



Anthrax: Assessing the threat

Definition:

- Anthrax is an acute infectious disease in humans and animals that is caused by the bacterium *Bacillus anthracis* and is highly lethal in some forms.
- Anthrax is one of only a few bacteria that can form long lived spores. If conditions are unfavorable, the bacteria can enter a dormant state to wait for another host to continue their life cycle.
- On breathing, ingesting or getting anthrax spores in a cut in the skin these spores reactivate themselves and multiply in their new host very rapidly.

At Issue:

- In the event of an anthrax attack, effective antibiotics would be essential to saving the lives of individuals potentially exposed to the spores.
- There are currently three antibiotics determined to be clinically effective in the treatment of anthrax exposure: penicillin, doxycycline, and ciprofloxacin, and it is possible that anthrax strains resistant to one or more of the currently utilized therapeutics will be employed in an attack.
- Ciprofloxacin, the antibiotic recommended by the CDC, is expensive and not covered under most medical-insurance plans if prescribed as a prophylactic. A two-week supply of the drug for a family of four costs about \$400. The recommended dosage is a 60 day treatment.

On Notice:

- Post 9/11, the Bush Administration raises profile of public health threats from the deliberate use of weapons of mass destruction (WMD), chemical, biological, radiological or nuclear (CBRN) agents.
- The Centers for Disease Control and Prevention has classified anthrax as a Category A bioterrorism agent – which is considered the biggest threat to national security.
- In the Fall of 2001, anonymous letters were mailed to various media organizations and government officials in the United States. The letters contained a high-grade, finely textured version of anthrax, later identified as identical to the Ames strain. Twenty-two

individuals became ill due to the anthrax exposure and five people died as a result of inhalation anthrax.

The Facts:

- Researchers believe that inhalation anthrax is fatal in approximately 75% of cases, even with appropriate treatment.

Of the biological agents that may be used as weapons, there is a limited number of organisms that, in worst case scenarios, could cause disease and deaths in sufficient numbers to gravely impact a city or region. Anthrax is one of the most serious of these.

Federally Funded Programs:

- Post 9/11, actual and planned spending across all U.S. Government agencies on civilian biodefense has been \$22.1 billion. In FY 2005 alone, the government's spending on civilian biodefense initiatives was 18 times the spending in FY 2001.
- *Department of Health & Human Services (HHS):* Project BioShield is the most significant piece of biodefense legislation passed to date. Signed by President Bush in July 2004, the Act provides \$5.6 billion in funding for biodefense. The legislation authorizes HHS to develop vaccines for supply to a national stockpile of countermeasures against bioterrorism agents
- *Department of Defense (DOD):* The Department of Defense has awarded contracts to create national stockpiles of countermeasures that specifically benefit the War-fighter. These military stockpiles are entirely separate from the DHS's and HHS's funds for civilian stockpiles. By providing funds for Phase 3 development, the government is stepping in early to absorb part of the risk of development.
- *National Institutes of Health (NIH)* is a key source of grant funding for biodefense research, especially in Phases 1 and 2. In FY 2007, the NIH biodefense research portfolio is expected to be \$1.9 billion, a 6.1% increase since FY 2006 and over 400% since 9/11.

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