ANTHRAX (Bacillus anthracis) FACT SHEET H - 1

1. **WHAT IS ANTHRAX**? Anthrax is an acute, infectious disease caused by the bacterium Bacillus anthracis. In the past, humans would become infected through skin contact, ingestion or inhalation of the germ from infected animals (most frequently sheep, goats and cattle) or animal products (as in "woolsorter's disease" from exposure to goat hair). Person-to-person transmission of inhalational disease DOES NOT occur. Direct exposure to fluids from skin lesions may result in a secondary cutaneous (skin) infection. In a bioterrorism situation, the organism would most likely be aerosolized to deliver the organism by breathing it in.
2. **WHAT ARE THE SYMPTOMS OF ANTHRAX**? There are three forms of Anthrax: pulmonary, cutaneous (skin), or gastrointestinal, depending on the route of exposure. The symptoms of each are:
   a. **Pulmonary-**
      - 2-60 day incubation period (time before you get sick)
      - Non-specific flu-like symptoms with brief interim improvement
      - 2-4 days after initial symptoms, abrupt onset of respiratory failure and circulatory collapse.
      - Treatable in early stage. Mortality high if treatment initiated after onset of respiratory collapse.

   b. **Cutaneous (skin)-**
      - 1-7 day incubation period
      - Local skin involvement after direct contact with organism
      - Commonly seen on head, forearm or hands
      - Localized itching, followed by papular lesion that turn into a blister and within 2-7 days develop into a depressed black eschar (like a black scab)
      - Usually non-fatal if treated with antibiotics

   c. **Gastrointestinal-**
      - 1-7 day incubation period
      - Abdominal pain, nausea, vomiting and fever following ingestion of contaminated food, usually meat.
      - Bloody diarrhea, vomiting blood
      - Usually fatal after progression to toxemia and sepsis
3. **HOW IS ANTHRAX DIAGNOSED**? Physical findings are typically non-specific. A widened mediastinum may be seen on Chest x-ray in later stages of illness. Pneumonia generally does not occur. *Bacillus anthracis* is detectable by Gram stain of blood and blood culture late in the course of illness. Hemorrhagic meningitis may occur in up to 50% of cases, and the organism may also be found in CSF.

4. **CAN ANTHRAX BE SPREAD FROM PERSON TO PERSON**?
Transmission of Anthrax from person to person is unlikely. Airborne transmission does NOT occur, but direct contact with skin lesions may result in a cutaneous infection. Special precautions should be taken to avoid aerosolization of spores during laboratory procedures and autopsy Needlestick injuries from a bacteremic person would require treatment.
5. **WHAT MEDICAL TREATMENT WOULD BE GIVEN TO A PATIENT EXPOSED TO ANTHRAX**? Antibiotics (Ciprofloxacin, Doxycycline) would be given for 4-8 weeks along with the Anthrax vaccine, if available, at 0, 2 and 4 weeks after exposure.
6. **DO YOU NEED TO ISOLATE A PATIENT WITH ANTHRAX**? No, a patient with Anthrax will be treated with Standard Precautions. Standard Precautions include wearing gloves for contact with nonintact skin, including rashes and skin lesions.
7. **IF A PATIENT IS DISCHARED WITH A DIAGNOSIS OF ANTHRAX, ARE SPECIAL PRECAUTIONS NEEDED TO KEEP OTHER FAMILY MEMBERS SAFE?** If the patient was involved in a gross exposure to the bacterium, cleansing of the skin and potentially contaminated objects (clothes, environmental surfaces) should be undertaken. Decontamination would include:
    - Remove contaminated clothing and store in labeled, plastic bag. Handle clothes minimally to avoid agitation.
    - Shower thoroughly with soap and water.
    - Wear gloves and appropriate barriers (e.g., gowns, masks) when handling contaminated clothing or environmental objects.
    - Decontaminate environmental surfaces using an EPA registered sporicidal/germicidal agent or 10% hypochlorite solution (one part household bleach to 9 parts water). Do not use bleach on skin or hair.
8. **WHAT OTHER INSTRUCTIONS DO I NEED TO KNOW ABOUT AN ANTHRAX ESPOSURE?**
    - Make sure you understand the dosage and side effects of any medications that are prescribed for you or your family members.
    - People recently exposed to Anthrax are not contagious to others.

