ALLEN COUNTY
PUBLIC HEALTH

Biological Diseases Fact Sheets

12/2/2019

ALLEN COUNTY PUBLIC HEALTH

Fact Sheet

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If you have any questions, please contact Allen County Public Health at 419-228-4457. Health Department staff members are available to answer your questions Monday to Friday from 8:00 a.m. to 4:30 p.m. You can also visit www.allencountypublichealth.org , the Centers for Disease Control and Prevention's website at www.cdc.gov, and the World Health Organization at www.who.int for additional information.

Anthrax

Fact Sheet

What is Anthrax?

Anthrax is a serious infectious disease caused by gram-positive, rod-shaped bacteria known as *Bacillus anthracis*. Anthrax can be found naturally in soil and commonly affects domestic and wild animals around the world. Although it is rare, people can get sick with anthrax if they come in contact with infected animals or contaminated animal products.

Contact with anthrax can cause severe illness in both humans and animals. Anthrax is not contagious, which means you can't catch it like the cold or flu.

How Do Humans Come in Contact?

People get infected with anthrax when spores get into the body. When anthrax spores get inside the body, they can be "activated." When they become active, the bacteria can multiply, spread out in the body, produce toxins (poisons), and cause severe illness.

This can happen when people breathe in spores, eat food or drink water that is contaminated with spores, or get spores in a cut or scrape in the skin. It is very uncommon for people in the United States to get infected with anthrax.

Certain activities can also increase a person's chances of getting infected.

Where is anthrax found?

Anthrax is most common in agricultural regions of Central and South America, sub-Saharan Africa, central and southwestern Asia, southern and eastern Europe, and the Caribbean.

Anthrax is rare in the United States, but sporadic outbreaks do occur in wild and domestic grazing animals such as cattle or deer. Anthrax is more common in developing countries and countries that do not have veterinary public health programs that routinely vaccinate animals against anthrax. In the United States, yearly vaccination of livestock is recommended in areas where animals have had anthrax in the past.

How Do People Become Infected?

People get infected with anthrax when spores get into the body. When this happens, the spores can be activated and become anthrax bacteria. Then the bacteria can multiply, spread out in the body, produce toxins (poisons), and cause severe illness. This can happen when people breathe in spores, eat food or drink water that is contaminated with spores, or get spores in a cut or scrape in the skin. Certain activities (described below) can increase a person's chances of getting infected.

- **Eating raw or undercooked meat from infected animals**
  People who eat raw or undercooked meat from infected animals may get sick with gastrointestinal anthrax. This usually occurs in countries where livestock are not routinely vaccinated against anthrax and food animals are not inspected prior to slaughter.
  In the United States, gastrointestinal anthrax has rarely been reported. This is because yearly vaccination of livestock is recommended in areas of the United States where animals have had anthrax in the past, and because of the examination of all food animals, which ensures that they are healthy at the time of slaughter.
- **Injecting heroin**

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A newly discovered type of anthrax is injection anthrax. This type of anthrax has been seen in northern Europe in people injecting heroin. So far, no cases of injection anthrax have been reported in the United States.

Is Anthrax Contagious?

No. You cannot catch anthrax from another person the way you might catch a cold or the flu. In rare cases, person-to-person transmission has been reported with cutaneous anthrax, where discharges from skin lesions might be infectious.

What are Symptoms of Anthrax?

The symptoms of anthrax depend on the type of infection and can take anywhere from 1 day to more than 2 months to appear. All types of anthrax have the potential, if untreated, to spread throughout the body and cause severe illness and even death.

Cutaneous Anthrax symptoms:
• A group of small blisters or bumps that may itch
• A painless skin sore (ulcer) with a black center that appears after the small blister or bumps
  ○ Most often the sore will be on the face, neck, arms, or hands.
  ○ Swelling can occur around the sore
	Gastrointestinal anthrax symptoms:
	• Fever and chills
	• Swelling of neck or neck glands
	• Sore throat
	• Painful swallowing
	• Hoarseness
	• Nausea and vomiting, especially bloody vomiting
	• Diarrhea or bloody diarrhea
	• Headache
	• Flushing (red face) and red eyes
	• Stomach pain
	• Fainting
	• Swelling of abdomen (stomach)

Inhalation Anthrax symptoms:
• Fever and chills
• Chest discomfort
• Shortness of breath
• Confusion or dizziness
• Cough
• Nausea, vomiting, or stomach pains
• Headache
• Sweats (often drenching)
• Extreme tiredness
• Body aches
	Injection anthrax symptoms:
	• Fever and chills
	• A group of small blisters or bumps that may itch, appearing where the drug was injected
	• A painless skin sore with a black center that appears after the blisters or bumps
	• Swelling around the sore
	• Abscesses deep under the skin or in the muscle where the drug was injected
	• Keep in mind
	  ○ Symptoms are similar to those of cutaneous anthrax, but injection anthrax can spread throughout the body faster and be harder to recognize and treat than cutaneous anthrax.
	  ○ Skin and injection site infections associated with injection drug use are common and do not necessarily mean the person has anthrax.

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Botulism

Fact Sheet

What is Botulism?

Botulism is a muscle-paralyzing disease caused by a toxin made by a bacterium called *Clostridium botulinum*. Botulinum toxins block nerve functions and can lead to respiratory and muscular paralysis. Botulism poisoning cannot be transmitted from person to person.

How Can You Get Botulism Poisoning?

Although botulism poisoning is rare, it can be contracted in 3 different ways.

1. Foodborne botulism occurs when a person ingests pre-formed toxin that leads to illness within a few hours to days. Foodborne botulism is a public health emergency because the contaminated food may still be available to other persons besides the patient.
2. Infant botulism occurs in a small number of susceptible infants each year who harbor *C. botulinum* in their intestinal tract.
3. Wound botulism occurs when wounds are infected with *C. botulinum* that secretes the toxin.

What Are the Symptoms of Botulism Poisoning?

Symptoms usually occur within 12-36 hours after exposure to *Clostridium botulinum* spores, and can take form in the following:

- Double vision
- Blurred vision
- Drooping eyelids
- Slurred speech
- Difficulty swallowing
- Dry mouth
- Muscle weakness that moves down the body, usually affecting the shoulders first, then the upper arms, lower arms, thighs, calves, etc
- Vomiting
- Diarrhea
- Paralysis of breathing muscles

How to Prevent Botulism Poisoning?

Prevention of food borne botulism is based on good practice in food preparation particularly preservation and hygiene. Botulism may be prevented by the inactivation of the bacterial spores in heat-sterilized (e.g. retorted) or canned products or by inhibiting bacterial growth in other products. Commercial heat pasteurization (vacuum packed pasteurized products, hot smoked products) may not be sufficient to kill all spores and therefore the safety of these products must be based on preventing bacterial growth and toxin production. Refrigeration temperatures combined with salt content and/or acidic conditions will prevent the growth of the bacteria and formation of toxin.

