

Amebiasis (amebic dysentery)

What is amebiasis?

Amebiasis is an intestinal illness caused by a microscopic parasite called *Entamoeba histolytica*. Approximately 1,000 cases are reported each year in New York state.

Who gets amebiasis?

Anyone can get amebiasis, but it is recognized more often in people arriving from tropical or subtropical areas, individuals living in institutions and men who have sex with men.

How is amebiasis spread?

Amebiasis is contracted by consuming contaminated food or water containing the cyst stage of the parasite. It can also be spread by person-to-person contact.

What are the symptoms of amebiasis?

People exposed to this parasite may experience mild or severe symptoms or no symptoms at all. Fortunately, most exposed people do not become seriously ill. The mild form of amebiasis includes nausea, loose stools, weight loss, abdominal tenderness and occasional fever. Rarely, the parasite will invade the body beyond the intestines and cause a more serious infection, such as a liver abscess.

How soon after exposure do symptoms appear?

The symptoms may appear from a few days to a few months after exposure but usually within two to four weeks.

For how long can an infected person carry this parasite?

Some people with amebiasis may carry the parasite for weeks to years, often without symptoms.

Where are the parasites that cause amebiasis found?

The parasite lives only in humans. Fecal material from infected people may contaminate water or food, which may spread the parasites to anyone who consumes them.

How is it diagnosed?

Examination of stools under a microscope is the most common way for a doctor to diagnose amebiasis. Sometimes, several stool samples must be obtained because the number of amoeba being passed in the stool, which varies from day to day, may be too low to detect from any single sample.

What is the treatment for amebiasis?

Specific antibiotics such as metronidazole can be prescribed by a doctor to treat amebiasis.

Should an infected person be excluded from work or school?

Although people with diarrhea due to amebiasis should not attend school or go to work, it is not necessary to exclude infected persons when they feel better and stools are normal. Casual contact at work or school is unlikely to transmit the disease. Special precautions may be needed by foodhandlers or children enrolled in day care settings. Consult your local health department for advice in such instances.

What precautions should the infected person follow?

The most important precautions are careful hand washing after each toilet visit and proper disposal of sewage. Homosexual males should refrain from intimate contact until effectively treated.

Anthrax (malignant edema, woollsorters' disease)

What is anthrax?

Anthrax is a rare infectious disease caused by the bacterium *Bacillus anthracis*. Anthrax occurs naturally around the world in wild and domestic hoofed animals, especially cattle, sheep, goats, camels and antelopes. It can also occur in humans when they are exposed to the bacterium, usually through handling animals or animal hides. There are three forms of anthrax infection: cutaneous (skin), inhalation (lungs) and gastrointestinal (stomach and intestine). If people have been intentionally exposed, as in a bioterrorist release, contact with skin would be the most likely route of exposure. Breathing in the spores that have been spread through the air could cause inhalation anthrax.

How common is anthrax and who can get it?

Anthrax can be found around the world. It is most common in agricultural regions where it occurs in animals. It is more common in developing countries or countries without veterinary public health programs. Anthrax is reported more often in some regions of the world (South and Central America, Southern and Eastern Europe, Asia, Africa, the Caribbean and the Middle East) than in others. It has been extremely rare in the United States in recent decades, and until the recent cases in Florida, has been limited to the cutaneous (skin) form. When anthrax affects humans, it is usually due to an occupational exposure to infected animals or their products. However, anthrax is considered to be one of a number of potential agents for use in biological terrorism.

How is anthrax spread?

Anthrax is usually spread in the form of a spore. (A spore is a dormant form that certain bacteria take when they have no food supply. Spores can grow and cause disease when better conditions are present, as in the human body.)

Anthrax is generally spread in one of three ways. Most persons who are exposed to anthrax become ill within one week:

- Skin (cutaneous) - Most anthrax infections occur when people touch contaminated animal products like wool, bone, hair and hide. The infection occurs when the bacteria enters a cut or scratch in the skin.
- Inhalation (lung) - Some anthrax infections occur when people breathe in the spores of the bacteria. However, the infectious dose for inhalational anthrax is quite high, and requires exposure to a large number of spores (8,000-10,000).
- Gastrointestinal - Some people may get anthrax by eating infected meat that has not been properly cooked.

What are the symptoms of anthrax?

- Skin (cutaneous) - This is the most common form of anthrax. Infection requires a break in the skin. The first symptoms include itching where the skin has been exposed. Then, a large boil or sore appears. The sore becomes covered by a black scab. If not treated, the infection can spread to the lymph nodes and bloodstream.
- Inhalation - Inhalation anthrax has been very rare in the U.S. First symptoms include fever, fatigue, malaise and a cough or chest pain. High fever, rapid pulse and severe difficulty breathing follow in two to five days. Inhalation anthrax is often fatal.
- Gastrointestinal - This form occurs only after eating infected, undercooked meat. First symptoms include fever; abdominal pain; loose, watery bowel movements; and vomiting with blood.

How soon after exposure do symptoms develop?

Symptoms usually develop between one and seven days after exposure but prolonged periods up to 12 days for cutaneous (skin) anthrax and 60 days for inhalation anthrax are possible, though rare.

Can anthrax be spread person to person?

Inhalation (lung) anthrax is not spread from person to person. Even if you develop symptoms of inhalation anthrax, you are not contagious to other persons. If you develop cutaneous (skin) anthrax, the drainage from an open sore presents a low risk of infection to others. The only way cutaneous (skin) anthrax can be transmitted is by direct contact with the drainage from an open sore. Anthrax is not spread from person to person by casual contact, sharing office space or by coughing and sneezing.

How is it diagnosed?

Anthrax is diagnosed when the *Bacillus anthracis* bacterium is found in the blood, skin lesions or respiratory secretions by a laboratory culture. It can also be diagnosed by measuring specific antibodies in the blood of infected persons. Nose swabs are not a good way to diagnose anthrax.

What is the treatment for illness caused by anthrax?

There are several antibiotics that are used successfully to treat anthrax. Treatment is highly effective in cases of cutaneous (skin) anthrax and is effective in inhalation and gastrointestinal anthrax if begun early in the course of infection. The United States has a large supply of these antibiotics and can quickly manufacture more if needed.

Is there a way to prevent infection?

Persons known to be exposed to confirmed anthrax spores will be given antibiotics, usually ciprofloxacin (Cipro) or doxycycline, to prevent infection.

Do I need to disinfect myself or my belongings if I believe I was exposed to anthrax?

Most threats regarding anthrax have proven to be hoaxes. However, in the event of a possible exposure to a powder or other unknown substance with a threat that may indicate anthrax, call 911 and leave the material alone. To prevent infection if you have a skin exposure to the powder or other substance, wash your hands vigorously with soap and water, and shower with soap and water if necessary. Similarly, washing possibly contaminated clothes in the regular laundry will safely remove any possible anthrax. To be inhaled, anthrax spores must first be aerosolized (dispersed in the air) which does not usually occur. In the unlikely event that you do inhale spores, medical evaluation and treatment is needed, usually after spores are identified.

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Arboviral Infections (arthropod-borne encephalitis, eastern equine encephalitis, St. Louis encephalitis, California encephalitis, Powassan encephalitis, West Nile encephalitis)

What are arboviral infections?

Arboviral (short for arthropod-borne) infections are caused by any number of viruses transmitted by arthropods such as mosquitoes and ticks. These infections generally occur during warm weather months, when mosquitoes and ticks are active.

Who gets arboviral infections?

Anyone can get an arboviral infection but the elderly appear to be most susceptible. Young children may experience more severe illness with eastern equine encephalitis and certain types of California encephalitis.

How are arboviral infections transmitted?

Most arboviral infections are spread by infected mosquitoes. Fortunately, only a few types of mosquitoes are capable of transmitting disease and only a small number of the mosquitoes will actually be carrying a virus at any one time. Occasionally, migrating birds have the ability to carry viruses from one area of the country to another; humans, however, cannot become infected by birds, only mosquitoes. Some arboviral infections, such as Powassan encephalitis, may be transmitted by infected ticks.

What are the symptoms of arboviral infections?

Symptoms of the various types of viral infections transmitted by mosquitoes and ticks are usually similar, except for their severity. Most infections do not result in any symptoms. Mild cases may occur with only a slight fever and/or headache and bodyaches and resolve with no complications. Severe infections are marked by a rapid onset, headache, high fever, disorientation, tremors, convulsions, paralysis, coma or death.

When do symptoms appear?

Symptoms usually occur three to 15 days after a bite from an infected mosquito or tick.

Does past infection with an arbovirus make a person immune?

Infection with an arbovirus may provide immunity to that specific virus and perhaps to related viruses.

What is the treatment for an infection due to an arbovirus?

Health care providers will usually attempt to relieve the symptoms of the illness, but there is no specific treatment available for arboviral infections.

How can arboviral infections be prevented?

To minimize exposed skin, insect repellents containing DEET can be used by persons spending time outdoors in mosquito- or tick-infested areas. Be sure to follow label directions carefully. Consider wearing long sleeves and tucking pants into socks and shirt into pants when in tick habitat or outdoors at dusk or dawn, the time of day when mosquitoes are most active. Wear light-colored clothes to spot ticks easily.

To reduce the mosquito population around your home and property, reduce or eliminate all standing water:

- Dispose of tin cans, plastic containers, ceramic pots or similar water-holding containers.
- Remove and recycle all discarded tires on your property. Used tires are a significant mosquito-breeding site.
- Drill holes in the bottoms of recycling containers that are kept outdoors.
- Make sure roof gutters drain properly and clean clogged gutters in the spring and fall.
- Remove leaf debris from yards and gardens.
- Turn over wading pools and wheelbarrows when not in use.
- Change the water in birdbaths twice weekly.
- Clean vegetation and debris from edges of ponds.
- Clean and chlorinate swimming pools, outdoor saunas and hot tubs.
- Drain water from pool covers.
- Use landscaping to eliminate standing water that collects on your property.
- Make sure window and door screens fit properly and are in good condition.

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Babesiosis

What is babesiosis?

Babesiosis is a rare, severe and sometimes fatal tick-borne disease caused by various types of Babesia, a microscopic parasite that infects red blood cells. In New York state, the causative parasite is Babesia microti.

Who gets babesiosis?

Babesiosis is seen most frequently in the elderly or in immunocompromised individuals. Cases of this disease have been primarily reported during spring, summer and fall in coastal areas in the northeastern United States, especially Nantucket Island off the coast of Massachusetts and on Long Island in New York. Cases have also been reported in Wisconsin, California, Georgia, Missouri and some European countries. Babesiosis can be more severe in people who have had their spleen removed.

How is babesiosis transmitted?

Babesiosis is transmitted by the bite of an infected deer tick, Ixodes scapularis. Transmission can also occur via transfusion of contaminated blood.

What are the symptoms of babesiosis?

The disease can cause fever, fatigue and hemolytic anemia lasting from several days to several months. Infections can occur without producing symptoms.

When do symptoms appear?

It may take from one to eight weeks, sometimes longer, for symptoms to appear.

Does past infection with babesiosis make a person immune?

It is not known whether past infection with babesiosis can make a person immune.

