

Pre-Attack Anthrax Vaccination – A Threat-Based Review

- Security Threat is defined as a function of three variables
 - Probability = (Intent x Capability)
 - Vulnerability
 - Impact
- As any of these variables approaches zero, so does the overall risk.
- Threat of an anthrax attack:
 - Those with access to classified intelligence data are routinely administering the anthrax vaccine to US-deployed, DOD personnel and National Guard Civil Support Teams.^{1, 2}
 - Declassified information has confirmed that known enemies of the United States including Al Qaeda have anthrax weaponization expertise.³
 - The threat of an aerosolized anthrax attack is the number one bioterrorism concern.³
- Vulnerability
 - The U.S. has already suffered a covert, multi-wave, multi-site, lethal anthrax attack.⁴
 - Anthrax can and has been made resistant to all currently stockpiled, pertinent antibiotics.^{5, 6}
 - The anthrax weapon is invisible, odorless, tasteless, and easily re-aerosolized.⁷ Identifying the safe zone and preventing cross contamination from exposed to others is difficult and not fail-safe.⁸
 - Personal Protective Equipment failed 6 of 9 HAZMAT responders to the 2001 Capitol Hill attack.
 - Continuous sampling detectors currently in use in the US Postal Service still allow nearly 28 million parcels in any given hour through before sounding the alarm.
 - Antibiotics have no effect on anthrax spores, or the toxins produced by the organism.⁹
 - Adherence to long term antibiotic regimens, as seen in the 2001 anthrax attacks, is poor.¹⁰
 - In an attack with antibiotic-resistant strains of anthrax of post-exposure antibiotics afford no protection and the vaccine cannot be expected to confer immunity to the victims in time to prevent disease.¹¹
- Impact
 - The destructive capability of weaponized anthrax is equivalent to that of a nuclear bomb.¹²
- Other Facts
 - Adverse events associated with antimicrobial prophylaxis in victims of the 2001 anthrax attacks were commonly reported; 57% (n=3,032/5343) reported adverse events during the first 60 days of treatment.¹³
 - According to the CDC Advisory Committee on Immunization Practices (ACIP), "The anthrax vaccine is recommended for persons involved in emergency response activities including but not limited to, police departments, fire departments, hazardous material units, government responders, and the National Guard."¹⁴
 - The anthrax vaccine is FDA-licensed as safe and effective.¹⁵
 - Over 2.2 million military personnel have received more than 8.7 million doses.
 - The Institute of Medicine has stated that the rate of adverse events for this vaccine is similar to rates with other adult vaccines (flu, HAV, Tetanus).^{16, 17}
 - The Department of Homeland Security has certified the vaccine as a "qualified anti-terrorism technology" under the "Support Anti-Terrorism by Fostering Effective Technology Act" (SAFETY Act).
 - The anthrax vaccine is included as a covered countermeasure under the Public Readiness and Emergency Preparedness Act (PREP Act). This is pursuant to a declaration issued by the U.S. Department of Health and Human Services (HHS) that the threat of exposure to anthrax and the resulting disease constitutes a public health emergency.
- **CONCLUSION:** Regarding a covert attack with a non-contagious biological weapon, the key to community preparedness and resilience is to immunize before the attack. This is especially true if the biological agent is likely to be engineered to be resistant to antibiotics and other post-attack countermeasures.

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