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The WHO Five Keys to Safer Food serve as the basis for educational programs to train food handlers and educate the consumers. They are especially important in preventing food poisoning. The Five Keys are:

1. Keep clean
2. Separate raw and cooked
3. Cook thoroughly
4. Keep food at safe temperatures
5. Use safe water and raw materials

How is Botulism Poisoning Diagnosed and Treated?

Samples must be taken, and clinical tests run in order to confirm the presence of *Clostridium botulinum* toxin. Antitoxins are the most common treatment method upon a confirmed case, and antibiotics for wound infections. However, more severe cases may require special treatments. A vaccination has been developed against botulism, but its effectiveness is still under evaluation.

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Cholera

Fact Sheet

What is Cholera?

Cholera is an acute, diarrheal illness caused by infection of the intestine with the bacterium *Vibrio cholerae*. An estimated 3-5 million cases and over 100,000 deaths occur each year around the world. The infection is often mild or without symptoms, but can sometimes be severe. Approximately one in 20 (5%) infected persons will have severe disease characterized by profuse watery diarrhea, vomiting, and leg cramps. In these people, rapid loss of body fluids leads to dehydration and shock. Without treatment, death can occur within hours.

How Can One Get Cholera?

A person can get cholera by drinking water or eating food contaminated with the cholera bacterium. In an epidemic, the source of the contamination is usually the feces of an infected person that contaminates water and/or food. The disease can spread rapidly in areas with inadequate treatment of sewage and drinking water. The disease is not likely to spread directly from one person to another; therefore, casual contact with an infected person is not a risk for becoming ill.

What are the Symptoms of Cholera?

Cholera infection is often mild or without symptoms, but can sometimes be severe. Approximately one in 20 (5%) infected persons will have severe disease characterized by profuse watery diarrhea, vomiting, and leg cramps. In these people, rapid loss of body fluids leads to dehydration and shock. Without treatment, death can occur within hours.

Who is Most Likely to Get Cholera?

Individuals living in places with inadequate water treatment, poor sanitation, and inadequate hygiene are at a greater risk for cholera.

How is Cholera Treated?

Cholera can be simply and successfully treated by immediate replacement of the fluid and salts lost through diarrhea. Patients can be treated with oral rehydration solution, a prepackaged mixture of sugar and salts to be mixed with water and drunk in large amounts. This solution is used throughout the world to treat diarrhea. Severe cases also require intravenous fluid replacement. With prompt rehydration, fewer than 1% of cholera patients die.

Antibiotics shorten the course and diminish the severity of the illness, but they are not as important as receiving rehydration. Persons who develop severe diarrhea and vomiting in countries where cholera occurs should seek medical attention promptly.

Is There a Vaccine for Cholera?

Currently, there are two oral cholera vaccines available, Dukoral (manufactured by SBL Vaccines) which is World Health Organization (WHO) prequalified and licensed in over 60 countries, and

ShanChol (manufactured by Shantha Biotec in India), which is licensed in India and is pending WHO prequalification. Because the vaccine is a two dose vaccine, multiple weeks can elapse before persons receiving the vaccine are protected. Therefore, vaccination should not replace standard prevention and control measures. In addition, CDC does not recommend cholera vaccines for most travelers, nor is the vaccine available in the U.S.. This is because the available vaccines offer incomplete protection for a relatively short period of time.

Further information about Dukoral can be obtained from the manufacturers:

Dukoral®
SBL Vaccin AB,
SE-105 21 Stockholm, Sweden
telephone +46-8-7351000
website: www.sblvaccines.se

Is Cholera Common in the United States?

In the U.S., cholera was prevalent in the 1800s but water-related spread has been eliminated by modern water and sewage treatment systems.

However, U.S. travelers to areas with epidemic cholera (for example, parts of Africa, Asia, or Latin America) may be exposed to the cholera bacterium. In addition, travelers may bring contaminated seafood back to the U.S.; foodborne outbreaks of cholera have been caused by contaminated seafood brought into the U.S. by travelers.

How is the Government Working to Combat Cholera?

U.S. and international public health authorities are working to enhance surveillance for cholera, investigate cholera outbreaks, and design and implement preventive measures across the globe. The Centers for Disease Control and Prevention (CDC) investigates epidemic cholera wherever it occurs at the invitation of the affected country and trains laboratory workers in proper techniques for identification of *Vibrio cholerae*. In addition, CDC provides information on diagnosis, treatment, and prevention of cholera to public health officials and educates the public about effective preventive measures.

The U.S. Agency for International Development sponsors some of the international U.S. government activities and provides medical supplies, and water, sanitation and hygiene supplies to affected countries.

The Food and Drug Administration tests imported and domestic shellfish for *V. cholerae* and monitors the safety of U.S. shellfish beds through the shellfish sanitation program.

With cooperation at the state and local, national, and international levels, assistance will be provided to countries where cholera is present. The risk to U.S. residents remains small.

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Diphtheria

Fact Sheet

What is Diphtheria?

Diphtheria is an infection caused by *Corynebacterium diphtheriae* bacteria.

Diphtheria is spread (transmitted) from person to person, usually through respiratory droplets, from coughing or sneezing. Rarely, spreading may occur from skin lesions (like an abnormal sore) or clothes that are contaminated with discharges from lesions (like a sore) of an infected person.

A person also can get infected with diphtheria by coming in contact with an object, like a toy, that has been contaminated with the bacteria that cause diphtheria.

What are Symptoms of Diphtheria?

When the bacteria that cause diphtheria invade the respiratory system, they produce a poison (toxin) that can cause:

- Weakness
- Sore throat
- Fever
- Swollen glands in the neck

Within two to three days, a thick coating can build up in the throat or nose, making it very hard to breathe and swallow. This thick gray coating is called a "pseudomembrane" and it can build up over the nasal tissues, tonsils, voice box, and throat.

The pseudomembrane is formed from dead tissue caused by the toxin that is produced by the bacteria. The pseudomembrane sticks to the tissue below and may get in the way of breathing. The toxin may be absorbed into the blood stream and may cause damage to the heart, kidneys and nerves.

How is Diphtheria Diagnosed and Treated?

Diagnosis of diphtheria is usually made based on signs and symptoms. A swab specimen is taken from the throat to test for the bacteria. A doctor can also take a sample from a skin lesion (like a sore) and try and grow the bacteria to confirm the diagnosis of diphtheria.

It is important to start treatment right away if diphtheria is suspected and not to wait for laboratory confirmation. In the U.S, before there was treatment for diphtheria, up to half of the people who got the disease died from it.