What is the treatment for babesiosis?

Standardized treatments for babesiosis have not been developed. However, some drugs used in the treatment of malaria have been found to be effective in some patients with babesiosis.

What can be done to prevent babesiosis?

When in tick-infested habitat - wooded and grassy areas - take special precautions to prevent tick bites, such as wearing light-colored clothing (for easy tick discovery) and tucking pants into socks and shirt into pants. Check after every two to three hours of outdoor activity for ticks on clothing or skin. Brush off any ticks on clothing before skin attachment occurs. A thorough check of body surfaces for attached ticks should be done at the end of the day. If removal of attached ticks occurs within 36 hours, the risk of tick-borne infection is minimal.

Repellents can be effective at reducing bites from ticks that can transmit disease. But their use is not without risk of health effects, especially if repellents are applied in large amounts or improperly.

Repellents commonly available to consumers contain the active ingredients DEET (N, N-diethyl-m-toluamide), permethrin, or botanical oils. DEET products have been widely used for many years, but have occasionally been associated with health effects. Skin reactions (particularly at DEET concentrations of 50 percent and above) and eye irritation are the most frequently reported health problems. Products containing permethrin are for use on clothing only, not on skin. Rather than acting as a repellent, permethrin kills ticks and insects that come in contact with treated clothes. Permethrin can cause eye irritation. Insect repellents containing botanical oils, such as oil of geranium, cedar, lemongrass, soy or citronella are also available, but there is limited information on their effectiveness and toxicity. **If you decide to use a repellent, use only what and how much you need for your situation.**

In addition:

- Be sure to follow label directions.
- Use repellents only in small amounts, avoiding unnecessary repeat application. Try to reduce the use of repellents by dressing in long sleeves and pants tucked into socks or boots.
- Children may be at greater risk for reactions to repellents, in part, because their exposure may be greater. Do not apply repellents directly to children. Apply to your own hands and then put it on the child.
- Do not apply near eyes, nose or mouth and use sparingly around ears. Do not apply to the hands of small children.
- After returning indoors, wash treated skin with soap and water.

How should a tick be removed?

Grasp the mouthparts with tweezers as close as possible to the attachment (skin) site. Be careful not to squeeze, crush or puncture the body of the tick, which may contain infectious fluids. After removing the tick, thoroughly disinfect the bite site and wash hands. See or call a doctor if there are concerns about incomplete tick removal. Do not attempt to remove ticks by using petroleum jelly, lit cigarettes or other home remedies because these may actually increase the chance of contracting a tick-borne disease.

How do I obtain information on a tick?

Tick identification services are available through the New York State Department of Health and some county health departments. The New York State Department of Health Tick Identification Service will tell you the species of the tick, whether it is engorged with blood and, if so, how long it may have been feeding. The Tick Identification Service will also report whether the mouthparts are present (if not, they may have remained in the skin and need to be removed, as you would a splinter). The Tick Identification Service **will not** tell you whether the tick is infected with disease-causing organisms. There is no charge for this service.

If you wish to have a tick identified, place it in a small jar containing rubbing alcohol, seal the container to prevent leakage and complete the Tick Identification Submittal Form. Mail the tick in the sealed container, along with the completed submittal form, to the New York State Health Department's Tick Identification Service, c/o HVCC Central Receiving, 80 Vandenburg Avenue, Troy, NY 12180. Once you send a tick to be identified it will not be returned.

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Botulism (food-borne botulism, infant botulism)

What is botulism?

Botulism is a serious illness caused by a nerve toxin made by the bacterium, *Clostridium botulinum*. (A toxin is a poison that is released by some bacteria and viruses). There are three types of botulism: food, wound and infant botulism. Eating food that has the botulism toxin causes food-borne botulism. It often involves improperly processed home canned foods. Botulism in infants under one year of age has been associated with the intake of contaminated honey. Wound botulism occurs when *Clostridium botulinum* spores contaminate a wound and produce toxin.

Can botulism be used as a bioterrorism threat?

In the event of a bioterrorism event, people intentionally exposed who breathe in the toxin or eat the toxin in contaminated food or water might develop the illness. No information is available on the effects of breathing in the botulinum toxin but it may be similar to the food-borne illness.

How is it spread?

A person must eat contaminated food that has not been properly canned, cooked or reheated after the bacteria have produced the toxin. **Person-to-person spread does not occur.**

What are the symptoms?

Food-borne and infant botulism produce symptoms that affect the nervous system. The classic symptoms of botulism include double vision, blurred vision, drooping eyelids, slurred speech, difficulty swallowing, dry mouth and muscle weakness that goes down the body, first the shoulders, then upper arms, lower arms, thighs, calves, feet. If untreated these symptoms may progress to paralysis. Infants with botulism appear lethargic, feed poorly, are constipated, and have a weak cry and poor muscle tone.

How soon after exposure would symptoms develop?

Symptoms generally begin 12-36 hours after eating contaminated food, but may occur as early as a few hours and as late as 10 days.

Can I spread this to my family?

No, this cannot be spread from person to person.

What is the treatment?

The symptoms of botulism make hospitalization necessary. If diagnosed early, food-borne and wound botulism can be treated with an antitoxin, which blocks the action of the toxin circulating in the blood. This can prevent patients from worsening, but recovery still takes many weeks. If left untreated, a patient may need to be on a breathing machine (ventilator) for weeks and would require intensive medical and nursing care. Currently antitoxin is not usually given in cases of infant botulism.

If I develop symptoms, what do I do?

If you should develop any of the symptoms above, please contact your physician or your local hospital immediately for evaluation. Please keep any contaminated food for testing.

Can botulism be prevented?

All canned and preserved foods should be properly processed and prepared. Bulging containers should not be opened and foods with an unusual smell should not be eaten or even tasted. Canned food with bulging lids should be thrown away. Identified sources of infant botulism, such as honey, should not be fed to infants.

Where can I get additional information?

For additional information contact the Centers for Disease Control (CDC) and Prevention public response hotline:

- English (888) 246-2675
- Espanol (888) 246-2857
- TTY (866) 874-2646

Or, go to the CDC Web site: <http://www.bt.cdc.gov/agent/botulism/index.asp>.

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Brucellosis

What is brucellosis?

Brucellosis is a bacterial disease that may affect various organs of the body.

Who gets brucellosis?

Everyone is susceptible to the bacteria and may get the disease if exposed. It is more likely to be found in people associated with livestock.

How is brucellosis spread?

The bacteria that causes this disease are found in unpasteurized milk from diseased cows and also from discharges from cattle or goats that abort their fetus. It is unlikely that this disease would be spread from person to person.

What are the symptoms of brucellosis?

Symptoms of brucellosis include intermittent or irregular fever of variable duration, headache, weakness, profuse sweating, chills, weight loss and generalized aching.

How soon do symptoms appear?

The time period is highly variable, but symptoms usually appear within five to 30 days.

Does past infection with brucellosis make a person immune?

It is unlikely that an individual will be reinfected.

What is the treatment for brucellosis?

Tetracycline or tetracycline plus streptomycin is the treatment of choice. Early diagnosis leading to prompt treatment is essential to prevent chronic infection.

What can be done to prevent the spread of brucellosis?

The use of pasteurized milk and prevention of contact with infected cattle, sheep or goats will reduce the risk of infection.

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Campylobacteriosis

What is campylobacteriosis?

Campylobacteriosis is a bacterial infection that affects the intestinal tract and, rarely, the bloodstream. It is probably the most common cause of bacterial diarrhea in New York state. Most cases are seen in the summer months and occur as single cases. Outbreaks are uncommon.

Is this a new disease?

No. Campylobacteriosis has probably been in existence for many years but has only recently been recognized as a common infection as a result of improved laboratory methods.

Who gets campylobacteriosis?

Anyone can get campylobacter infection.

How is the germ spread?

Campylobacter germs are generally spread by consumption of contaminated food or water and, occasionally, by contact with infected people or animals.

What are the symptoms of campylobacteriosis?

Campylobacteriosis may cause mild or severe diarrhea, often with fever and traces of blood in the stool.

How soon after exposure do symptoms appear?

The symptoms generally appear two to five days after the exposure.

Where are the campylobacter germs found?

Many animals including swine, cattle, dogs and birds (particularly poultry) carry the germ in their intestines. These sources in turn may contaminate meat products (particularly poultry), water supplies, milk and other items in the food chain.

For how long can a person carry the campylobacter germ?

Generally, infected people will continue to pass the germ in their feces for a few days to a week or more. Certain antibiotics may shorten the carrier phase.

Do infected people need to be isolated or excluded from school or work?

Since the organism is passed in the feces, only people with active diarrhea who are unable to control their bowel habits (infants and young children for example) should be isolated. Most infected people may return to work or school when their stools become formed provided that they carefully wash their hands after toilet visits. Food handlers, children in day care and health care workers must obtain the approval of the local or state health department before returning to their routine activities.

What is the treatment for campylobacteriosis?

Most people infected with campylobacter will recover on their own or require fluids to prevent dehydration. Antibiotics are occasionally used to treat severe cases or to shorten the carrier phase, which may be important for food handlers, children in day care and health care workers. Since relapses occasionally occur, some physicians might treat mild cases with antibiotics to prevent a recurrence of symptoms.

How can campylobacteriosis be prevented?

1. Always treat raw poultry, beef and pork as if they are contaminated and handle accordingly:
 - Wrap fresh meats in plastic bags at the market to prevent blood from dripping on other foods.
 - Refrigerate foods promptly; minimize holding at room temperature.
 - Cutting boards and counters used for preparation should be washed immediately after use to prevent cross contamination with other foods.
 - Avoid eating raw or undercooked meats.
 - Ensure that the correct internal cooking temperature is reached particularly when using a microwave.
2. Avoid eating raw eggs or undercooking foods containing raw eggs.
3. Avoid using raw milk.
4. Encourage careful hand washing before and after food preparation.
5. Make sure children, particularly those who handle pets, wash their hands carefully.

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Chancroid

What is chancroid?

Chancroid is a sexually transmitted disease (STD) caused by a bacterium. It is common in tropical countries but rare in other parts of the world.

Who gets chancroid?

Any sexually active person can be infected with chancroid. It is more commonly seen in men than in women, particularly uncircumcised males.

How is chancroid spread?

Chancroid is spread by sexual contact with an infected individual. The bacteria are more likely to invade the sexual organs at the point of a pre-existing injury, such as a small cut or scratch. The likelihood of transmission is greater if a person is very active sexually and does not practice personal hygiene.

What are the symptoms of chancroid?

The first sign of infection is usually the appearance of one or more sores or raised bumps on the genital organs. Sores are surrounded by a narrow red border which soon becomes filled with pus and eventually ruptures, leaving a painful open sore. In 50 percent of untreated cases, the chancroid bacteria infect the lymph glands in the groin. Within five to 10 days of the appearance of primary sores, the glands on one side (sometimes both sides) of the groin become enlarged, hard and painful. A rounded painful swelling results which may eventually rupture.

How soon do symptoms appear?

Symptoms usually appear four to seven days after exposure.

When and for how long is a person able to spread chancroid?

