostic Assay	Patient Isolation Precautions	Potential Treatment Options*	Potential Post-Exposure Prophylaxis*	Comments
Anthrax	Inhalational — febrile prodrome, respiratory distress, bacteremia, meningitis. CXR – wide mediastinum Cutaneous — lesion progressing from papule to necrotic ulcer GI syndrome (less likely) — n/v, bloody diarrhea	One to five days (up to 60 days described)	Sputum, blood, CSF; stool, ulcer swab (BSL–2)	Gram stain, culture	Standard precautions (no person-to-person transmission except small risk for direct contact with drainage from cutaneous lesion)	Ciprofloxacin or doxycycline, depending upon susceptibly testing	Ciprofloxacin, doxycycline, or amoxicillin, depending on susceptibility testing of source; vaccine	Vaccine schedule 0.5 ml SC at 0, 2, 4 and 6 wk, 12 and 18 mo, then annual boosters. Vaccine not currently available to public.
Brucellosis	Febrile prodrome, osteoarticular disease, genitourinary infection, hepatitis; endocarditis and CNS involvement rarely	5–60 days, occasionally months	Serum; blood, bone marrow (BSL–2)	Serology; culture	Standard precautions; contact isolation if draining lesions	Doxycycline plus rifampin	Doxycycline pllus rifampin	Trimethoprim-sulfamethoxasole can be substituted for rifampin, although 30% relapse rate
Plague	Pneumonic — fulminant pneumonia, septicemia; bubonic less likely	2–3 days	Blood, sputum, lymph node aspirate; serum (BSL–2/3)	Gram, Wright, Giemsa or FA stain; culture; Serology	Pneumonic – droplet precautions until patient treated for 3 days	Streptomycin 30 mg/kgIM q d in 2 divided doses x 10 days; gentamicin; doxycycline; chloramphenicol	Doxycycline 100 mg po q 12 h x seven days; ciprofloxacin 500 mg po BID x 7 days	Vaccine not protective against pneumonic infection
Q fever	Fever, systemic symptoms, pneumonia, hepatosplenomegaly	10–40 days	Serum (BSL–2)	Serology	Standard precautions	Tetracycline 500 mg po QID x 5-7 days; doxycycline 100 mg po BID x 5-7 days	Doxycycline or tetracycline: start 8–12 d postexposoure x five days	Vaccine available — investigational
Tularemia	Ulceroglandular; typhoidal (septicemic) - fever, weight loss, pneumonia	2–10 days	Serum; Blood, sputum, ulcer swab, lymph node aspirate (BSL–2/3)	Serology; Gram stain, culture	Standard precautions	Streptomycin 30 mg/kg IM x 10–14 days; gentamicin 3–5 mg/kg/day x 10-14 days	Doxycycline 100 mgpo q 12hrs x 14 days; tetracycline g/d po x 14 days	Transfer culture to BSL–3 after initial isolation of organism

Agent	Clinical Syndrome	Incubation Period	Diagnostic Samples	Diagnostic Assay	Patient Isolation Precautions	Potential Treatment Options*	Potential Post-Exposure Prophylaxis*	Comments
Smallpox	Fever, systemic toxicity, vesicular rash with centrifugal distribution, lesions synchronous in stage of development	7–17 days	Pharyngeal swab, scab material (BSL–4)	ELISA, PCR, viral isolation	Airborne precautions	None (cidofovir effective in vitro)	Vaccine within four days of exposure, VIG (0.6 ml/kg IM within three days) if vaccine contraindicated	Pre-exposure and post-exposure vaccination recommended if >three yrs since last vaccination
Viral encephalitides	VEE: fever, headache, malaise, photophobia, vomiting; WEE/EEE: febrile prodrome, somnolence, delirium	VEE 2-6 days; WEE/EEE 7–14 days	Serum; CSF (BSL–2)	Serology; Viral isolation	Standard precautions	Supportive	None	Vaccines available, although poorly immunogenic
Viral hemorrhagic fevers	Fever, myalgia, hypotension, hemorrhagic features	4–21 days	Serum; blood, formalin-fixed tissue biopsy (BSL–4)	Serology; Viral isolation, PCR, immunohistological detection of antigen in tissue	Contact precautions (consider additional precautions if massive hemorrhage)	Supportive; ribavirin for CCHF/arenaviruses; antibody passive for AHF, BHF, Lassa, CCHF	None	Aggressive management of hypotension, secondary infections
Botulinum	Ocular symptoms, skeletal muscle paralysis – symmetric, descending; respiratory failure	One to five days	Nasal swab, serum, stool (BSL–-2)	Antigen detection (toxin) – ELISA	Standard precautions	DOD heptavalent antitoxin serotypes A-G; CDC trivalent equine antitoxin serotypes A, B, E	None	Skin testing for hypersensitivity before equine antitoxin administration
Staphylococcal enterotoxin B	Fever, headache, cough, respiratory distress, GI symptoms	One to six hours	Nasal swab, serum, urine (BSL–2)	Antigen detection (toxin) – ELISA; serology	Standard precautions	Supportive	None	Vomiting and diarrhea may occur if toxin is swallowed

*Specific treatment and prophylaxis protocols will be under the direction of Centers for Disease Control and Prevention (CDC) and Washington State Department of Health. BSL = biosafety level

Clues to a possible bioterrorist attack: Single case of disease due to uncommon, non-indigenous agent in patient with no history suggesting an explanation for illness; cluster of patients with similar syndrome with unusual characteristics (e.g., unusual age distribution) or unusually high morbidity and mortality; unexplained increase in the incidence of a common syndrome above seasonally-expected levels.

Contact Tacoma-Pierce County Health Department at (253) 798-6410, (253) 798-6534 after business hours, to report suspected cases or obtain more information.

This material was adapted from a similar chart from Philadelphia Department of Public Health.