Diphtheria treatment today involves:

- Using diphtheria antitoxin to neutralize (counteract) the toxin produced by the bacteria.
- Using antibiotics to kill and eliminate diphtheria bacteria

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Diphtheria patients are usually kept in isolation, until they are no longer able to infect others — usually about 48 hours after antibiotic treatment begins. The disease is usually not able to be spread after the patient has been on antibiotics for 48 hours. After the course of antibiotic treatment is finished, the doctor will run tests to make sure the bacteria are not in the patient's body anymore.

How to Prevent Getting Diphtheria?

The best way to prevent diphtheria is to get vaccinated. In the U.S., there are four combination vaccines used to prevent diphtheria: DTaP, Tdap, DT and Td. Each of these vaccines prevents diphtheria and tetanus; DTaP and Tdap vaccines also prevent pertussis (whooping cough). DTaP and DT vaccines are given to children younger than seven years of age, and Tdap and Td vaccines are given to older children, teens and adults.

To find out when to get your child, adolescent, and adult Diphtheria vaccination go to http://www.cdc.gov/diphtheria/about/prevention.html.

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Avian Influenza

Fact Sheet

What is Avian Influenza?

Avian influenza refers to the disease caused by infection with avian (bird) influenza (flu) Type A viruses. These viruses occur naturally among wild aquatic birds worldwide and can infect domestic poultry and other bird and animal species. Avian flu viruses do not normally infect humans. However, sporadic human infections with avian flu viruses have occurred.

Most human infections with avian influenza A viruses have occurred following direct or close contact with infected poultry. Illness in humans has ranged from mild to severe.

The spread of avian influenza A viruses from one ill person to another has been reported very rarely, and has been limited, inefficient and not sustained. However, because avian influenza A viruses have the potential to change and gain the ability to spread easily between people, monitoring for human infection and person-to-person transmission is extremely important for public health.

How to Prevent Avian Flu?

Currently, the best way to prevent infection with avian influenza A viruses is to avoid sources of exposure whenever possible. Most human infections with avian influenza A viruses have occurred following direct close or prolonged contact with sick or dead infected poultry.

People who work with poultry or who respond to avian influenza outbreaks are advised to follow recommended biosecurity and infection control practices; these include use of appropriate personal protective equipment and careful attention to hand hygiene. In addition, highly pathogenic avian influenza (HPAI) poultry outbreak responders should adhere to guidance from CDC and World Health Organization (WHO) and receive seasonal influenza vaccination annually and take prophylactic antiviral medication during response. They should also be monitored for illness during and after responding to HPAI outbreaks among poultry. Responders to low pathogenic avian influenza (LPAI) outbreaks should also consider this guidance as part of their response plan. Seasonal influenza vaccination will not prevent infection with avian influenza A viruses, but can reduce the risk of co-infection with human and avian influenza A viruses.

What are Current Treatments for Avian Flu?

For treatment (and prevention) of human infection with avian influenza A viruses, CDC and WHO currently recommend oseltamivir or zanamivir, two of four prescription antiviral medications currently licensed for use in the United States.

In particular, analyses of available HPAI H5N1 viruses circulating worldwide suggest that most viruses are susceptible to oseltamivir and zanamivir. However, some evidence of resistance to oseltamivir has been reported in HPAI H5N1 viruses isolated from some human HPAI H5N1 cases. Monitoring for antiviral resistance among avian influenza A viruses is crucial and ongoing, and data directly inform antiviral treatment recommendations.

What are the Known Avian Flu Strands?

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Three prominent subtypes of avian influenza A viruses that are known to infect both birds and people are:

Influenza A H5

Nine potential subtypes of H5 viruses are known (H5N1, H5N2, H5N3, H5N4, H5N5, H5N6, H5N7, H5N8, and H5N9). Most H5 viruses identified worldwide in wild birds and poultry are LPAI viruses. Sporadic H5 virus infection of humans, such as with highly pathogenic avian influenza A (H5N1) viruses currently circulating among poultry in Asia and the Middle East have been reported in 15 countries, often resulting in severe pneumonia with approximately 60% mortality worldwide.

Influenza A H7

Nine potential subtypes of H7 viruses are known (H7N1, H7N2, H7N3, H7N4, H7N5, H7N6, H7N7, H7N8, and H7N9). Most H7 viruses identified worldwide in wild birds and poultry are LPAI viruses. H7 virus infection in humans is uncommon, but has been documented in persons who have direct contact with infected birds, especially during outbreaks of H7 virus among poultry. Illness in humans may include conjunctivitis and/or upper respiratory tract symptoms.

In humans, LPAI (H7N2, H7N3, H7N7) virus infections have caused mild to moderate illness.

HPAI (H7N3, H7N7) virus infections have caused mild to severe and fatal illness.

On April 1, 2013, the first known human cases of infection with avian influenza H7N9 viruses were reported. These were associated with severe respiratory illness and death.

Influenza A H9

Nine potential subtypes of H9 are known (H9N1, H9N2, H9N3, H9N4, H9N5, H9N6, H9N7, H9N8, and H9N9); all H9 viruses identified worldwide in wild birds and poultry are LPAI viruses. H9N2 virus has been detected in bird populations in Asia, Europe, the Middle East and Africa. Rare, sporadic H9N2 virus infections of humans have been reported to cause generally mild upper respiratory tract illness.

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Measles

Fact Sheet

What is Measles?

Measles is a respiratory disease caused by a virus. The disease of measles and the virus that causes it share the same name. The disease is also called rubella. Measles virus normally grows in the cells that line the back of the throat and lungs.

What are the Signs and Symptoms of Measles?

The symptoms of measles generally begin about 7-14 days after a person is infected, and include:

- Blotchy rash
- Fever
- Cough
- Runny nose
- Red, watery eyes (conjunctivitis)
- Feeling run down, achy (malaise)
- Tiny white spots with bluish-white centers found inside the mouth (Koplik's spots)

A typical case of measles begins with mild to moderate fever, cough, runny nose, red eyes, and sore throat. Two or three days after symptoms begin, tiny white spots (Koplik's spots) may appear inside the mouth.

Three to five days after the start of symptoms, a red or reddish-brown rash appears. The rash usually begins on a person's face at the hairline and spreads downward to the neck, trunk, arms, legs, and feet. When the rash appears, a person's fever may spike to more than 104 degrees Fahrenheit. After a few days, the fever subsides and the rash fades.

How Can You Contract Measles?

Measles is highly contagious and can be spread to others from four days before to four days after the rash appears. Measles is so contagious that if one person has it, 90% of the people close to that person who are not immune will also become infected with the measles virus.