Chancroid is contagious as long as the infected person has any open sores. The open sores contain bacteria and any contact with these sores can result in infection.

What complications can result from chancroid?

Untreated chancroid often results in ulcers occurring on the genitals. Sometimes the ulcers persist for weeks or months.

Does past infection with chancroid make a person immune?

No. Reinfection can readily occur immediately after cure. There is no evidence of natural resistance.

What is the treatment for chancroid?

Chancroid may be successfully treated with certain antibiotics. Lesions and ulcers can be expected to heal within two weeks.

How can the spread of chancroid be prevented?

- Limit the number of your sex partners.
- Use a condom.
- Carefully wash the genitals after sexual relations.
- If you think you are infected, avoid any sexual contact and visit your local STD clinic, a hospital or your doctor. Notify all sexual contacts immediately so they can obtain examination and treatment.

Chlamydia Trachomatis

What is chlamydia?

Chlamydia is a bacterial infection that is spread through sexual contact with an infected person. Chlamydia is one of the most common sexually transmitted diseases (STD); more than 50 million cases occur worldwide and approximately three million cases occur in the United States annually.

Who gets chlamydia?

Any sexually active person can be infected with chlamydia. Most often, chlamydia occurs in adolescents and young adults (ages 15-24) who have new or multiple sex partners and who do not consistently use condoms or other barrier contraception.

How is chlamydia spread?

Chlamydia is spread through sexual contact. This includes penis to vagina or penis to rectum contact. It can also be passed from the mother to her newborn during birth.

What are the symptoms of chlamydia?

Because approximately 75 percent of women and 50 percent of men have no symptoms, most people infected with chlamydia are not aware of their infections and may not seek health care. If males have symptoms, they may include urethritis (itching and/or burning on urination) and discharge from the penis in small or moderate amounts. If females have symptoms, they may include vaginal discharge and painful urination.

When and for how long is a person able to spread chlamydia?

From the time a person is infected with chlamydia, he or she can spread the disease. A person can continue to spread the infection until properly treated.

Does past infection with chlamydia make a person immune?

Past infection with chlamydia does not make a person immune to chlamydia.

What is the treatment for chlamydia?

Chlamydia is treated with antibiotics. The recommended antibiotic treatment is doxycycline taken twice a day for seven days or azithromycin taken in one single dose. Other alternative medications may be used but are not as effective as azithromycin and doxycycline. Persons being treated for chlamydia should not have sexual intercourse for seven days after single dose therapy (azithromycin) or until completion of all seven days of antibiotics (doxycycline). Patients can be re-infected if their sex partners are not treated.

What happens if chlamydia goes untreated?

If a person is not treated for chlamydia, complications may occur. Women frequently develop pelvic inflammatory disease (PID). PID can cause infertility (not being able to get pregnant), chronic pelvic pain, tubal pregnancies and the continued spread of the disease. In men, untreated chlamydia can cause urethral infection and complications such as swollen and tender testicles. Chlamydia infection during pregnancy may result in premature rupture of membranes, preterm delivery and possible tubal pregnancy in a small percent of women. In addition, chlamydia can cause conjunctival (eye) and pneumonic (lung) infection in the newborn. Persons with a chlamydia infection have an increased chance of getting other infections such as gonorrhea or HIV.

What can be done to prevent the spread of chlamydia?

Limit your number of sex partners. Use a male or female condom. If you think you are infected or have been exposed, avoid any sexual contact and visit a local sexually transmitted disease (STD) clinic, a hospital or your doctor. Either bring your sex partners with you when you are treated or notify them immediately so they can obtain examination and treatment.

Chickenpox (varicella zoster)

What is chickenpox?

Chickenpox is a highly communicable disease caused by the varicella virus, a member of the herpes virus family. In temperate climates, chickenpox occurs most frequently in winter and early spring.

Who gets chickenpox?

Chickenpox is common in the United States. Virtually everyone who is not vaccinated acquires chickenpox by adulthood. Cases are expected to decline as vaccine coverage levels increase.

How is chickenpox spread?

Chickenpox is transmitted to others by direct person-to-person contact, by droplet or airborne spread of discharges from an infected person's nose and throat or indirectly by contact with articles freshly soiled by discharges from the infected person's lesions. The scabs themselves are not considered infectious.

What are the symptoms of chickenpox?

Initial symptoms include sudden onset of slight fever and feeling tired and weak. These are soon followed by an itchy blister-like rash. The blisters eventually dry, crust over and form scabs. The blisters tend to be more common on covered than on exposed parts of the body. They may appear on the scalp, armpits, trunk and even on the eyelids and in the mouth. Mild or unapparent infections occasionally occur in children. The disease is usually more serious in adults than in children.

How soon do symptoms appear?

Symptoms commonly appear 14-16 days (range of 10-21 days) after exposure to someone with chickenpox or herpes zoster (shingles).

When and for how long is a person able to spread chickenpox?

A person is most able to transmit chickenpox from one to two days before the onset of rash until all lesions have crusted. People who are immunocompromised may be contagious for a longer period of time.

Does past infection with chickenpox make a person immune?

Chickenpox generally results in lifelong immunity. However, this infection may remain hidden and recur years later as shingles in a proportion of older adults and sometimes in children.

What are the complications associated with chickenpox?

Newborn children (less than one month old) whose mothers are not immune and patients with leukemia may suffer severe, prolonged or fatal chickenpox. Immunocompromised patients, including those on immunosuppressive drugs, may have an increased risk of developing a severe form of chickenpox or shingles. Reye's Syndrome has been a potentially serious complication associated with clinical chickenpox involving those children who have been treated with aspirin. Aspirin or aspirin-containing products should never be given to a child with chickenpox.

Is there a vaccine for chickenpox?

A vaccine to protect children against chickenpox was first licensed in March 1995. It has been recommended for persons over 12 months of age. To protect high-risk newborns and immunocompromised patients from exposure, a shot of varicella zoster immune globulin (VZIG) is effective in modifying or preventing disease if given within 96 hours after exposure to a case of chickenpox. Older children and adults who have previously had chickenpox do not need to be vaccinated. Contact your doctor or local health department for further information about the chickenpox vaccine.

What can a person or community do to prevent the spread of chickenpox?

The best method to prevent further spread of chickenpox is for people infected with the disease to remain home and avoid exposing others who are susceptible. If they develop symptoms, they should remain home until one week after the skin eruption began or until the lesions become dry and crusted. Pay particular attention to avoiding unnecessary exposure of nonimmune newborns and immunocompromised people to chickenpox.

Is there a treatment for chickenpox?

In 1992, acyclovir was approved by the U. S. Food and Drug Administration for treatment of chickenpox in healthy children. However, because chickenpox tends to be mild in healthy children, most physicians do not believe that it is necessary to prescribe acyclovir.

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Cholera

What is cholera?

Cholera is a bacterial disease that affects the intestinal tract. It is caused by a germ called *Vibrio cholerae*. Although only a few cases are recognized in the United States each year, epidemic levels of cholera have recently been reported in parts of Central and South America.

Who gets cholera?

While cholera is a rare disease in the U. S., those who may be at risk include people traveling to foreign countries where outbreaks are occurring and people who consume raw or undercooked seafood from warm coastal waters subject to sewage contamination. In both instances, the risk is small.

How is the germ spread?

The cholera germ is passed in the stools. It is spread by eating or drinking food or water contaminated by the fecal waste of an infected person. This occurs more often in underdeveloped countries lacking adequate water supplies and proper sewage disposal.

What are the symptoms of cholera?

People exposed to cholera may experience mild to severe diarrhea, vomiting and dehydration. Fever is usually absent.

How soon do symptoms appear?

The symptoms may appear from a few hours to five days after exposure.

What is the treatment for cholera?

Because of the rapid dehydration that may result from severe diarrhea, replacement of fluids by mouth or by the intravenous route is critical. Antibiotics, such as tetracycline, are also used to shorten the duration of diarrhea and shedding of the germs in the feces.

Is there a vaccine for cholera?

A vaccine is available and is sometimes recommended for travelers to certain foreign countries where cholera is occurring. However, the vaccine offers only partial protection (50 percent) for a short duration (two to six months). Some physicians believe that foreign travelers almost never contract cholera and that use of the current vaccine cannot be justified.

How can cholera be prevented?

The single most important preventive measure is to avoid consuming uncooked foods or water in foreign countries where cholera occurs unless they are known to be safe or have been properly treated.

Revised: May 2004

Cryptosporidiosis (crip-toe-spor-id-i-ho-sis)

What is cryptosporidiosis?

Cryptosporidiosis is an intestinal illness caused by a microscopic parasite called *Cryptosporidium*. Approximately 400-500 cases are reported in New York state each year.

Is cryptosporidiosis a new disease?

Although *Cryptosporidium* is not new, it was not recognized as a cause of human disease until 1976. Cryptosporidiosis was added to the list of reportable diseases in New York state in February 1994.

What are the symptoms of cryptosporidiosis?

The most common symptom is diarrhea, which is usually watery. It is often accompanied by abdominal cramping. Nausea, vomiting, fever, headache and loss of appetite may also occur. Some people infected with *Cryptosporidium* may not become ill.

Who is susceptible to cryptosporidiosis and how long does the illness last?

All people are presumed susceptible to infection with *Cryptosporidium*. In healthy individuals with normal immune systems, signs and symptoms generally persist for two weeks or less. However, immunocompromised persons (those with weak immune systems) may have severe and long lasting illness. Some examples of immunocompromised people are those receiving cancer chemotherapy, kidney dialysis or steroid therapy, people with HIV/AIDS and patients with Crohn's disease.

How long after exposure do symptoms appear?

The incubation period may range from one to 12 days with an average of seven days.

How is the disease contracted?

Cryptosporidium is shed in the feces of infected humans and animals. People become infected by ingesting the organism. *Cryptosporidium* can be spread by person-to-person or animal-to-person contact and by drinking contaminated water. Infected individuals can shed the organism in their stool for several weeks after they recover from the illness. Because cryptosporidiosis is transmitted by the fecal-oral route, the greatest potential to transmit the organism comes from infected people who have diarrhea, people with poor personal hygiene and diapered children.

Does past infection with *Cryptosporidium* make a person immune?

Some immunity appears to follow infection but the degree to which a previously infected person is immune to subsequent *Cryptosporidium* infection is unclear. Exposure to a large dose of the parasite could result in recurrent illness.

How is cryptosporidiosis diagnosed?

The infection is diagnosed by identifying the parasite during a microscopic examination of the stool. When a person with diarrheal illness is suspected of having cryptosporidiosis, the health practitioner should specifically request a *Cryptosporidium* test, since most laboratories do not yet routinely perform the necessary tests needed to identify this particular microscopic parasite. A *Cryptosporidium* test should specifically be ordered for people with HIV/AIDS or other immunocompromised patients (for example, cancer or transplant patients) who are being treated for diarrhea.

How is cryptosporidiosis treated?

There is no specific treatment for cryptosporidiosis. However, some patients may respond to certain antibiotics. Oral liquids or intravenous fluids are sometimes necessary if dehydration occurs. Anti-diarrheal drugs which reduce the motion of the intestines may provide some temporary improvement. Patients with cryptosporidiosis should obtain nutritional counseling through their health care provider to discuss their diet and how best to minimize the symptoms of their diarrhea.

