

West Virginia EPI-LOG



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Statewide Disease Facts & Comparisons

ANTHRAX: What everyone should know

Just a month after the September 11, 2001, terrorist attacks on the World Trade Center and the Pentagon, we found ourselves confronting yet another threat: Anthrax. The following are frequently-asked questions and answers about anthrax courtesy of the Centers for Disease Control and Prevention.

What is anthrax?

Anthrax is an acute infectious disease caused by the spore-forming bacterium *Bacillus anthracis*. Anthrax most commonly occurs in wild and domestic lower vertebrates (cattle, sheep, goats, camels, antelopes, and other herbivores), but it can also occur in humans when they are exposed to infected animals or tissue from infected animals.

Why has anthrax become a current issue?

Because anthrax is considered to be a potential agent for use in biological warfare, the Department of Defense (DoD) has begun mandatory vaccination of all active duty military personnel who might be involved in conflict.

How common is anthrax and who can get it?

Anthrax is most common in agricultural regions where it occurs in animals. These include South and Central America, Southern and Eastern Europe, Asia, Africa, the Caribbean, and the Middle East. When anthrax affects humans, it is usually due to an occupational exposure to infected animals or their products. Workers who are exposed to dead animals and animal products from other countries where anthrax is more common may become infected with *B. anthracis* (industrial anthrax). Anthrax in wild livestock has occurred

in the United States.

How is anthrax transmitted?

Anthrax infection can occur in three forms: cutaneous (skin), inhalation, and gastrointestinal. *B. anthracis* spores can live in the soil for many years, and 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. It is rare to find infected animals in the United States.

What are the symptoms of anthrax?

Symptoms of disease vary depending on how the disease was contracted, but symptoms usually occur within 7 days.

Cutaneous: Most (about 95%) anthrax infections occur when the bacterium enters a cut or abrasion on the skin, such as when handling contaminated wool, hides, leather or hair products (especially goat hair) of infected animals. Skin infection begins as a raised itchy bump that resembles an insect bite but within 1-2 days develops into a vesicle and then a painless ulcer, usually 1-3

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Review of Influenza Surveillance West Virginia, 2000-2001 Season

The first line of defense against influenza is a world-wide surveillance system coordinated by the World Health Organization (WHO). This system makes it possible to detect the changes in circulating influenza viruses and the emergence of new influenza A viruses. Early detection of changes in influenza viruses and rapid development of effective vaccines are the keys to defending against influenza each year and responding to a pandemic, which is inevitable. Therefore, the cycle of surveillance and vaccine formulation is a never-ending process.

The 2000-2001 influenza season has drawn to a close. The past influenza season was mild in the United States. The predominant strain nationwide was influenza A (H1N1). However, influenza B viruses were reported more frequently than influenza A viruses in some regions of the U.S.

There were four sources of data in the 2000-2001 season in the State:

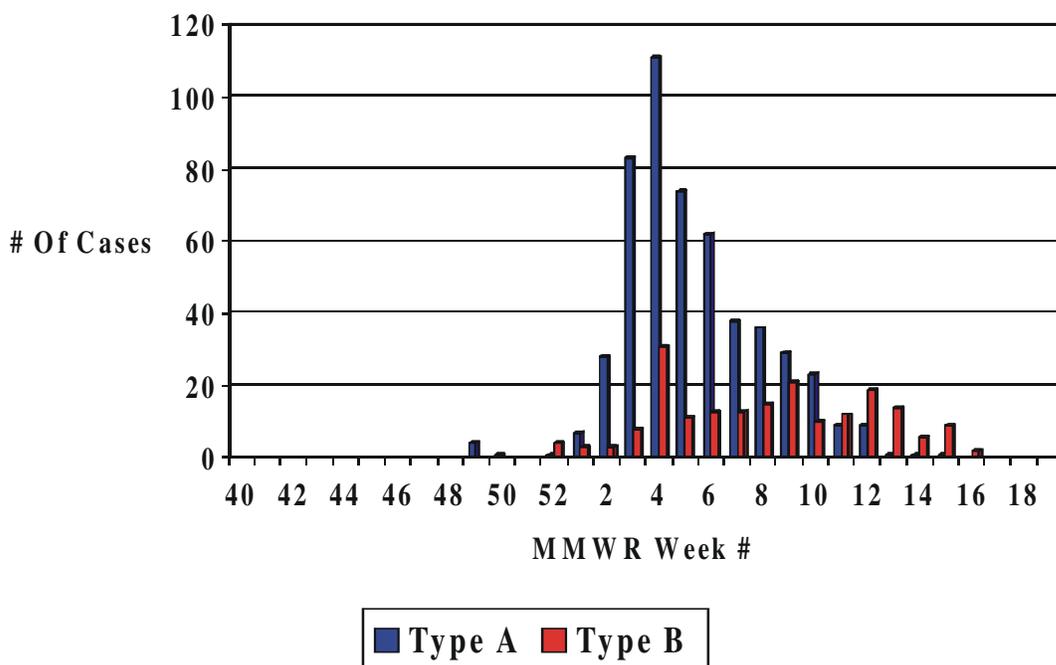
1: Centers of Disease Control (CDC) Sentinel Influenza Provider Surveillance System: Among the five regions (1, 2, 3, 7, & 9) covered by regional epidemiologists, 18 providers were enrolled in the Influenza Sentinel System for the 2000-2001 season. These providers reported

cases of influenza-like illness from total office visits on a weekly basis to the CDC. Results are posted on the CDC's website. Out of the 18 providers, only four reported cases of influenza-like illness to the CDC. (Influenza-like illness, or ILI, is defined as fever of at least 100 degrees with cough and/or sore throat without any identified cause.)