The virus lives in the mucus in the nose and throat of the infected person. When that person sneezes or coughs, droplets spray into the air. The droplets can get into other people's noses or throats when they breathe or put their fingers in their mouth or nose after touching an infected surface. The virus can live on infected surfaces for up to 2 hours and spreads so easily that people who are not immune will probably get it when they come close to someone who is infected.

Measles is a disease of humans; measles virus is not spread by any other animal species.

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Is there a Vaccination for Measles?

Measles can be prevented by the combination MMR (measles, mumps, and rubella) vaccine. In the decade before the measles vaccination program began, an estimated 3–4 million people in the United States were infected each year, of whom 400–500 died, 48,000 were hospitalized, and another 1,000 developed chronic disability from measles encephalitis. Widespread use of measles vaccine has led to a greater than 99% reduction in measles cases in the United States compared with the pre-vaccine era, and in 2012, only 55 cases of measles were reported in the United States.

However, measles is still common in other countries. The virus is highly contagious and can spread rapidly in areas where vaccination is not widespread. It is estimated that in 2008 there were 164,000 measles deaths worldwide—that equals about 450 deaths every day or about 18.

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Meningococcal Disease

Fact Sheet

What is Meningococcal Disease?

Meningococcal disease is caused by the bacterium *Neisseria meningitidis,* also called meningococcus. About 10% of people have this type of bacteria in the back of their nose and throat with no signs or symptoms of disease, called being 'a carrier'. But sometimes *Neisseria meningitidis* bacteria can invade the body causing certain illnesses, which are known as meningococcal disease.

How Can One Contract Meningococcal Disease?

Neisseria meningitidis bacteria are spread through the exchange of respiratory and throat secretions like spit (e.g., living in close quarters, kissing). Fortunately, these bacteria are not as contagious as what causes the common cold or the flu. Also, the bacteria are not spread by casual contact or by simply breathing the air where a person with meningococcal disease has been.

Sometimes *Neisseria meningitidis* bacteria spread to people who have had close or lengthy contact with a patient with meningococcal disease. People in the same household, roommates, or anyone with direct contact with a patient's oral secretions, meaning saliva or spit, (such as a boyfriend or girlfriend) would be considered at increased risk of getting the infection.

Who is at a Higher Risk?

- Age
    - Meningococcal disease is more commonly diagnosed among infants, adolescents and young adults. A vaccine is available and recommended for all 11 through 18 year olds. A vaccine is also available for infants and children 9 months of age and older, but it is only routinely recommended for those with certain medical conditions. Learn more about certain age groups being at risk.
- Community setting
    - Infectious diseases tend to spread quickly wherever large groups of people gather together. As a result, college students living in dormitories are at slightly increased risk compared with other persons of the same age. A vaccine is available and recommended for all college freshmen living in a dorm. However, any college student can receive the vaccine to decrease their chances of getting meningococcal disease. Persons entering the military will receive a meningococcal vaccine before basic training. Learn more about those in community settings being at risk.
- Certain medical conditions
    - There are certain diseases, medications and surgical procedures that put people at increased risk of meningococcal disease, such as not having a spleen. A vaccine is available and recommended for those with these conditions. Learn more about those with certain medical conditions being at risk.

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- Travel
    - Travelers to the meningitis belt in sub-Saharan Africa may be at risk for meningococcal disease, particularly during the dry season. Learn more about travelers at risk.

How Can You Prevent Contracting Meningococcal Disease?

Prevention

Keeping up to date with recommended immunizations is the best defense against meningococcal disease. Maintaining healthy habits, like getting plenty of rest and not coming into close contact with people who are sick, can also help.

Vaccination

There is a vaccine for the bacteria that causes meningococcal disease. However, available vaccines do not cover all serogroups ("strains") of *Neisseria meningitidis* bacteria. Like with any vaccine, meningococcal vaccines are not 100% effective. This means that even if you have been vaccinated, there is still a chance you can develop a meningococcal infection. People should know the symptoms of meningococcal meningitis and meningococcal septicemia since early recognition and quick medical attention are extremely important.

Antibiotics

Sometimes *Neisseria meningitidis* bacteria spread to other people who have had close or lengthy contact with a patient with meningococcal disease. People in the same household, roommates, or anyone with direct contact with a patient's oral secretions (saliva) (such as a boyfriend or girlfriend) would be considered at increased risk of getting the infection. People who qualify as close contacts of a person with meningococcal disease should receive antibiotics to prevent them from getting the disease. This is known as prophylaxis.

Infection

If your doctor confirms that you have meningococcal disease, your body will develop a natural defense (immunity) to some similar types of future infections. However, like with the vaccine, this protection does not last a lifetime and is not perfect. Therefore, routine meningococcal vaccines are still recommended. If you get meningococcal disease twice, it is highly possible that you have an underlying immune deficiency, which your doctor should evaluate.

How Do You Diagnose and Treat Meningococcal Disease?

Diagnosis

Early diagnosis and treatment are very important. If meningococcal disease is suspected, samples of blood or cerebrospinal fluid (near the spinal cord; see image below) are collected and sent to the laboratory for testing. It is important to know if it is meningococcal disease because the severity of illness and the treatment will change depending on the cause. In the case of meningococcal disease,

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antibiotics can help prevent severe illness and reduce the chances a close contact will also develop disease.

If *Neisseria meningitidis* bacteria are present, they can be grown (cultured). Growing the bacteria in the laboratory is important for confirming the presence of bacteria, identifying the specific type of bacteria that is causing the infection, and deciding which antibiotic will work best. Other tests can sometimes detect and identify the bacteria if the cultures do not.

Treatment

Meningococcal disease can be treated with a number of effective antibiotics. **It is important that treatment be started as soon as possible.** If meningococcal disease is suspected, antibiotics are given right away. Antibiotic treatment should reduce the risk of dying, but sometimes the infection has caused too much damage to the body for antibiotics to prevent death or serious long-term problems.

Depending on how serious the infection is, other treatments may also be necessary. These can include such things as breathing support, medications to treat low blood pressure, and wound care for parts of the body with damaged skin.

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Plague

Fact Sheet

What is Plague?

Plague is a disease that affects humans and other mammals. It is caused by the bacterium, *Yersinia pestis*. Humans usually get plague after being bitten by a rodent flea that is carrying the plague bacterium or by handling an animal infected with plague. Plague is infamous for killing millions of people in Europe during the Middle Ages. Today, modern antibiotics are effective in treating plague. Without prompt treatment, the disease can cause serious illness or death. Presently, human plague infections continue to occur in the western United States, but significantly more cases occur in parts of Africa and Asia.

What are the Types of Plagues?

Plague symptoms depend on how the patient was exposed to the plague bacteria. Plague can take different clinical forms, but the most common are bubonic, pneumonic and septicemic.