How can I avoid getting and transmitting cryptosporidiosis?

You can minimize the chances of acquiring and spreading the infection by thoroughly washing your hands after using the toilet, changing diapers or coming into contact with fecal material in any way. Because cattle are a common source of *Cryptosporidium*, do not drink raw milk and be sure to wash your hands thoroughly after contact with cattle or other farm animals. Avoid drinking untreated and inadequately filtered surface water when camping or when traveling in developing countries. Comply with any water advisory issued by local and state authorities.

Has *Cryptosporidium* been found in New York state water systems and is it easily detectable?

It is believed that *Cryptosporidium* has always been present to some degree in water. Recently, it has been found in low numbers in some drinking waters derived from surface water sources (streams, lakes or reservoirs) in New York state and across the nation. No waterborne outbreaks of cryptosporidiosis have been identified in New York state. Only laboratories with specialized testing capabilities can detect the presence of *Cryptosporidium* cysts in water. Laboratory tests are not very reliable at this time and they cannot tell whether the cyst is alive or dead.

Should immunocompromised persons take extra precautions to minimize their risk of cryptosporidiosis?

Because cryptosporidiosis can be a severe disease in immunocompromised persons, such individuals should discuss the need for extra precautions with their health care provider to minimize their risk of infection. Contaminated drinking water is only one of a number of ways in which cryptosporidiosis can be acquired. Here are some suggested steps to reduce risk of infection:

- Wash hands thoroughly after changing diapers or whenever fecal soiling occurs.
- Avoid sexual practices that may result in hand or mouth exposure to feces, such as oral/anal contact (rimming).
- Avoid direct exposure to cattle and other farm animals. If exposure cannot be avoided, wash your hands thoroughly immediately thereafter.
- Avoid swallowing water when swimming, especially in lakes, ponds or rivers.
- Thoroughly wash all fruits and vegetables. Avoid drinking unpasteurized apple cider.

If an outbreak of waterborne *Cryptosporidium* is identified (none has been to date in New York), immunocompromised patients should carefully and consistently comply with all public advisories and notices issued by the local or state health department.

The four items listed below may help immunocompromised patients and their health care providers decide whether to take extra routine precautions with drinking water under normal, nonoutbreak conditions:

- Boiling water for at least one minute with a rolling boil will kill *Cryptosporidium*.
- Properly drilled and maintained wells that utilize underground water are generally protected from surface contamination and are unlikely to contain *Cryptosporidium* cysts.
- Unless it is distilled or pasteurized, bottled water may not be any safer than tap water. Those bottling companies using properly designed and operated groundwater sources have a very low likelihood of producing water containing *Cryptosporidium* cysts. Those companies using surface water sources have the same risk of cryptosporidiosis as tap water from the same source unless additional treatment is undertaken. Current standards for bottled water do not guarantee that the water is *Cryptosporidium*-free. Bottled water sold in New York must also include on the label whether the water comes from a well, spring or municipal source. A list of bottled waters certified for sale in New York along with their sources can be obtained from the New York State Department of Health at (518) 402-7676.
- During an outbreak of cryptosporidiosis in Milwaukee in 1993, one study showed that less diarrhea occurred in houses using water filters with a pore size less than two microns than in houses using filters with large pore sizes. If home water filters are used, follow the manufacturer's instructions supplied with the unit. The instructions will provide information on filter maintenance needed to prevent clogging and ensure proper filtration. Filters should be certified by the National Sanitation Foundation (NSF) or an equivalent testing agency for cyst removal.

For additional information, contact your health care provider or your local or state health department.

Cyclospora Infection (Cyclosporiasis)

What is Cyclospora?

Cyclospora is a microscopic parasite that can affect the intestinal tract and cause diarrhea. It is an uncommon disease in the United States and is occasionally associated with foreign travel.

Who gets Cyclospora?

Cyclospora infections can occur in people of all ages.

How is Cyclospora spread?

Cyclospora is spread by eating or drinking contaminated food or water. Person-to-person spread is unlikely. Outbreaks in the United States have been associated with imported raspberries and with other fresh produce. Although the route of transmission is unclear, animals may play some role in transmission.

What are the symptoms of Cyclospora?

Watery diarrhea is the most common symptom. It may last a few days to a month or longer. Symptoms may subside and then relapse. Other symptoms may include loss of appetite, weight loss, muscle aches, nausea, vomiting and fatigue.

How soon after exposure do symptoms appear?

The incubation period is approximately one week after consuming contaminated food or water.

How is it diagnosed?

A stool test performed at a laboratory is needed to make the diagnosis. The immature stage of the Cyclospora parasite (oocyst) can be identified using specialized laboratory methods. Routine stool tests may fail to detect this parasite so health care providers must specifically request the laboratory test for Cyclospora when this infection is suspected in a patient.

How is it treated?

The recommended treatment involves a combination antibiotic called trimethoprim-sulfamethoxazole, also known as Bactrim or Septra.

What can be done to minimize the spread of Cyclospora?

Avoid water or food that may be contaminated with stool or feces. Thoroughly wash fruits and vegetables.

Revised: May 2004

Cytomegalovirus

What is Cytomegalovirus (CMV)?

CMV is a common virus that infects most people at some time during their lives but rarely causes obvious illness. It is a member of the herpes virus family. Other members of the herpes virus family cause chickenpox, infectious mononucleosis, fever blisters (herpes I) and genital herpes (herpes II). Like other herpes viruses, CMV infection can become dormant for awhile and may reactivate at a later time. The virus is carried by people and is not associated with food, water or animals.

Who gets CMV?

Anyone can become infected with CMV. Almost all people have been exposed to CMV by the time they reach adulthood.

How is CMV spread?

Although the virus is not highly communicable, it can be spread from person to person by direct contact. The virus is shed in the urine, saliva, semen and, to a lesser extent, in other body fluids. Transmission can also occur from an infected mother to her fetus or newborn and by blood transfusion and organ transplants.

What are the symptoms of CMV infection?

Most children and adults who are infected with CMV do not develop symptoms. Those who develop symptoms may experience an illness resembling infectious mononucleosis and have fever, swollen glands and feel tired. People with a compromised immune system (such as AIDS patients or those receiving chemotherapy) may experience more serious illness involving fever, pneumonia and other symptoms.

Is CMV infection very serious in infants?

Approximately 10 out of every 1,000 babies born in the United States will have CMV infection but nine of these will have no symptoms and one may have significant illness involving nervous system damage or developmental disabilities.

How soon after exposure do symptoms appear?

Although most people never develop symptoms after exposure, the incubation period appears to be between three and 12 weeks.

How long can an infected person carry CMV?

CMV remains in the body throughout a lifetime. Infected people may occasionally shed the virus in urine or saliva. Several studies have found that from three to 11 percent of normal adults and up to 50 percent of healthy children shed the virus in either urine or saliva. The virus rapidly dies once outside the body.

How is CMV diagnosed?

There are special laboratory tests to culture the virus but such testing is difficult, expensive and not widely available. Specific blood tests can be helpful to the physician in making a diagnosis or determining if a person has been exposed but the results are sometimes inaccurate.

What is the treatment for CMV infection?

In most cases, there is no treatment. An effective vaccine has not yet been developed.

Should an infected child be excluded from school or day care?

There is no reason to exclude children who have CMV.

What precautions should pregnant women take when performing patient care or child care?

Pregnant women should practice good hygiene and carefully wash their hands after caring for patients or children. This is particularly important when handling diapers or having contact with the child's urine or saliva.

The risk of CMV infection in hospital workers is not greater than it is in others in the community and is probably low because of careful hand washing practices. In daycare centers, where hand washing practices may not be as good, there may be a greater risk of infection. In both settings, good hygiene and careful hand washing are the most important control measures. Pregnant women working in child care facilities should minimize direct exposure to saliva and avoid kissing babies or young children on the mouth. Hugging is fine and is not a risk factor.

Routine blood testing during pregnancy for CMV antibody is not generally recommended. Pregnant women should consult their physician on an individual basis regarding this issue.

What can be done to prevent the spread of CMV?

Good hand washing is the best preventive measure. Plastic disposable gloves should be worn when handling linen or underclothes soiled with feces or urine.

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Dengue Fever (breakbone fever, dengue hemorrhagic fever)

What is dengue fever?

Dengue fever is a mosquito-borne disease caused by a virus. The disease is mainly tropical in origin but occasionally residents or visitors from other countries may arrive in this country with dengue fever. Although cases originating in the United States are virtually unknown, epidemic levels have recently been reported in parts of the Caribbean and Central America.

Who gets dengue fever?

Dengue fever may occur in people of all ages who are exposed to infected mosquitoes. The disease occurs mainly in tropical Asia and the Caribbean, usually during the rainy seasons in areas with high numbers of infected mosquitoes.

How is dengue fever spread?

Dengue fever is spread by the bite of infected *Aedes* mosquitoes.

What are the symptoms of dengue fever?

Dengue fever is characterized by the rapid development of a fever that may last from five to seven days with intense headache, joint and muscle pain and a rash. The rash develops on the feet or legs three to four days after the beginning of the fever. The hemorrhagic form of dengue fever is more severe and associated with loss of appetite, vomiting, high fever, headache and abdominal pain. Shock and circulatory failure may occur. Untreated hemorrhagic dengue results in death in up to 50 percent of cases.

How soon do symptoms appear?

Dengue fever may occur from three to 14 days after exposure to an infected mosquito, commonly within four to seven days.

Does past infection with dengue virus make a person immune?

Infection with one of the four strains of dengue virus usually produces immunity to that strain but does not provide protection against the other strains.

What is the treatment for dengue fever?

There is no specific treatment available. Intravenous fluids and oxygen therapy are often used for patients who experience shock during their illness.

What can be done to prevent the spread of dengue fever?

Since cases of dengue appearing in New York are imported, control measures are limited to advising travelers to affected areas to minimize exposure to infected mosquitoes. Use of mosquito netting and repellents may be helpful in minimizing exposure.

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Diphtheria

What is diphtheria?

Diphtheria is an acute bacterial disease that usually affects the tonsils, throat, nose or skin. It is extremely rare in the United States.

Who gets diphtheria?

Diphtheria is most common where people live in crowded conditions. Unimmunized children under 15 years of age are likely to contract diphtheria. The disease is often found among adults whose immunization was neglected, and is most severe in unimmunized or inadequately immunized individuals.

How is diphtheria spread?

Diphtheria is transmitted to others through close contact with discharge from an infected person's nose, throat, skin, eyes and lesions.

What are the symptoms of diphtheria?

There are two types of diphtheria. One type involves the nose and throat, and the other involves the skin. Symptoms include sore throat, low-grade fever and enlarged lymph nodes located in the neck. Skin lesions may be painful, swollen and reddened.

How soon do symptoms appear?

Symptoms usually appear two to four days after infection, with a range of one to 10 days.

When and for how long is a person able to spread diphtheria?