2: WV Sentinel Providers who submitted virology specimens to Office of Laboratory Services: In the 2000-2001 season eight providers submitted nasopharyngeal swabs, and altogether seventeen specimens were received. Out of these specimens, four were positive for influenza type A, and for the first time in the history of influenza surveillance in the state the specimens were all subtyped (subtype H1N1).

3: WV Influenza-like illness reports from the local health departments: About half of the local health departments regularly report the number of cases of influenza-like illness occurring in their counties, on a weekly basis. This system, while simple, appears to consistently document a seasonal outbreak curve that is consistent with data from other sources.

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(Anthrax, continued from page 1)

cm in diameter, with a characteristic black necrotic (dying) area in the center. Lymph glands in the adjacent area may swell. About 20% of untreated cases of cutaneous anthrax will result in death. Deaths are rare with appropriate antimicrobial therapy.

Inhalation: Initial symptoms may resemble a common cold. After several days, the symptoms may progress to severe breathing problems and shock. Inhalation anthrax is usually fatal.

Intestinal: The intestinal disease form of anthrax may follow the consumption of contaminated meat and is characterized by an acute inflammation of the intestinal tract. 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.

Where is anthrax usually found?

Anthrax can be found globally. It is more common in developing countries or countries without veterinary public health programs. Certain regions of the world (South and Central America, Southern and Eastern Europe, Asia, Africa, the Caribbean, and the Middle East) report more anthrax in animals than others.

Can anthrax be spread from person to person?

Direct person-to-person spread of anthrax is extremely unlikely to occur. Communicability is not a concern in managing or visiting with patients with inhalational anthrax.

Is there a way to prevent infection?

In countries where anthrax

is common and vaccination levels of animal herds are low, humans should avoid contact with livestock and animal products and avoid eating meat that has not been properly slaughtered and cooked. Also, an anthrax vaccine has been licensed for use in humans. The vaccine is reported to be 93% effective in protecting against anthrax.

What is the anthrax vaccine?

The anthrax vaccine is manufactured and distributed by BioPort, Corporation, Lansing, Michigan. The vaccine is a cell-free filtrate vaccine, which means it contains no dead or live bacteria in the preparation. The final product contains no more than 2.4 mg of aluminum hydroxide as adjuvant. Anthrax vaccines intended for animals should not be used in humans.

Who should get vaccinated against anthrax?

The Advisory Committee on Immunization Practices has recommended anthrax vaccination for the following groups:

- Persons who work directly with the organism in the laboratory.
- Persons who work with imported animal hides or furs in areas where standards are insufficient to prevent exposure to anthrax spores.
- Persons who handle potentially infected animal products in high-incidence areas. (Incidence is low in the United States, but veterinarians who travel to work in other countries where incidence is higher should consider being vaccinated.)
- Military personnel deployed to areas with high risk for exposure to the organism (as when it is used as a biological warfare weapon).
- Pregnant women should be vaccinated only if absolutely necessary.

What is the protocol for anthrax vac-

ination?

The immunization consists of three subcutaneous injections given 2 weeks apart followed by three additional subcutaneous injections given at 6, 12, and 18 months. Annual booster injections of the vaccine are recommended thereafter.

Are there adverse reactions to the anthrax vaccine?

Mild local reactions occur in 30% of recipients and consist of slight tenderness and redness at the injection site. Severe local reactions are infrequent and consist of extensive swelling of the forearm in addition to the local reaction. Systemic reactions occur in fewer than 0.2% of recipients.

How is anthrax diagnosed?

Anthrax is diagnosed by isolating *B. anthracis* from the blood, skin lesions, or respiratory secretions or by measuring specific antibodies in the blood of persons with suspected cases.

Is there a treatment for anthrax?

Doctors can prescribe effective antibiotics. To be effective, treatment should be initiated early. If left untreated, the disease can be fatal.

Where can I get more information about the recent Department of Defense decision to require men and women in the Armed Services to be vaccinated against anthrax?

The Department of Defense recommends that servicemen and women contact their chain of command on questions about the vaccine and its distribution. The anthrax Vaccine Immunization Program in the U.S. Army Surgeon General's Office can be reached at 1-877-GET-VACC (1-877-438-8222). The web site is: <http://www.anthrax.osd.mil> ●

West Virginia Department of Health and Human Resources

Information on *E. coli* O157:H7

What is *E. coli* O157:H7?

E. coli is a bacterium that lives in the gut (intestines) of most warm-blooded animals, including humans. Most strains of *E. coli* are harmless; however, *E. coli* O157:H7 is one of several strains of *E. coli* that produce a powerful toxin that can cause severe illness in humans.