Bubonic plague: Patients develop sudden onset of fever, headache, chills, and weakness and one or more swollen, tender and painful lymph nodes (called buboes). This form usually results from the bite of an infected flea. The bacteria multiply in the lymph node closest to where the bacteria entered the human body. If the patient is not treated with the appropriate antibiotics, the bacteria can spread to other parts of the body.

Septicemic plague: Patients develop fever, chills, extreme weakness, abdominal pain, shock, and possibly bleeding into the skin and other organs. Skin and other tissues may turn black and die, especially on fingers, toes, and the nose. Septicemic plague can occur as the first symptom of plague, or may develop from untreated bubonic plague. This form results from bites of infected fleas or from handling an infected animal.

Pneumonic plague: Patients develop fever, headache, weakness, and a rapidly developing pneumonia with shortness of breath, chest pain, cough, and sometimes bloody or watery mucous. Pneumonic plague may develop from inhaling infectious droplets or may develop from untreated bubonic or septicemic plague after the bacteria spread to the lungs. The pneumonia may cause respiratory failure and shock. Pneumonic plague is the most serious form of the disease and is the only form of plague that can be spread from person to person (by infectious droplets).

Plague is a serious illness. If you are experiencing symptoms like those listed here, seek immediate medical attention. Prompt treatment with the correct medications is critical to prevent complications or death.

How is Plague Transmitted?

The plague bacteria can be transmitted to humans in the following ways:

Flea bites. Plague bacteria are most often transmitted by the bite of an infected flea. During plague epizootics, many rodents die, causing hungry fleas to seek other sources of blood. People and animals that visit places where rodents have recently died from plague are at risk of being infected from flea

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bites. Dogs and cats may also bring plague-infected fleas into the home. Flea bite exposure may result in primary bubonic plague or septicemic plague.

Contact with contaminated fluid or tissue. Humans can become infected when handling tissue or body fluids of a plague-infected animal. For example, a hunter skinning a rabbit or other infected animal without using proper precautions could become infected with plague bacteria. This form of exposure most commonly results in bubonic plague or septicemic plague.

Infectious droplets. When a person has plague pneumonia, they may cough droplets containing the plague bacteria into air. If these bacteria-containing droplets are breathed in by another person they can cause pneumonic plague. Typically this requires direct and close contact with the person with pneumonic plague. Transmission of these droplets is the only way that plague can spread between people. This type of spread has not been documented in the United States since 1924, but still occurs with some frequency in developing countries. Cats are particularly susceptible to plague, and can be infected by eating infected rodents. Sick cats pose a risk of transmitting infectious plague droplets to their owners or to veterinarians. Several cases of human plague have occurred in the United States in recent decades as a result of contact with infected cats.

How is Plague Diagnosed and Treated?

Diagnosis

Plague is a plausible diagnosis for people who are sick and live in, or have recently traveled to, the western United States or any other plague-endemic area. The most common sign of bubonic plague is the rapid development of a swollen and painful lymph gland called a bubo. A known flea bite or the presence of a bubo may help a doctor to consider plague as a cause of the illness.

In many cases, particularly in septicemic and pneumonic plague, there are no obvious signs that indicate plague. Diagnosis is made by taking samples from the patient, especially blood or part of a swollen lymph gland, and submitting them for laboratory testing. Once plague has been identified as a possible cause of the illness, appropriate treatment should begin immediately.

Treatment

Plague is a very serious illness, but is treatable with commonly available antibiotics. The earlier a patient seeks medical care and receives treatment that is appropriate for plague, the better their chances are of a full recovery.

People in close contact with very sick pneumonic plague patients may be evaluated and possibly placed under observation. Preventive antibiotic therapy may also be given, depending on the type and timing of personal contact.

If you live or have recently traveled to the western U.S. or any other plague endemic area and have symptoms suggestive of plague, seek health care immediately.

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How to Prevent Contracting Plague?

1. Reduce rodent habitat around your home, work place, and recreational areas. Remove brush, rock piles, junk, cluttered firewood, and possible rodent food supplies, such as pet and wild animal food. Make your home and outbuildings rodent-proof.

2. Wear gloves if you are handling or skinning potentially infected animals to prevent contact between your skin and the plague bacteria. Contact your local health department if you have questions about disposal of dead animals.

3. Use repellent if you think you could be exposed to rodent fleas during activities such as camping, hiking, or working outdoors. Products containing DEET can be applied to the skin as well as clothing and products containing permethrin can be applied to clothing (always follow instructions on the label).

4. Keep fleas off of your pets by applying flea control products. Animals that roam freely are more likely to come in contact with plague infected animals or fleas and could bring them into homes. If your pet becomes sick, seek care from a veterinarian as soon as possible.

5. Do not allow dogs or cats that roam free in endemic areas to sleep on your bed.

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Rabies

Fact Sheet

What is Rabies?

Rabies is a preventable viral disease of mammals most often transmitted through the bite of a rabid animal. The vast majority of rabies cases reported to the Centers for Disease Control and Prevention (CDC) each year occur in wild animals like raccoons, skunks, bats, and foxes.

The rabies virus infects the central nervous system, ultimately causing disease in the brain and death. The early symptoms of rabies in people are similar to that of many other illnesses, including fever, headache, and general weakness or discomfort. As the disease progresses, more specific symptoms appear and may include insomnia, anxiety, confusion, slight or partial paralysis, excitation, hallucinations, agitation, hypersalivation (increase in saliva), difficulty swallowing, and hydrophobia (fear of water). Death usually occurs within days of the onset of these symptoms.

What are the Signs and Symptoms of Rabies in Humans?

The first symptoms of rabies may be very similar to those of the flu including general weakness or discomfort, fever, or headache. These symptoms may last for days.

There may be also discomfort or a prickling or itching sensation at the site of bite, progressing within days to symptoms of cerebral dysfunction, anxiety, confusion, agitation. As the disease progresses, the person may experience delirium, abnormal behavior, hallucinations, and insomnia.

The acute period of disease typically ends after 2 to 10 days. Once clinical signs of rabies appear, the disease is nearly always fatal, and treatment is typically supportive.

Disease prevention includes administration of both passive antibody, through an injection of human immune globulin and a round of injections with rabies vaccine.

Once a person begins to exhibit signs of the disease, survival is rare. To date less than 10 documented cases of human survival from clinical rabies have been reported and only two have not had a history of pre- or postexposure prophylaxis.

How to Prevent Rabies in Humans?

Rabies in humans is 100% preventable through prompt appropriate medical care. Yet, more than 55,000 people, mostly in Africa and Asia, die from rabies every year - a rate of one person every ten minutes.

The most important global source of rabies in humans is from uncontrolled rabies in dogs. Children are often at greatest risk from rabies. They are more likely to be bitten by dogs, and are also more likely to be severely exposed through multiple bites in high-risk sites on the body. Severe exposures make it more difficult to prevent rabies unless access to good medical care is immediately available.