People who are infected with the diphtheria germ may be contagious for up to two weeks, but seldom more than four weeks. If the patient is treated with appropriate antibiotics, the contagious period can be limited to less than four days.

Does past infection with diphtheria make a person immune?

Recovery from diphtheria is not always followed by lasting immunity.

Is there a vaccine for diphtheria?

Diphtheria vaccine is usually combined with tetanus vaccine and acellular pertussis vaccine to form a triple vaccine known as DTaP. This vaccine should be given at two, four, six and 15-18 months of age, and between four and six years of age. A combination of tetanus vaccine and diphtheria vaccine (Td) should be given every 10 years to maintain immunity.

How can diphtheria be prevented?

The single most effective control measure is maintaining the highest possible level of immunization in the community. Other methods of control include prompt treatment of cases and a community surveillance program.

What is the treatment for diphtheria?

Certain antibiotics, such as penicillin and erythromycin, can be prescribed for the treatment of diphtheria. A diphtheria antitoxin is also used for treatment.

What can be the effect of not being treated for diphtheria?

If diphtheria goes untreated, serious complications such as paralysis, heart failure and blood disorders may occur. Death occurs in approximately five to 10 percent of all cases.

Ehrlichiosis

What is ehrlichiosis?

Ehrlichiosis is a tick-borne disease that can be caused by either of two different organisms. Human Monocytic Ehrlichiosis (HME) is caused by *Ehrlichia chaffeensis*, which is transmitted by the lone star tick (*Amblyomma americanum*). Human Granulocytic Ehrlichiosis (HGE) is caused by *Anaplasma phagocytophilia*, also called anaplasmosis, transmitted by the deer tick (*Ixodes scapularis*). In New York state, most cases of ehrlichiosis have been reported on Long Island and in the lower Hudson Valley.

Who gets ehrlichiosis?

Anyone can get ehrlichiosis, although the majority of known cases have been in adults. People who spend time outdoors in tick-infested areas from April until October are at greatest risk for exposure.

How is ehrlichiosis transmitted?

Ehrlichiosis is transmitted by the bite of infected ticks, including the deer tick and the lone star tick. Ehrlichiosis cannot be spread from person to person.

What are the symptoms of ehrlichiosis?

The symptoms of HME and HGE are the same and usually include fever, muscle aches, weakness and headache. Patients may also experience confusion, nausea, vomiting and joint pain. Unlike Lyme disease or Rocky Mountain spotted fever, a rash is not common. Infection usually produces mild to moderately severe illness, with high fever and headache, but may occasionally be life-threatening or even fatal.

When do symptoms appear?

Symptoms appear one to three weeks after the bite of an infected tick. However, not every exposure results in infection.

What is the treatment for ehrlichiosis?

Tetracycline antibiotics are usually rapidly effective for ehrlichiosis. Because these antibiotics can cause dental staining in children, physicians should consult an infectious disease expert when treating children.

What can be done to prevent ehrlichiosis?

When in tick-infested habitat - wooded and grassy areas - take special precautions to prevent tick bites, such as wearing light-colored clothing (for easy tick discovery) and tucking pants into socks and shirt into pants. Check after every two to three hours of outdoor activity for ticks on clothing or skin. Brush off any ticks on clothing before skin attachment occurs. A thorough check of body surfaces for attached ticks should be done at the end of the day. If removal of attached ticks occurs within 36 hours, the risk of tick-borne infection is minimal.

Repellents can be effective at reducing bites from ticks that can transmit disease. But their use is not without risk of health effects, especially if repellents are applied in large amounts or improperly.

Repellents commonly available to consumers contain the active ingredients DEET (N, N-diethyl-m-toluamide), permethrin, or botanical oils. DEET products have been widely used for many years, but have occasionally been associated with health effects. Skin reactions (particularly at DEET concentrations of 50 percent and above) and eye irritation are the most frequently reported health problems. Products containing permethrin are for use on clothing only, not on skin. Rather than acting as a repellent, permethrin kills ticks and insects that come in contact with treated clothes. Permethrin can cause eye irritation. Insect repellents containing botanical oils, such as oil of geranium, cedar, lemongrass, soy or citronella are also available, but there is limited information on their effectiveness and toxicity. **If you decide to use a repellent, use only what and how much you need for your situation.**

In addition:

- Be sure to follow label directions.
- Use repellents only in small amounts, avoiding unnecessary repeat application. Try to reduce the use of repellents by dressing in long sleeves and pants tucked into socks or boots.
- Children may be at greater risk for reactions to repellents, in part, because their exposure may be greater. Do not apply repellents directly to children. Apply to your own hands and then put it on the child.
- Do not apply near eyes, nose or mouth and use sparingly around ears. Do not apply to the hands of small children.
- After returning indoors, wash treated skin with soap and water.

How should a tick be removed?

Grasp the mouthparts with tweezers as close as possible to the attachment (skin) site. Be careful not to squeeze, crush or puncture the body of the tick, which may contain infectious fluids. After removing the tick, thoroughly disinfect the bite site and wash hands. See or call a doctor if there are concerns about incomplete tick removal. Do not attempt to remove ticks by using petroleum jelly, lit cigarettes or other home remedies because these may actually increase the chance of contracting a tick-borne disease.

How do I obtain information on a tick?

Tick identification services are available through the New York State Department of Health and some county health departments. The New York State Department of Health Tick Identification Service will tell you the species of the tick, whether it is engorged with blood and, if so, how long it may have been feeding. The Tick Identification Service will also report whether the mouthparts are present (if not, they may have remained in the skin and need to be removed, as you would a splinter). The Tick Identification Service **will not** tell you whether the tick is infected with disease-causing organisms. There is no charge for this service.

If you wish to have a tick identified, place it in a small jar containing rubbing alcohol, seal the container to prevent leakage and complete the Tick Identification Submittal Form. Mail the tick in the sealed container, along with the completed submittal form, to the New York State Health Department's Tick Identification Service, c/o HVCC Central Receiving, 80 Vandenburg Avenue, Troy, NY 12180. Once you send a tick to be identified it will not be returned.

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E. coli O157:H7

What is Escherichia coli (E. coli) O157:H7 infection?

E. coli are bacteria that normally live in the intestines of humans and animals. Although most strains of this bacteria are harmless, several are known to produce toxins that can cause diarrhea. One particular E. coli strain called O157:H7 can cause severe diarrhea and kidney damage.

Who gets E. coli O157:H7 infection?

Anyone of any age can become infected with E. coli O157:H7, but children are more likely to develop serious complications.

How does one get infected with E. coli O157:H7?

The bacteria are acquired by eating food containing the bacteria. The bacteria live in the intestines of some healthy cattle and contamination of the meat may occur in the slaughtering process. Eating meat that is rare or inadequately cooked is the most common way of getting the infection. Person-to-person transmission can occur if infected people do not wash their hands after using the toilet.

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

People infected by E. coli O157:H7 can develop a range of symptoms. Some infected people may have mild diarrhea or no symptoms at all. Most identified cases develop severe diarrhea and abdominal cramps. Blood is often seen in the stool. Usually little or no fever is present.

How soon after exposure do symptoms appear?

The symptoms usually appear about three days after exposure, with a range of one to nine days.

How is infection with E. coli O157:H7 diagnosed?

Infection with E. coli O157:H7 can only be diagnosed by a special stool culture that is not performed in many laboratories. Public health authorities have advised doctors and laboratories to consider performing a special stool culture test for E. coli O157:H7 particularly in people with bloody diarrhea.

What is the treatment for infection with E. coli O157:H7?

Most people recover without specific treatment in five to 10 days. Antibiotics should not be used for the treatment of E. coli O157:H7 infection. Studies have shown that an increase in complications has been associated with the use of antibiotics in the treatment of this particular infection.

What complications can result from infection with E. coli O157:H7?

In some people, particularly children under five years of age, the infection can cause a complication called hemolytic uremic syndrome (HUS). This is a serious disease in which red blood cells are destroyed and the kidneys fail. Transfusions of blood or blood clotting factors as well as kidney dialysis may be necessary. A prolonged hospital stay is often required. Fortunately, most people with HUS recover completely, but it can be fatal.

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

Do not eat undercooked hamburger or other ground beef products. Cook all ground beef and hamburger thoroughly. Make sure the cooked meat is brown throughout (not pink) and the juices run clear. Drink only pasteurized milk and milk products. Make sure infected people, especially children, wash their hands carefully with soap after using the toilet to reduce the risk of spreading the disease.

Fifth Disease (erythema infectiosum, parvovirus B19 infections)

What is fifth disease?

Fifth disease is a viral infection which often affects red blood cells. It is caused by a human parvovirus (B19). For many years, fifth disease was viewed as an unimportant rash illness of children. Recently, studies have shown that the virus may be responsible for serious complications in certain individuals.

Who gets fifth disease?

Anyone can be infected, but the disease seems to occur more often in elementary school-age children.

How is the virus spread?

The virus is spread by exposure to airborne droplets from the nose and throat of infected people.

What are the symptoms and when do they appear?

One to two weeks after exposure, some children will experience a low grade fever and tiredness. By the third week, a red rash generally appears on the cheeks giving a slapped face appearance. The rash may then extend to the body and tends to fade and reappear. Sometimes, the rash is lacy in appearance and may be itchy. Some children may have vague signs of illness or no symptoms at all.

When and for how long is a person able to spread the disease?

People with fifth disease appear to be contagious during the week prior to the appearance of the rash. By the time the rash is evident, the person is probably beyond the contagious period. People who are immunosuppressed or who have certain anemias may be contagious for a longer period.

How is fifth disease diagnosed?

In most cases, the disease is diagnosed based on the appearance of typical symptoms. A specific blood test to confirm the diagnosis has recently become available but is not necessary in healthy children.

Does past infection with the virus make a person immune?

It is thought that people who have been previously infected acquire long-term or lifelong immunity. Studies have shown that more than 50 percent of adults are immune to parvovirus B19.

What is the treatment?

At this time, there is no specific treatment.

What are the complications associated with fifth disease?

While there is no evidence that parvovirus B19 infection is a significant cause of fetal defects, some studies have shown that infection may increase risk of miscarriage or spontaneous abortion. In people with chronic red blood cell disorders, such as sickle-cell disease, infection may result in severe anemia. Infection has also been associated with arthritis in adults.

What can be done to prevent the spread of fifth disease?

Measures to effectively control fifth disease have not been developed yet. During outbreaks in schools, pregnant school employees and people with chronic red blood cell disorders should consult their physician and the local or state health department for advice.

What should I do if I am exposed to a child with fifth disease during my pregnancy?

If you are exposed to a case or develop symptoms of fifth disease while pregnant, you should consult your doctor. Blood testing is available at some private laboratories and at the New York State Health Department laboratory to determine if you are already immune or infected with parvovirus B19.

Where can I call for additional information regarding fifth disease and pregnancy?

In addition to your doctor, information can be obtained from your local health department or the New York State Department of Health Growing Up Healthy Hotline at (800) 522-5006.

Giardiasis (beaver fever)

What is giardiasis?

Giardiasis is an intestinal illness caused by a microscopic parasite called *Giardia lamblia*. It is a fairly common cause of diarrheal illness and it is estimated that several thousand cases occur in upstate New York each year. Cases may occur sporadically or in clusters or outbreaks.

