BIOLOGICAL AGENT REFERENCE LIST

Biological Agents	Symptomology	Incubation Period	Transmission	Treatment
Anthrax *Bacillus anthracis*.	**Cutaneous:** Skin infection begins as a raised itchy bump resembling an insect bite, progressing to a vesicle, then a painless ulcer 1-3 cm in diameter with a necrotic area in the center. Lymph glands in the adjacent area may swell. Death is rare with antimicrobial therapy **Inhalation:** Initial symptoms may resemble a common cold with fever, headache, fatigue, dyspnea. After several days, the symptoms may progress to severe breathing problems and shock. Inhalation anthrax is usually fatal. **Intestinal:** Initial signs of nausea, loss of appetite, vomiting, fever are followed by abdominal pain, vomiting of blood, and severe diarrhea. Intestinal anthrax results in death in 25% to 60% of cases.	1-5 days	Infection can occur in three forms: cutaneous (skin), inhalation, and gastrointestinal. Humans can become infected with anthrax by handling products from infected animals or by inhaling anthrax spores from contaminated animal products. Anthrax can also be spread by eating undercooked meat from infected animals. - spores can survive outside host for years	Various intravenous antibiotics are effective such as Penicillin V or Penicillin G, Tetracycline, Streptomycin, Doxycycline or Erythromycin

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Botulism *Clostridium botulinum*. Rare but serious paralytic illness caused by a nerve toxin that is produced by the bacterium *Clostridium botulinum*.	Blurred vision, double vision, photophobia, slurred speech, muscle weakness, progressive paralysis, respiratory failure, death in untreated severe cases	Symptoms generally begin 18 to 36 hours after eating a contaminated food, but they can occur as early as 6 hours or as late as 10 days Generally felt to be within 1-5 days	Ingestion of bacterium Clostridium botulinum	Supportive therapy and administration of antitoxin Antitoxin available only through CDC
Hemorrhagic fever Numerous causes, commonly as component of: Ebola virus Hanta virus Sabia virus Guanarito virus Dengue virus	High fever, low blood pressure, subcutaneous hemorrhage, bleeding from mucous membranes, organ failure, death	4-21 days	Through exposure to patient fluids	Supportive therapy, ribavirin for some viruses

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Biological Agents	Symptomology	Incubation Period	Transmission	Treatment
Plague *Yersinia pestis* - bacillus • **Bubonic plague** • **Septicemic plague** • **Pneumonic plague**	• **Bubonic plague:** enlarged, tender lymph nodes, fever, chills and prostration • **Septicemic plague:** fever, chills, prostration, abdominal pain, shock and bleeding into skin and other organs • **Pneumonic plague:** fever, chills, cough and difficulty breathing; rapid shock and death if not treated early Once a human is infected, untreated progression of the disease leads to blood infection (septicemic plague) and eventually to lung infection (pneumonic plague) and it can be transmitted to others through the expulsion of infective respiratory droplets by coughing.	2-6 days – progression to from bubonic plague to pneumonic plague is usually 3 days	Highly contagious via respiratory droplets - aerosol route in Pneumonic Plague Bubonic plague is flea-borne, from infected rodents to humans or direct contact with infected tissues or fluids from handling sick or dead animals.	Isolation of the patient with intravenous antibiotic therapy such as streptomycin or gentamicin, but a number of other Intravenous antibiotics are also effective. Generally dosed at twice daily for 14 days.

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Smallpox	Fever, malaise, rash, headache, backache, vomiting, marked prostration, delirium in some cases, abdominal pain, death results in 20-30% of cases. Rash starts as tense blisters/vesicles, 6mm in diameter, progresses to turbid fluid filled lesions (pustules), progressing to shrunken and drying lentil-like crusts in the skin. Eventually they separate leaving a sunken scar. **The hard material which comes away contains smallpox virus in its substance**. At this point in the disease process, the distribution of this focal rash is characteristic of small pox affecting the head and extremities much more than the trunk.	7-17 days	Highly contagious via respiratory droplets -aerosol or contact with pox scabs	Symptomatic treatment only; vaccine only through CDC

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Biological Agents	Symptomology	Incubation Period	Transmission	Treatment
Tularemia	Fever, vomiting, diarrhea, intestinal pain, weakness, prolonged weight loss; ingestion of organism may produce throat infection - seldom fatal	2-10 days – usually after 3 days	Most common - Inoculation of skin or mucous membranes with blood or tissue of infected victim. Contact with fluids from infected deer flies or ticks; or handling or eating insufficiently cooked rabbit meat. Less common - Transmission is through drinking contaminated water, inhaling dust from contaminated soil.	Antibiotics such as Streptomycin, Gentamicin and Tobramycin.

CHEMICAL AGENT REFERENCE LIST

Chemical Agents	Symptomology	Onset	Treatment
Blood agents Arsine Cyanogen Chloride Hydrocyanic Acid Methyl isocyanate	Panting, convulsions, loss of consciousness, apnea	Minutes	Nitrites, sodium thiosulfate
Choking Agents (Asphyxiation) Ammonia Chlorine Phosgene	Tightness in the chest, coughing, dyspnea	Minutes to hours	Oxygen, bronchodilators, ventilation
Nerve Agents (Gases or Liquids) GF VX Sarin (GB) Soman (GD) Tabun (GA)	Miosis, rhinorrhea, dyspnea, convulsions, loss of consciousness	Seconds to minutes	Decontamination, atropine, pralidoxime, ventilation, anticonvulsants
Vesicant Agents (blistering agents) Lewisite Mustard Oxime Phosgene	Erythema, blisters, eye irritation, blindness, dyspnea, coughing	Minutes to hours	Decontamination, topical antibiotics, bronchodilators, ventilation, British antiLewisite