How is Rabies Diagnosed in Humans?

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Several tests are necessary to diagnose rabies ante-mortem (before death) in humans; no single test is sufficient. Tests are performed on samples of saliva, serum, spinal fluid, and skin biopsies of hair follicles at the nape of the neck. Saliva can be tested by virus isolation or reverse transcription followed by polymerase chain reaction (RT-PCR). Serum and spinal fluid are tested for antibodies to rabies virus. Skin biopsy specimens are examined for rabies antigen in the cutaneous nerves at the base of hair follicles.

What Medical Care is there for Rabies in Humans?

Regardless of the risk of rabies, bite wounds can cause serious injury such as nerve or tendon laceration and local and system infection. Your doctor will determine the best way to care for your wound, and will also consider how to treat the wound for the best possible cosmetic results.

For many types of bite wounds, immediate gentle irrigation with water or a dilute water povidone-iodine solution has been shown to markedly decrease the risk of bacterial infection.

Wound cleansing is especially important in rabies prevention since, in animal studies, thorough wound cleansing alone without other postexposure prophylaxis has been shown to markedly reduce the likelihood of rabies.

You should receive a tetanus shot if you have not been immunized in ten years. Decisions regarding the use of antibiotics, and primary wound closure should be decided together with your doctor.

Postexposure Vaccinations

If a person has previously received postexposure vaccinations or received preexposure vaccinations, only two doses of vaccine (on the day of exposure and then 3 days later) are needed. Human rabies immune globulin is not required. Your doctor and local health department will be able to guide you through the process.

For people who have never been vaccinated against rabies previously, postexposure anti-rabies vaccination should always include administration of both passive antibody and vaccine.

The combination of human rabies immune globulin (HRIG) and vaccine is recommended for both bite and nonbite exposures, regardless of the interval between exposure and initiation of treatment.

People who have been previously vaccinated or are receiving preexposure vaccination for rabies should receive only vaccine.

The vaccine should be given at recommended intervals for best results. Talk to your with your doctor or state or local public health officials if you will not be able to have shot at the recommended interval. Rabies prevention is a serious matter and changes should not be made in the schedule of doses.

People cannot transmit rabies to other people unless they themselves are sick with rabies. The prophylaxis you are receiving will protect you from developing rabies, and therefore you cannot expose other people to rabies. You should continue to participate in your normal activities.

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Rubella

Fact Sheet

What is Rubella?

Rubella, sometimes called "German measles," is a disease caused by a virus. The infection is usually mild with fever and rash. But, if a pregnant woman gets infected, the virus can cause serious birth defects.

The MMR vaccine protects against rubella. Before the MMR vaccine, more than 50,000 people in the U.S. got rubella each year. After the vaccine became widely used, the number declined rapidly, to fewer than 1,000 people per year.

Rubella is no longer circulating naturally in the U.S., but it is found in other countries, and people with rubella can travel to the U.S. anytime. Thus, rubella outbreaks still occur among groups of people who are not vaccinated.

What are Symptoms of Rubella?

Rubella usually causes the following symptoms in children:

- Rash that starts on the face and spreads to the rest of the body
- Low fever (less than 101 degrees)

These symptoms last 2 or 3 days.

Older children and adults may also have swollen glands and symptoms like a cold before the rash appears. Aching joints occur in many cases, especially among young women.

About half of the people who get rubella do not have symptoms.

How Does Rubella Spread?

Rubella spreads when an infected person coughs or sneezes.

The disease is most contagious when the person has a rash. But it can spread up to 7 days before the rash appears. People without symptoms can still spread rubella.

Is there a Vaccine for Rubella?

The MMR vaccine is a shot that includes vaccines for three diseases—measles, mumps, and *rubella*. It protects children from rubella by preparing their bodies to fight the rubella virus. Almost all children (at least 95 children out of 100) who get two doses of the MMR vaccine will be protected from rubella.

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SARS

Fact Sheet

What is SARS?

Severe acute respiratory syndrome (SARS) is a viral respiratory illness caused by a coronavirus, called SARS-associated coronavirus (SARS-CoV). SARS was first reported in Asia in February 2003. The illness spread to more than two dozen countries in North America, South America, Europe, and Asia before the SARS global outbreak of 2003 was contained.

Currently, there is no known SARS transmission anywhere in the world. The most recent human cases of SARS-CoV infection were reported in China in April 2004 in an outbreak resulting from laboratory-acquired infections. CDC and its partners, including the World Health Organization, continue to monitor the SARS situation globally

What are Symptoms of SARS?

In general, SARS begins with a high fever (temperature greater than 100.4°F [>38.0°C]). Other symptoms may include headache, an overall feeling of discomfort, and body aches. Some people also have mild respiratory symptoms at the outset. About 10 percent to 20 percent of patients have diarrhea. After 2 to 7 days, SARS patients may develop a dry cough. Most patients develop pneumonia.

How Does SARS Spread?

The main way that SARS seems to spread is by close person-to-person contact. The virus that causes SARS is thought to be transmitted most readily by respiratory droplets (droplet spread) produced when an infected person coughs or sneezes. Droplet spread can happen when droplets from the cough or sneeze of an infected person are propelled a short distance (generally up to 3 feet) through the air and deposited on the mucous membranes of the mouth, nose, or eyes of persons who are nearby. The virus also can spread when a person touches a surface or object contaminated with infectious droplets and then touches his or her mouth, nose, or eye(s). In addition, it is possible that the SARS virus might spread more broadly through the air (airborne spread) or by other ways that are not now known.

Definition of Close Contact

In the context of SARS, close contact means having cared for or lived with someone with SARS or having direct contact with respiratory secretions or body fluids of a patient with SARS. Examples of close contact include kissing or hugging, sharing eating or drinking utensils, talking to someone within 3 feet, and touching someone directly. Close contact does not include activities like walking by a person or briefly sitting across a waiting room or office.

If you think you (or someone in your family) might have SARS, you should:

- Call your healthcare provider as soon as possible. **Call ahead and alert the healthcare provider before your visit so that precautions can be taken to keep from exposing other people**.

If you have any questions, please contact Allen County Public Health at 419-228-4457. Health Department staff members are available to answer your questions Monday to Friday from 8:00 a.m. to 4:30 p.m. You can also visit www.allencountypublichealth.org and the Centers for Disease Control and Prevention's Web site at www.emergency.cdc.gov for additional information.

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- Cover your mouth and nose with a tissue when coughing or sneezing.
- Be careful not to expose others. If you have been exposed to SARS and become ill with any symptoms, limit your activities outside the home. Avoid public transportation (e.g., bus, taxi). Do not go to work, school, out-of-home child care, church, or activities in other public areas until after you are told that you do not have SARS.
- Follow any other instructions provided by local health authorities.