Who gets giardiasis?

Anyone can get giardiasis but it tends to occur more often in people in institutional settings, people in daycare centers, foreign travelers and individuals who consume improperly treated surface water. Men who have sex with men may also be at increased risk of contracting giardiasis.

How is this parasite spread?

The giardia parasite is passed in the feces of an infected person or animal and may contaminate water or food. Person-to-person transmission may also occur in daycare centers or other settings where hand washing practices are poor.

What are the symptoms of giardiasis?

People exposed to giardia may experience mild or severe diarrhea, or in some instances, no symptoms at all. Fever is rarely present. Occasionally, some will have chronic diarrhea over several weeks or months, with significant weight loss.

How soon do symptoms appear?

The symptoms may appear from three to 25 days after exposure but usually within 10 days.

For how long can an infected person carry giardia?

The carrier stage generally lasts from a few weeks to a few months. Treatment with specific antibiotics may shorten the carrier stage.

Where are the giardia parasites found?

Giardia has been found in infected people (with or without symptoms) and wild and domestic animals. The beaver has gained attention as a potential source of giardia contamination of lakes, reservoirs and streams, but human fecal wastes are probably as important.

What is the treatment for giardiasis?

Antibiotics such as albendazole, metronidazole or furizolidone are often prescribed by doctors to treat giardiasis. However, some individuals may recover on their own without medication.

Should an infected person be excluded from work or school?

People with active diarrhea who are unable to control their bowel habits (infants and young children for example) may need to be excluded from settings such as daycare or group activities where they may present a risk to others. After they have been treated and have recovered, they may be permitted to return. In addition, some local health departments may require follow-up stool testing to confirm that the person is no longer contagious. Individuals who are not in high-risk settings may return to their routine activities when they have recovered, provided that they carefully wash their hands after each toilet visit.

What can a person or community do to prevent the spread of giardiasis?

Three important preventive measures are:

- Carefully wash hands thoroughly after toilet visits.
- Carefully dispose of sewage wastes so as not to contaminate surface water or groundwater.
- Avoid consuming untreated water from springs, streams or lakes.

Gonorrhea Gonococcal Infection (clap, drip)

What is gonorrhea?

Gonorrhea is an infection that is spread through sexual contact with another person. The gonorrhea germs are found in the mucous areas of the body (the vagina, penis, throat and rectum).

Who gets gonorrhea?

Any sexually active person can be infected with gonorrhea. Most often, gonorrhea is found in younger people (ages 15-30) who have multiple sex partners. Gonorrhea is reported more frequently from urban areas than from rural areas.

How is gonorrhea spread?

Gonorrhea is spread through sexual contact. This includes penis to vagina, penis to mouth, penis to rectum and mouth to vagina contact. Gonorrhea can also be spread from mother to child during birth.

What are the symptoms of gonorrhea?

Men infected with gonorrhea will have burning while urinating and a yellowish white discharge from the penis. Those few women with symptoms will have a discharge from the vagina and possibly some burning while urinating. Infections in the throat and rectum cause few symptoms.

How soon do symptoms appear?

In males, symptoms usually appear two to seven days after infection but it can take as long as 30 days for symptoms to begin. Often, there are no symptoms for people infected with gonorrhea; 10 to 15 percent of men and about 80 percent of women may have no symptoms. People with no symptoms are at risk for developing complications to gonorrhea. These people also spread this infection unknowingly.

When and for how long is a person able to spread gonorrhea?

From the time a person is infected with gonorrhea, he or she can spread the disease. A person can continue to spread the infection until properly treated.

Does past infection with gonorrhea make a person immune?

Past infection does not make a person immune to gonorrhea. Previous infections with gonorrhea may allow complications to occur more rapidly.

What is the treatment for gonorrhea?

Gonorrhea is treated with cephalosporin or quinalone type of antibiotics. All strains of gonorrhea are curable but some strains are becoming more and more resistant to many standard medications.

What happens if gonorrhea goes untreated?

If a person is not treated for gonorrhea, there is a good chance complications will occur. Women frequently suffer from pelvic inflammatory disease (PID), a painful condition that occurs when the infection spreads throughout the reproductive organs. PID can lead to sterilization in females. Men may suffer from swelling of the testicles and penis. Both sexes may suffer from arthritis, skin problems and other organ infections caused by the spread of gonorrhea within the body.

What can be done to prevent the spread of gonorrhea?

Sexual relations should be approached responsibly.

- Limit the number of your sex partners.
- Use a male or female condom.
- If you think you are infected, avoid any sexual contact and visit a local sexually transmitted disease (STD) clinic, hospital or your doctor.
- Notify all sexual contacts immediately so that they can be examined and treated by a health care provider.

Granuloma Inguinale

What is granuloma inguinale?

Granuloma inguinale is a chronic bacterial infection of the genital region, generally regarded to be sexually transmitted.

Who gets granuloma inguinale?

Granuloma inguinale is a relatively rare disease occurring in people living in tropical and subtropical areas. It occurs more frequently in males. In the United States, while homosexuals are at greater risk, it is relatively rare in heterosexual partners of those infected.

How is granuloma inguinale spread?

Granuloma inguinale is thought to be spread by sexual contact with an infected individual.

What are the symptoms of granuloma inguinale?

The disease begins with the appearance of lumps or blisters in the genital area. The blister becomes a slowly enlarging open sore.

How soon do symptoms appear?

The incubation period appears to be between eight and 80 days after infection.

When and for how long is a person able to spread granuloma inguinale?

Granuloma inguinale is communicable as long as the infected person remains untreated and bacteria from lesions are present.

Does past infection with granuloma inguinale make a person immune?

Past infection does not make a person immune. Susceptibility is variable. There is no evidence of natural resistance.

What is the treatment for granuloma inguinale?

There are several antibiotics that will effectively cure granuloma inguinale. Response to the antibiotic should be evident within seven days and total healing usually occurs within three to five weeks.

What complications can result from granuloma inguinale?

If left untreated, granuloma inguinale can result in extensive destruction of genital organs and may also spread to other parts of the body.

How can the spread of granuloma inguinale be prevented?

- Limit the number of your sex partners.
- Use a condom.
- Carefully wash the genitals after sexual relations.
- If you think you are infected, avoid any sexual contact and visit your local sexually transmitted disease (STD) clinic, a hospital or your doctor.
- Notify all sexual contacts immediately so they can obtain medical care.

Revised: May 2004

Haemophilus Influenzae Type B Disease (Hib, Haemophilus b)

What is Haemophilus influenzae type b (Hib) disease?

Until recently, Hib was one of the most important causes of bacterial infection in young children. Hib may cause a variety of diseases such as meningitis (inflammation of the coverings of the spinal column and brain), blood stream infections, pneumonia, arthritis and infections of other parts of the body.

Who gets Hib disease?

Hib disease can occur in any age group. Due to widespread use of Hib vaccine in children, very few cases of Hib are reported each year in New York state. Hib is diagnosed more often in the elderly, unimmunized children and people who are immunocompromised.

How is Hib disease spread?

Hib disease may be transmitted through contact with mucus or droplets from the nose and throat of an infected person.

What are the symptoms of Hib disease?

Symptoms may include fever, lethargy, vomiting and a stiff neck. Other symptoms depend upon the part of the body affected.

How soon do symptoms appear?

The incubation period for Hib disease is unknown, but is probably less than one week.

When and for how long is a person able to spread Hib disease?

The contagious period varies. Unless treated, it may be transmitted for as long as the organism is present in the nose and throat, even after symptoms have disappeared.

Does past infection with Hib disease make a person immune?

Children who had Hib disease when younger than 24 months of age may be at risk of getting Hib disease again. Children and adults who had Hib disease when 24 months of age or older are likely to be immune.

What is the treatment for Hib disease?

Antibiotics such as cefotaxime, ceftriaxone or ampicillin with chloramphenicol are generally used to treat serious infections. Rifampin is used in some circumstances as preventive treatment for persons who have been exposed to Hib disease.

What are the possible complications associated with Hib disease?

If Hib meningitis occurs, a certain proportion of those who recover may suffer long-lasting neurologic problems. In some instances, cases may be fatal.

What can be done to prevent the spread of Hib disease?

There are currently several Hib vaccines licensed by the U. S. Food and Drug Administration for use in children as early as two months of age. Immunization authorities recommend that all children be immunized with an approved Hib vaccine beginning at two months of age. Recommendations for scheduling of subsequent doses vary depending on the manufacturer. Therefore, it is important to consult with your physician.

Hand, Foot and Mouth Disease (Coxsackie viral infection)

What is hand, foot and mouth disease?

Hand, foot and mouth disease is a viral infection caused by a strain of Coxsackie virus. It causes a blister-like rash that, as the name implies, involves the hands, feet and mouth. (Hand, foot and mouth disease is different than foot and mouth disease, which is an infection of cattle, pigs, sheep, goats and deer and is caused by a different virus.)

Who gets hand, foot and mouth disease?

Usually this occurs in children under 10 years old, but occasionally can occur in young adults.

How is it spread?

The virus is spread by direct contact with nose and throat discharges, blisters and feces of infected people.

What are the symptoms and when do they start?

Symptoms of fever, poor appetite, runny nose and sore throat can appear three to five days after exposure. A blister-like rash on the hands, feet and in the mouth usually develops one to two days after the initial symptoms.

When and how long can someone spread the disease?

A person is contagious when the first symptoms appear and may continue until the blister-like skin lesions disappear. The virus has been known to be shed in the stool for up to several weeks.

How is hand, foot and mouth disease diagnosed?

The diagnosis is generally suspected on the appearance of blister-like rash on hands and feet and mouth in a child with a mild febrile illness. Although specific viral tests are available to confirm the diagnosis, they are rarely performed due to expense and length of time needed to complete the tests.

Does a prior infection with Coxsackie virus make a person immune?

Specific immunity can occur, but a second episode is possible from a different strain of Coxsackie virus.

What is the treatment?

There is no specific treatment. Treatment is aimed at fever control and maintaining good oral hydration.

Can there be complications associated with hand, foot and mouth disease?

The illness is typically mild, complications are rare. More serious infections have been seen recently with a certain strain of Coxsackie viral infection in Indonesia.

What can be done to prevent the spread of this disease?

Children who feel ill or have a fever should be excluded from group settings until the fever is gone and the child feels well. Thorough hand washing and care with diaper changing practices is important as well.

Is there a risk for pregnant women?

There is debate as to any congenital disorders related to Coxsackie viral infections and pregnancy. Pregnant women should consult their obstetrician for further information.

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Hantavirus Infections (Hantavirus pulmonary syndrome)

What are Hantaviruses?

Hantaviruses are a type of virus found in rodents in different parts of the world. In the U.S., human Hantavirus infections were first identified in the southwest in 1993. In recent years, sporadic cases have been found in several eastern states including New York. Studies have shown that mice are often infected and appear to be the source of infection.

Is this illness common to humans?

No. Human Hantavirus infections are rare. Sporadic or isolated cases may occur throughout the country, with larger numbers in dusty areas conducive to virus transmission.