What are the symptoms of *E. coli* O157:H7?

E. coli O157:H7 often causes severe bloody diarrhea and stomach cramping with little or no fever. Symptoms begin 2 to 8 days after exposure and last for approximately 5 to 10 days. Some people may have only mild diarrhea without blood or no symptoms at all. In some persons, especially children under 5 years of age and the elderly, infection with *E. coli* O157:H7 can result in hemolytic uremic syndrome, or "HUS." This complication is very serious and can lead to kidney failure and death.

How is *E. coli* O157:H7 spread?

E. coli O157:H7 is found in the gut (intestines) of healthy cattle. *E. coli* O157:H7 can be found on the surface of raw beef or in the middle of ground beef patties. It may also be found on fruits or vegetables contaminated with cattle manure.

People can be infected with *E. coli* O157:H7 by:

- Eating undercooked beef products, particularly ground beef
- Consumption of sprouts, lettuce, salami, unpasteurized milk, cider, or fruit juices
- Eating unwashed raw fruits and vegetables
- Swimming in or drinking water that is contaminated with animal or human waste

Bacteria in diarrheal stools of infected persons can be passed from one person to another if hygiene or handwashing habits are inadequate. This is particularly likely among toddlers who are not toilet trained. Family members and playmates of these children are at high risk of becoming infected. Young children typically shed the organism in their feces for a week or two after their illness resolves. Older children rarely carry the organism without symptoms.

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How is *E. coli* O157:H7 infection treated?

Most people recover without medical treatment in 5 to 10 days. Anyone with bloody diarrhea (especially young children) should contact their doctor. The use of antibiotics or over-the-counter anti-diarrheal agents is not recommended.

HUS is a life-threatening complication and requires hospitalization and extensive medical care. Blood transfusions and kidney dialysis are often required. HUS occurs in about 2% to 7% of persons with *E. coli* O157:H7.

How can *E. coli* O157:H7 infection be prevented?

Always wash hands with soap and water:

- After using the bathroom
- After changing diapers
- After cleaning the toilet
- After handling soiled towels or linens before eating
- After petting or handling animals

Also:

- Drink only pasteurized milk products, fruit juices, and cider.
- Eat only fruits and vegetables that have been washed well.

Follow these simple food preparation tips:

- Use a separate cutting board to prepare raw meats.
- Cook all ground beef and hamburger thoroughly. Ground beef should be cooked to at least 160° F. If the temperature cannot be checked, cook ground beef until the juices run clear, and the inside is gray or brown throughout (not pink).
- Avoid spreading harmful bacteria in your kitchen. Use a clean plate for cooked meat.
- Never return cooked meat back to the same plate used for raw meat. Keep raw meat separate from ready-to-eat foods. Wash hands, counters, and utensils with hot soapy water after they touch raw meat. Never place cooked hamburgers or ground beef on the unwashed plate that held raw patties. Wash meat thermometers in between tests of patties that require further cooking.
- If you are served an undercooked hamburger in a restaurant, send it back for further cooking.
- Marinade or BBQ sauce used on raw meat should not be used on cooked meat.
- Persons who have diarrhea from any cause should not prepare food that will be eaten by others, attend day care, or bathe or swim with others.

(Influenza, continued from page 6)

4: Laboratory surveillance of confirmed cases of influenza: Laboratories collaborating with the World Health Organization send information on influenza isolates (type and subtype) every week during the influenza season to CDC and to the Infectious Disease Epidemiology Program. The virology section of Charleston Area Medical Center and the Office of Laboratory Services reported a total of 712 (influenza type A-518, influenza type B-194) confirmed cases of influenza last season. (See graph on page 2.) This information was posted on the CDC's website, and was fed back by the influenza surveillance coordinator on a weekly basis to the regional epidemiologists, the Bureau for Public Health, and the community at large.

At the beginning of the Influenza 2000-2001 season, a packet was sent out to the sentinel providers with information on specimen collection, packaging, storage etc. During the season, the sentinel providers received feedback on the data they had submitted, a free subscription of CDC's Morbidity and Mortality Weekly Report (MMWR) and the Emerging Infectious Disease

Journal.

A copy of the 2000-2001 influenza season summary and a certificate of appreciation from the Centers of Disease Control and the West Virginia Bureau of Public Health was mailed to those providers that regularly reported ILI cases and submitted specimens to OLS in the past season.

For the 2001-2002 season the influenza surveillance system is expanding to six regions (1, 2, 3, 6, 7 and 9). In addition to this, regional epidemiologists will be assisting the program by recruiting more than five sentinel providers from each of their regions. New sentinel providers are invited to participate in the Influenza Sentinel Provider Surveillance System. The sentinel providers are encouraged to continue as regular participants during the 2001-2002 influenza season.

Any questions, comments or suggestions should be referred to the influenza surveillance coordinator at (304)558-5358. Please check the West Virginia Department of Health and Human Resources website at http://www.wvdhhr.org/bph/oehp/sdc/flu_surv.htm for updated information on influenza surveillance during the 2001-2002 season. ●

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