If you have SARS and are being cared for at home, you should:

- Follow the instructions given by your healthcare provider.
- Limit your activities outside the home except as necessary for medical care. For example, do not go to work, school, or public areas. If you must leave the home, wear a mask, if tolerated. Do not use public transportation.
- Wash your hands often and well, especially after you blow your nose.
- Cover your mouth and nose with a tissue when you sneeze or cough.
- If possible, wear a surgical mask when around other people in your home. If you can't wear a mask, the members of your household should wear one when they are around you.
- Don't share silverware, towels, or bedding with anyone in your home until these items have been washed with soap and hot water.
- Be sure that surfaces (counters, tabletops, door knobs, bathroom fixtures, etc.) that have been contaminated by your body fluids (sweat, saliva, mucous, or even vomit or urine) are cleaned with a household disinfectant used according to the manufacturer's instructions. Be sure that the person who cleans the surfaces wears disposable gloves during all cleaning activities. Disposable gloves should be thrown out after use and should not be reused.
- Follow these instructions for 10 days after your fever and respiratory symptoms have gone away or until the health department says you can return to normal activities.

If you are caring for someone at home who has SARS, you should:

- Be sure that you understand and can help the SARS patient follow the healthcare provider's instructions for medication and care.
- Be sure that all members of your household are washing their hands frequently with soap and hot water or using an alcohol-based hand rub.
- Wear disposable gloves if you will have direct contact with body fluids of a SARS patient. However, wearing gloves is not a substitute for good hand hygiene. After contact with body fluids of a SARS patient, remove the gloves, throw them out, and wash your hands. Do not wash or reuse the gloves.

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- Encourage the person with SARS to cover his or her mouth and nose with a tissue when coughing or sneezing. If possible, the person with SARS should wear a surgical mask during close contact with other people in the home. If the person with SARS cannot wear a surgical mask, other members of the household should wear one when in the room with that person.
- Do not use silverware, towels, bedding, clothing, or other items that have been used by the person with SARS until these items have been washed with soap and hot water.
- Clean surfaces in the patient's room and the bathroom fixtures used by the patient daily, with a household disinfectant used according to the manufacturer's instructions. When cleaning, wear disposable gloves, and dispose of them after use. Or, use household utility gloves.
- Limit the number of persons in the household to those who are essential for patient support. Other household members should either be relocated or minimize contact with the patient in the home. This is particularly important for persons at risk of serious complications of SARS (e.g., persons with underlying heart or lung disease, diabetes mellitus, older age).
- Unexposed persons who do not have an essential need to be in the home should not visit.
- Follow these instructions for 10 days after the sick person's fever and respiratory symptoms have gone away or until the health department says the SARS patient can return to normal activities.
- For 10 days after your last exposure to the person with SARS, be vigilant for fever (i.e., measure your temperature twice daily), respiratory symptoms, and other early symptoms of SARS. Common early symptoms include chills, body aches, and headache. In some patients, body aches and headache may appear 12 to 24 hours before fever. Diarrhea, sore throat, and runny nose may also be early symptoms of SARS. If you do not have any of these symptoms, you do not need to limit your activities outside the home. You may go to work, school, out-of-home child care, church, or activities in other public areas.
- Follow any other instructions provided by local health authorities.
- If you start feeling sick, especially if you develop a fever, respiratory symptoms, or other early symptoms of SARS, contact your healthcare provider immediately, and tell the healthcare provider that you have had close contact with a SARS patient.

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Smallpox

Fact Sheet

What is Smallpox?

Smallpox is a serious, contagious, and sometimes fatal infectious disease. There is no specific treatment for smallpox disease, and the only prevention is vaccination.

There are two clinical forms of smallpox. Variola major is the severe and most common form of smallpox, with a more extensive rash and higher fever. There are four types of variola major smallpox: ordinary (the most frequent type, accounting for 90% or more of cases); modified (mild and occurring in previously vaccinated persons); flat; and hemorrhagic (both rare and very severe). Historically, variola major has an overall fatality rate of about 30%; however, flat and hemorrhagic smallpox usually are fatal. Variola minor is a less common presentation of smallpox, and a much less severe disease, with death rates historically of 1% or less.

Smallpox outbreaks have occurred from time to time for thousands of years, but the disease is now eradicated after a successful worldwide vaccination program. The last case of smallpox in the United States was in 1949. The last naturally occurring case in the world was in Somalia in 1977. After the disease was eliminated from the world, routine vaccination against smallpox among the general public was stopped because it was no longer necessary for prevention.

What are Possible Ways of Contracting Smallpox?

- **Prolonged face-to-face contact with someone who has smallpox** (usually someone who already has a smallpox rash). This was how most people became infected with smallpox in the past. However, a person can be exposed to someone who has smallpox and not become infected.
- **Direct contact with infected bodily fluids or an object such as bedding or clothing** that has the virus on it.
- **Exposure to an aerosol release of smallpox (the virus is put in the air).** On rare occasions in the past, smallpox was spread by virus carried in the air in enclosed places such as buildings, buses, and trains. The smallpox virus is not strong and is killed by sunlight and heat. In lab experiments, 90% of aerosolized smallpox virus dies within 24 hours; in the presence of sunlight, this percentage would be even greater.

What are Signs and Symptoms of Smallpox?

- For the first 7 to 17 days after exposure, the infected person feels fine and is not contagious (cannot spread the disease).
- After 7-17 days, the first symptoms of smallpox appear. These include fever, tiredness, head and body aches, and sometimes vomiting. The fever is usually high, in the range of 101 to 104 degrees Fahrenheit. At this time, people are usually too sick to carry on their normal activities. This stage may last for 2 to 4 days.

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- Next, a rash appears first as small red spots on the tongue and in the mouth. A rash then appears on the skin, starting on the face and spreading to the arms and legs and then to the hands and feet. Usually the rash spreads to all parts of the body within 24 hours.
- The rash becomes raised bumps and the bumps become “pustules”, which are raised, usually round and firm to the touch as if there’s a small round object under the skin.
- The pustules begin to form a crust and then scab. By the end of the second week after the rash appears, most of the sores have scabbed over.
- The scabs begin to fall off, leaving scars. Most scabs will have fallen off three weeks after the rash first appears.

A person with smallpox is sometimes contagious when they get a fever, but the person becomes most contagious when they get a rash. The infected person is contagious until their last scab falls off. In the past, most people recovered from smallpox, but three out of every ten smallpox patients died.

How Do You Prevent and Treat Smallpox?

There is no proven treatment for smallpox. Scientists are currently researching new treatments. Patients with smallpox may be helped by intravenous fluids, medicine to control fever or pain, and antibiotics for any secondary bacterial infections that may occur.