How is the virus transmitted?

The virus is carried by rodents such as mice which are found throughout North America. Infected rodents shed the live virus in saliva, droppings and urine. Humans are infected when they inhale microscopic particles that contain viruses from rodent urine or droppings. Insect bites and pets are not believed to play a role in Hantavirus transmission.

Can people infect each other?

There is no evidence of person-to-person transmission in the United States. No health care workers have been infected while caring for infected persons.

What are the symptoms?

Typical symptoms include high fever, muscle aches, cough and headache. After several days, respiratory problems worsen rapidly. The lungs may fill with fluid and victims may die of respiratory failure or shock.

How long does it take to develop symptoms after exposure?

Typically two to four weeks, but it may range from a few days up to two months.

Is there any treatment?

There is no specific treatment for Hantavirus. Physicians have been administering ribavirin, an antiviral drug, on an experimental basis to suspected victims.

Is the disease always fatal?

No. Early on, about half of those infected died, but rapid diagnosis and supportive treatment has improved survival.

What is the best way to prevent exposure to Hantavirus?

Avoid contact with rodent droppings or urine. To reduce exposure to Hantavirus around the home, prevent or eliminate rodent infestations. If rodents are in the home, consult an exterminator or your local health department for additional information on rodent removal and control. If snap traps are used to eliminate rodents, the traps should be set in an empty container, such as a milk carton lying on its side, or on newspaper to prevent contact with potentially infectious material. The used trap, box or newspaper and rodent should be thoroughly wet down with a household disinfectant solution (consisting of detergent and 1½ cups of bleach for each gallon of water) and then placed in double plastic bags for disposal. Wash hands with soap and water after completing the cleanup. After eliminating rodents from a building, you should then eliminate the conditions that attract them (improperly stored food sources, rubbish, etc.). Rodent-proof measures should be applied to prevent rodent entry.

What should be done to clean up after rodent droppings?

Dwellings with large amounts of rodent droppings should first be aired before re-occupying the building. It is important to keep rodent dropping particles from getting into the air where they can be inhaled. The debris should be thoroughly wet down with a household disinfectant solution (consisting of detergent plus 1½ cups of bleach for each gallon of water) to reduce airborne dust. An old spray bottle with a fine mist is ideal for applying the solution. Debris should then be wiped up while wearing gloves and placed in double plastic bags for disposal, together with any cleanup materials such as paper towels, etc. Do not use vacuum cleaners or sweep with brooms, which will create dust in the air. Use of gloves, dust mist masks, long-sleeved clothing and protective eyewear may help prevent personal exposure. Wash hands with soap and water after completing the cleanup.

Where can I get more information?

If you are seriously ill with a high fever, consult a doctor or local emergency room immediately. For general information, call your local or state health department.

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Hepatitis A (infectious hepatitis)

What is hepatitis A?

Hepatitis A is a highly contagious disease that attacks the liver. It is the most common type of hepatitis reported in the U.S.

Who gets hepatitis A?

Anyone can get hepatitis A, but certain persons are at increased risk of infection, including:

- Children and adults living in areas with increased rates of hepatitis (i.e., certain Western states in the U.S.)
- Persons traveling to countries where hepatitis A is common (i.e., Central and South America, Africa, the Middle East, Asia and the Western Pacific)
- Men who have sex with men
- Injecting and non-injecting drug users
- Sexual contacts of infected persons
- Household contacts of infected persons

How is the virus spread?

Hepatitis A virus is usually spread from person to person by putting something in the mouth that has been contaminated with the stool of a person with hepatitis A. This type of transmission is called the "fecal-oral" route. For this reason, the virus is more easily spread in areas where there are poor sanitary conditions or where good personal hygiene is not observed.

Most infections in the United States result from contact with a household member or sex partner who has hepatitis A. Hepatitis A virus may also be spread by consuming food or drink that has been handled by an infected person. Waterborne outbreaks are infrequent and are usually associated with sewage-contaminated or inadequately treated water. Casual contact, as in the usual office, factory or school setting, does not spread the virus.

What are the symptoms of hepatitis A?

The symptoms of hepatitis A may include an abrupt onset of fever, malaise, loss of appetite, nausea, stomach pain, dark-colored urine and jaundice (a yellowing of the skin and whites of the eyes). The disease is rarely fatal and most people recover in a few weeks without any complications. Adults have signs and symptoms of illness more often than children. Infants and young children tend to have very mild symptoms and are less likely to develop jaundice than are older children and adults. Not everyone who is infected will have all of the symptoms.

How soon do symptoms appear?

The symptoms commonly appear within 28 days of exposure, with a range of 15-50 days.

For how long is an infected person able to spread the virus?

The contagious period begins about a week or two before the symptoms appear and is minimal the week after the onset of jaundice.

Does past infection with hepatitis A make a person immune?

Once an individual recovers from hepatitis A, he or she cannot be re-infected. He or she is immune for life and does not continue to carry the virus.

What is the treatment for hepatitis A?

There are no special medicines or antibiotics that can be used to treat a person once the symptoms appear. Generally, bed rest is all that is needed.

How can hepatitis A be prevented?

For long-term protection, hepatitis A vaccine is best. To prevent person-to-person spread, careful hand washing, after using the bathroom, changing diapers and before preparing or eating food, is the single most important means of prevention. For close contacts of a person with hepatitis A virus infection, immune globulin shots are recommended to minimize the risk of disease.

Who should obtain the hepatitis A vaccine?

Hepatitis A vaccine is recommended for the following persons two years of age and older:

- Travelers to areas with increased rates of hepatitis A
- Men who have sex with men
- Injecting and non-injecting drug users
- Persons with clotting-factor disorders (i.e., hemophilia)
- Persons with chronic liver disease (including persons with chronic hepatitis B or chronic hepatitis C virus infection)
- Children living in areas with increased rates of hepatitis A

The hepatitis A vaccine may also be used in certain outbreak situations where ongoing transmission is occurring. Although studies of certain occupational groups (for example, food service workers, health care workers, child care workers, sewerage workers) have not shown an increased risk, such people may consider vaccination if they wish to further reduce their risk or are in communities where ongoing outbreaks are occurring. In a number of western states where rates of hepatitis A are generally higher than other portions of the United States, hepatitis A vaccine is recommended routinely for all children.

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Hepatitis A and Food Service Workers (infectious hepatitis)

What is hepatitis A?

Hepatitis A (formerly known as infectious hepatitis) is a liver disease caused by a specific virus. The disease is fairly common; more than 1,000 cases are reported in New York state each year.

Who gets hepatitis A?

Anyone can get hepatitis A, but it occurs more frequently in children, people traveling abroad and men who have sex with men.

How is the virus spread?

The hepatitis A virus enters through the mouth, multiplies in the liver and is passed in the feces. The virus can then be carried on an infected person's hands and can be spread by direct contact, or by consuming food or drink that has been handled by the individual. In some cases, it can be spread by consuming contaminated water.

What are the symptoms of hepatitis A?

The symptoms of hepatitis A may include fatigue, poor appetite, fever and vomiting. Urine may become darker in color, and then jaundice (a yellowing of the skin and whites of the eyes) may appear. The disease is rarely fatal and most people recover in a few weeks without any complications. Infants and young children tend to have very mild symptoms and are less likely to develop jaundice than are older children and adults. Not everyone who is infected will have all of the symptoms.

How soon do symptoms appear?

The symptoms may appear two to six weeks after exposure, but usually within three to four weeks.

For how long is an infected person able to spread the virus?

The contagious period begins about a week or two before the symptoms appear and extends up to the onset of jaundice.

Does past infection with hepatitis A make a person immune?

Once an individual recovers from hepatitis A, he or she is immune for life and does not continue to carry the virus.

What is the treatment for hepatitis A?

There are no special medicines or antibiotics that can be used to treat a person once the symptoms appear. Generally, bed rest is all that is needed.

How can hepatitis A be prevented?

To prevent person-to-person spread, careful hand washing after visiting the toilet is the single most important means of prevention. For close contacts of a case, immune globulin shots are recommended to minimize the risk of disease. For long-term protection, a new vaccine for hepatitis A is available.

Who should obtain the hepatitis A vaccine?

The U. S. Centers for Disease Control and Prevention (CDC) recommends hepatitis A vaccine for:

- travelers to countries with high rates of hepatitis A;
- people living in communities with high rates of hepatitis A;
- people in certain outbreak settings;
- laboratory personnel who work with hepatitis A virus;
- men who have sex with men;
- people with existing chronic liver disease; and
- injection drug users.

The hepatitis A vaccine may also be used in certain outbreak situations where ongoing transmission is occurring. Although studies of certain occupational groups (for example, food service workers, health care workers, child care workers, sewerage workers) have not shown an increased risk, such people may consider vaccination if they wish to further reduce their risk or are in communities where ongoing outbreaks are occurring.

Why isn't hepatitis A vaccine required for food service workers?

While food service employees can offer hepatitis A vaccine to their employees if they wish, most public health authorities prefer not to make it mandatory for the following reasons:

- There is no evidence that food service workers are at any greater risk of acquiring hepatitis A than are people in other occupations.
- Only one to two percent of all hepatitis A cases are acquired through restaurant food.
- Employee turnover in some segments of the food service industry is high, making it impractical to vaccinate staff.
- Emphasis on careful hand washing, use of disposable gloves and not working when ill are measures that can greatly minimize the risk of spreading hepatitis A and a number of other infections.
- Hepatitis A vaccine would be strongly recommended for food service workers in a county or region where a community-wide outbreak has been recognized.

What about the vaccine?

Currently, there are two hepatitis A vaccines on the market. Both vaccines are safe and highly effective. Two doses (six months apart) are required and the cost is approximately \$40 per dose. Ninety-nine to 100 percent of persons vaccinated with hepatitis A vaccine will develop long-lasting immunity.

Where can I obtain more information?

People interested in receiving the vaccine should contact their private health care providers or employer. For general information, please call your local health department. For information on food safety issues, call the New York State Department of Health, Bureau of Community Sanitation and Food Protection, at (518) 402-7610.

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Hepatitis B (serum hepatitis)

What is hepatitis B?

Hepatitis B is a liver disease caused by the hepatitis B virus (HBV). The virus can cause lifelong infection, cirrhosis (scarring) of the liver, liver cancer, liver failure and death.

Who gets hepatitis B?

One out of 20 people in the United States will get infected with HBV some time during their lives. Anyone can get hepatitis B, but you are at greater risk if you:

- have sex with someone infected with HBV
- have multiple sex partners
- are a man and have sex with men
- have ever been diagnosed with a sexually transmitted disease
- are an injection drug user
- live in the same house with someone who has lifelong (chronic) HBV infection
- are a health care or public safety worker who has contact with human blood
- are an infant born to an HBV-infected mother
- are a hemodialysis patient
- are an infant/child or immigrant from areas with high rates of infection

How is the virus spread?

Hepatitis B virus can be found in the blood and, to a lesser extent, saliva, semen and other body fluids of an infected person. It is spread by direct contact with infected body fluids; usually by needle stick injury or sexual contact. Hepatitis B virus is not spread by casual contact.