1. **WHAT IS SMALLPOX?** Smallpox is an acute, viral illness caused by the Orthopox virus, Variola. It was declared eradicated from the World in 1980 but both the U.S. and Russia have stocks of the virus. It is an agent of choice for a bioterrorist since the World's population is considered non-immune, and it is easily transmitted by the airborne route.
2. **WHAT ARE THE SYMPTOMS OF SMALLPOX?** The acute, clinical symptoms are similar to influenza for 2-4 days. Skin lesions appear quickly on the face and extremities (including palms and soles) progressing from macules to blisters. The rash scabs over in 1-2 weeks. The rash differs from chickenpox in that it has a synchronous onset as opposed to the 'waves' of vesicles that chickenpox has. Chickenpox is also mainly distributed on the trunk.
3. **HOW DO YOU GET THE VIRUS INTO YOUR BODY?** Smallpox is transmitted by both large and small respiratory droplets. You can breathe the tiny viral particles into your lungs if you have close contact with someone with the disease. You can also get the viral particles into your body if you touch the smallpox lesions of a patient, or handle their contaminated linens.
4. **WHAT IS THE TIME PERIOD BETWEEN EXPOSURE TO THE VIRUS AND THE SYMPTOMS OF THE DISEASE?** The incubation period for smallpox is 7-17 days with the average being 12 days.
5. **IS SOMEONE WITH SMALLPOX ABLE TO GIVE IT TO ANOTHER PERSON?** Smallpox is very contagious and person to person transmission is very likely from airborne and droplet exposure and by contact with skin lesions or secretions. Patients are considered most infectious if they are coughing or have a hemorrhagic form of smallpox. Patients with smallpox become contagious at the onset of the rash and remain infectious until the scabs separate in about 3 weeks.
6. **WHAT MEDICAL TREATMENT WOULD BE GIVEN TO A PATIENT WITH SMALLPOX?** A smallpox vaccine alone is recommended if given within three days of exposure. If greater than three days since exposure, Vaccinia Immune Globulin (VIG) and vaccination are recommended.
7. **DO YOU NEED TO ISOLATE A PATIENT WITH SMALLPOX?** Yes, a patient with smallpox is very contagious. They will be placed on airborne and contact isolation in the hospital, in rooms that are under negative pressure. Any persons going in the room will wear an N-95 respirator along with gloves and gowns. Only essential personnel will enter these rooms. Transport of patients will be strictly limited. If a smallpox patient must leave a room, she/he will wear a mask, a cover gown and gloves. Patients who die of smallpox should be cremated whenever possible. Cleaning and disinfection of environmental surfaces or patient care equipment should be done with an EPA-registered hospital disinfectant (i.e., Stat III). All disposable items will be double-bagged and autoclaved

or incinerated. All bedding and clothing of smallpox patients will be double bagged and autoclaved prior to laundering.

8 **IF A PERSON IS EXPOSED TO SMALLPOX, WHAT SHOULD THEY DO?**

After consulting a healthcare professional as to the need for vaccination and immune globulin, exposed individuals should monitor themselves daily for the development of a temperature higher than 38°C (101°F). A temperature or flu-like symptoms during the 17-day period following exposure would suggest the development of smallpox. They should immediately report to designated care sites or be isolated at home in order to minimize the risk of exposure to others.

9. **IS VACCINATION CONTRAINDICATED IN ANY PATIENT GROUPS?**

Generally, vaccination with the smallpox vaccine is contraindicated in pregnant women, persons who are immunosuppressed, have HIV disease or have eczema. However, the risk of smallpox vaccine should be weighed against the likelihood for developing smallpox following a known exposure. Vaccinia Immune Globulin should be given at the same time to these groups of patients.