One of the best ways to prevent smallpox is through vaccination. If given to a person before exposure to smallpox, the vaccine can completely protect them. Vaccination within 3 days after exposure will prevent or greatly lessen the severity of smallpox in most people. Vaccination 4 to 7 days after exposure likely offers some protection from disease or may decrease the severity of disease. Vaccination will not protect smallpox patients who already have a rash.

Currently, the smallpox vaccine is not widely available to the general public. However, there is enough smallpox vaccine to vaccinate every person in the United States in the event of a smallpox emergency.

How Can I Protect My Family During a Smallpox Outbreak?

- **Stay informed. Listen to the news to learn how the outbreak is affecting your community.** Public health officials will share important information including areas where smallpox cases have been found and who to call and where to go if you think you have been exposed to smallpox.
- **Follow the instructions of public health authorities.**
- **Stay away from, and keep your children away from, anyone who might have smallpox.** This is especially important if you or your children have not been vaccinated.
- **If you think you have been exposed to smallpox, stay away from others and call your health department or health care provider immediately**; they will tell you where to go.

If you have any questions, please contact Allen County Public Health at 419-228-4457. Health Department staff members are available to answer your questions Monday to Friday from 8:00 a.m. to 4:30 p.m. You can also visit www.allencountypublichealth.org and the Centers for Disease Control and Prevention’s Web site at www.emergency.cdc.gov for additional information.

Tularemia

Fact Sheet

What is Tularemia?

Tularemia is a potentially serious illness that occurs naturally in the United States. It is caused by the bacterium *Francisella tularensis* found in animals (especially rodents, rabbits, and hares).

What are Symptoms of Tularemia?

Symptoms of tularemia could include:

- Sudden fever
- Chills
- Headaches
- Diarrhea
- Muscle aches
- Joint pain
- Dry cough
- Progressive weakness

People can also catch pneumonia and develop chest pain, bloody sputum and can have trouble breathing and even sometimes stop breathing.

Other symptoms of tularemia depend on how a person was exposed to the tularemia bacteria. These symptoms can include ulcers on the skin or mouth, swollen and painful lymph glands, swollen and painful eyes, and a sore throat.

Symptoms usually appear 3 to 5 days after exposure to the bacteria, but can take as long as 14 days.

How Can I Get Tularemia?

People can get tularemia many different ways:

- Being bitten by an infected tick, deerfly or other insect
- Handling infected animal carcasses
- Eating or drinking contaminated food or water
- Breathing in the bacteria, *F. tularensis*

Tularemia is not known to be spread from person to person. People who have tularemia do not need to be isolated. People who have been exposed to the tularemia bacteria should be treated as soon as possible. The disease can be fatal if it is not treated with the right antibiotics.

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How Can I Prevent from Contracting Tularemia?

Tularemia occurs naturally in many parts of the United States. Use insect repellent containing DEET on your skin, or treat clothing with repellent containing permethrin, to prevent insect bites. Wash your hands often, using soap and warm water, especially after handling animal carcasses. Be sure to cook your food thoroughly and that your water is from a safe source.

Note any change in the behavior of your pets (especially rodents, rabbits, and hares) or livestock, and consult a veterinarian if they develop unusual symptoms.

How is Tularemia Treated?

Your doctor will most likely prescribe antibiotics, which must be taken according to the directions supplied with your prescription to ensure the best possible result. Let your doctor know if you have any allergy to antibiotics.

A vaccine for tularemia is under review by the Food and Drug Administration and is not currently available in the United States.

Can Tularemia Be Used as a Weapon?

Francisella tularensis is very infectious. A small number (10-50 or so organisms) can cause disease. If *F. tularensis* were used as a weapon, the bacteria would likely be made airborne for exposure by inhalation. People who inhale an infectious aerosol would generally experience severe respiratory illness, including life-threatening pneumonia and systemic infection, if they are not treated. The bacteria that cause tularemia occur widely in nature and could be isolated and grown in quantity in a laboratory, although manufacturing an effective aerosol weapon would require considerable sophistication.

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Viral Hemorrhagic Fever

Fact Sheet

What is VHF and can it spread from person to person?

VHF is a serious illness caused by a virus. Many different viruses can cause VHF. Examples of viruses that cause VHF include Ebola, Marburg, and Lassa viruses.

Some of the viruses that cause VHF can spread from person to person through direct contact with blood or other body fluids (e.g., saliva or urine). Some can also be spread by contaminated objects, such as the bedding of a sick person.

Some forms of VHF occur naturally throughout the world. These can be passed to people through infected animals, such as livestock, rodents, or insects.

Every year, several cases of VHF occur outside the United States. However, natural cases do not occur in the United States unless brought in by an infected traveler or released on purpose.

What are the symptoms of VHFs?

Depending on the type of virus, symptoms of VHF may differ. However, they can cause fever, headache, sore throat, muscle aches, abdominal pain, vomiting, diarrhea, and, in the most severe cases, bleeding, shock, and multi-organ failure.

Although many of the initial symptoms are similar to the flu or other viral illnesses, VHFs can be far more serious. Take extra precautions because of the reports of VHFs in the xxx area.

How are VHFs treated?

A VHF can be a life-threatening illness. However, medical treatment can control symptoms and save lives.

Treatment may include supportive care, such as balancing the patient's fluids and electrolytes and maintaining their oxygen status and blood pressure. Secondary bacterial infections may be treated with antibiotics.

For many VHFs, specific treatments against the viruses that cause them do not exist.

What to do if you have symptoms of VHFs?

If you become ill with fever or develop other symptoms, such as chills, muscle aches, nausea, vomiting, or rash, visit a health-care provider immediately. Tell the provider about your symptoms before going to the office or emergency room so arrangements can be made to prevent transmission to others in the healthcare setting.

Until you can get medical help and what illness you have can be, stay away from others to avoid spreading the disease to them.

People with symptoms of a possible VHF, including fever, should stay home and avoid contact with other household members until they are evaluated by a healthcare provider

If you have any questions, please contact Allen County Public Health at 419-228-4457. Health Department staff members are available to answer your questions Monday to Friday from 8:00 a.m. to 4:30 p.m. You can also visit www.allencountypublichealth.org and the Centers for Disease Control and Prevention's Web site at www.emergency.cdc.gov for additional information.

Viral Hemorrhagic Fever Cont.

Fact Sheet

In addition, take these steps:

1. Keep your hands clean by washing them with soap and water or using an alcohol-based hand gel.
2. Be prepared for possible nausea and vomiting. Have a large heavy duty plastic bag or a basin nearby.
3. Avoid taking any aspirin or ibuprofen (including brand name drugs like Motrin, Advil, Nuprin, etc.). You can use acetaminophen according to the label instructions.

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