What are the symptoms of hepatitis B?

The symptoms of hepatitis B include fatigue, poor appetite, stomach pain, fever, nausea, vomiting and occasionally joint pain, hives or rash. Urine may become darker in color and then jaundice (a yellowing of the skin and whites of the eyes) may appear. Adults are more likely than children to develop symptoms; however, up to 50 percent of adults who have acute infection do not have any symptoms.

How soon do symptoms appear?

The symptoms may appear six weeks to six months after exposure, but usually within four months.

For how long is a person able to spread the virus?

The virus can be found in blood and other body fluids several weeks before symptoms appear and generally persists for several months afterward. Approximately 10 percent of infected adults may become long-term (chronic) carriers of the virus. Infants infected at birth have a 90 percent chance of becoming chronically infected.

What is the treatment for hepatitis B?

There are no special medicines or antibiotics that can be used to treat a person that is acutely infected once the symptoms appear. Generally, bed rest is all that is needed. Interferon is the most effective treatment for chronic HBV infection and is successful in 25 to 50 percent of cases. Chronic carriers of HBV should avoid drinking alcohol or taking medications which are harmful to the liver, as these actions can make the liver disease worse.

What precautions should hepatitis B carriers take?

Chronic hepatitis B carriers should follow standard hygienic practices to ensure that close contacts are not directly contaminated by his or her blood or other body fluids. Carriers must not share razors, toothbrushes or any other object that may become contaminated with blood. In addition, susceptible household members, particularly sexual partners, should be immunized with hepatitis B vaccine. It is important for carriers to inform their dentist and health care providers.

How can hepatitis B be prevented?

A safe and effective vaccine to prevent hepatitis B is available. The hepatitis B vaccine is recommended for people in high-risk settings who have not already been infected and for infants who are born to infected mothers. It is recommended that all children and adolescents be vaccinated against hepatitis B along with their routine childhood immunizations beginning at birth. A special hepatitis B immune globulin is also available for people who are exposed to the virus. In the event of exposure to hepatitis B, consult a doctor or the local health department.

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Hepatitis C

What is hepatitis C?

Hepatitis C is a liver disease caused by the hepatitis C virus (HCV), which is found in the blood of persons who have this disease. HCV is spread by contact with the blood of an infected person.

Who gets hepatitis C?

Persons at highest risk for HCV infection include:

- persons who ever injected illegal drugs, including those who injected once or a few times many years ago,
- people who had blood transfusions, blood products or organ donations before June 1992, when sensitive tests for HCV were introduced for blood screening, and
- persons who received clotting factors made before 1987.

Other persons at risk for hepatitis C include:

- long-term kidney dialysis patients,
- health care workers after exposures (i.e., needle stick or splashes to the eye) to the blood of an infected person while on the job,
- infants born to HCV-infected mothers,
- people with high-risk sexual behavior, multiple partners and sexually transmitted diseases,
- people who snort cocaine using shared equipment, and
- people who have shared toothbrushes, razors and other personal items with a family member who is HCV-infected.

How is the virus spread?

Like hepatitis B virus, hepatitis C virus is spread when blood or body fluids of an infected person enters the body of a person who is not infected, such as through sharing needles or “works” when shooting drugs or occupational needle stick injury. The risk of sexual transmission has not been thoroughly studied but appears to be low in long-term, monogamous relationships. There is no evidence that the hepatitis C virus can be transmitted by casual contact such as hugging or shaking hands, through foods, by sharing eating utensils or drinking glasses, or by coughing or sneezing. Hepatitis C is not spread by breastfeeding.

What are the symptoms and consequences of infection?

Approximately 20 percent of persons exposed to the virus develop symptoms which may include jaundice (yellowing of the skin and whites of the eyes), fatigue, dark-colored urine, stomach pain, loss of appetite and nausea. After the initial infection, 15-25 percent will recover and 75-85 percent will become chronically infected (lifelong infection). Approximately 70 percent of persons chronically infected will develop liver disease, sometimes decades after initial infection.

How soon do symptoms occur?

Symptoms may occur from two weeks to six months after exposure but usually within six to nine weeks.

When and for how long is a person able to spread hepatitis C?

Persons with acute hepatitis C virus infection are generally contagious from one or more weeks before the onset of symptoms. The contagious period is indefinite in chronically infected persons. All persons who test positive should be considered to be potentially contagious.

What is the treatment for hepatitis C?

Drugs (anti-viral) are licensed for treatment of persons with chronic hepatitis C. Combination drug therapy, using pegylated interferon and ribavirin, can get rid of the virus in up to five out of 10 persons with genotype 1, the most common genotype in the U.S. and eight out of 10 persons with genotype 2 or 3. It is important to know that the decision to treat hepatitis C is complex and is best made by a physician experienced in treating the disease.

Is donated blood tested for this virus?

Since the early 1990s, blood donation centers throughout the U. S. have routinely used a blood donor screening test for hepatitis C. Widespread use of this test has significantly reduced the number of post-transfusion hepatitis C infections.

How can the risk of chronic liver disease be reduced among persons infected with hepatitis C?

People who are infected with hepatitis C should not drink alcohol. They should talk with their doctor before taking any new medications, including over-the-counter and herbal medications. They should also talk with their doctor about getting the hepatitis A and hepatitis B vaccines.

How can the spread of hepatitis C be prevented?

People who have had hepatitis C should remain aware that their blood and possibly other body fluids are potentially infective.

- Do not shoot drugs; if you shoot drugs, stop and get into a treatment program; if you can't stop, never share needles, syringes, water or "works," and get vaccinated against hepatitis A and B.
- Do not share personal care items that might have blood on them (razors, toothbrushes).
- If you are a health care or public safety worker, always follow routine barrier precautions and safely handle needles and other sharps; get vaccinated against hepatitis B.
- Consider the risks if you are thinking about getting a tattoo or body piercing. You might get infected if the tools have someone else's blood on them or if the artist or piercer does not follow good health practices.
- HCV can be spread by sex, but this is rare. If you are having sex with more than one steady sex partner, use latex condoms correctly and every time to prevent the spread of sexually transmitted diseases. You should also get vaccinated against hepatitis B.
- If you are infected with HCV, do not donate blood, organs or tissue.

Is there a vaccine for hepatitis C?

Currently, a hepatitis C vaccine is not available.

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Herpes II (genital herpes)

What is herpes II?

Herpes II is a sexually transmitted viral infection, which often produces painful sores, usually in the genital area. Once infected, an individual may carry the virus and be subject to recurrent bouts of infection. Some estimate that as many as 20 percent of the adult population in the United States has been exposed to the virus.

Who gets herpes II?

Any person who has intimate sexual contact with an infected person can contract the infection. In addition, herpes II can be spread from an infected mother to her child during birth.

How is herpes II spread?

The herpes II virus is spread during sexual contact with an infected person who is secreting the virus in fluids from lesions or mucous membranes.

What are the symptoms of herpes II?

Typically, the first signs of herpes II is a cluster of blister-like lesions in the genital area (head of penis, labia, anus, cervix) which spread and merge, break and crust over within four to 15 days. The fluid from these itching, painful sores is highly infectious. Other frequent symptoms are painful urination, urethral or vaginal discharge and swollen lymph nodes. The first exposure or primary episode consists of headache, fever, chills and muscular weakness. Recurrent episodes are less severe and are limited to the affected area.

How soon do symptoms appear?

Some studies have shown that from one-half to two-thirds of people infected with the virus will have no symptoms. But, if they appear, local symptoms may be seen from two to 12 days after exposure.

When and for how long is a person able to spread herpes II?

People are most likely to transmit the virus when the lesions are evident. There is evidence, however, that the virus may be shed even when no symptoms of a recurrent episode are present.

Does past infection with herpes II make a person immune?

No. After the initial infection, the herpes II virus becomes dormant within the body. Symptoms may recur with varying frequency and are often associated with stress factors.

What is the treatment for herpes II?

Acyclovir, valacyclovir and famciclovir have been shown to reduce the shedding of herpes II virus, diminish pain and speed the healing of primary herpes lesions. In the oral form, this treatment also appears to shorten the duration of both primary and recurrent episodes.

What can a person or community do to prevent the spread of herpes II?

Avoidance of sexual contact with symptomatic individuals is an immediate, but only partial, answer because herpes virus may be shed while the infected individual remains asymptomatic. Cesarean section is often recommended when primary or recurrent herpes II lesions occur in late pregnancy.

Sexual relations should be approached responsibly.

- Limit the number of your sex partners.
- Use a male or female condom.
- If you think you are infected, avoid any sexual contact and visit the local STD clinic, a hospital or your doctor.

Histoplasmosis

What is histoplasmosis?

Histoplasmosis is a fungus infection that affects the lungs and may occasionally invade other parts of the body. It is an uncommon disease with fewer than 12 cases reported in upstate New York each year.

Who gets histoplasmosis?

Anyone can get histoplasmosis. It is recognized more often in immunocompromised individuals, such as AIDS patients. Birds (especially chickens), bats, dogs, cats, rats, skunks, opossum, foxes and other animals can get histoplasmosis and may play a role in spreading the disease.

How is histoplasmosis spread?

The disease is acquired by inhaling the spore stage of the fungus. Outbreaks may occur in groups with common exposures to bird or bat droppings or recently disturbed, contaminated soil found in chicken coops, caves, etc. Person-to-person spread of histoplasmosis does not occur.

What are the symptoms of histoplasmosis?

Symptoms vary from mild to severe, ranging from flu-like illness to serious lung infection.

How soon do symptoms appear?

Symptoms may appear within five to 18 days (usually 10 days) after exposure. However, most people do not experience symptoms.

Does past infection with histoplasmosis make a person immune?

Infection usually results in increased resistance to infection, although the immunity is not complete.

What is the treatment for histoplasmosis?

Specific medications such as amphotericin B are available.

What can be done to prevent the spread of histoplasmosis?

Minimize exposure to dust in contaminated and enclosed environments such as chicken coops and their surrounding soil. Use of a protective mask and spraying the area with water may be helpful in minimizing exposure to dust.

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Human Papillomavirus (HPV, genital or venereal warts)

What are venereal warts?

Venereal warts, also called condyloma, are a common sexually transmitted disease (STD) caused by the human papillomavirus (HPV) that affects the skin or mucous membranes. The virus may cause cauliflower-like fleshy growths in moist areas in and around the sex organs. In many cases, warts are not visible to the naked eye.

Who gets venereal warts?

Any sexually active person can be infected with venereal warts. Most often, venereal warts are found in young (age 15 to 30 years) people who have multiple sex partners. Those whose immune systems are compromised are more likely to become infected and to have a more serious infection than others.

How are venereal warts spread?

Venereal warts are generally spread through direct skin-to-skin contact during vaginal, anal and oral sex with someone who is infected. HPV can also be spread from mother to child (usually found in the child's throat or mouth) during birth.

What are the symptoms of venereal warts?

Venereal warts appear as soft, fleshy growths that vary in size, are frequently painless and can be raised, pointed or flat. The warts may appear singly or in clusters.

How soon do symptoms appear?

The average incubation period, which begins immediately after the initial sexual contact with an infected person, is usually two to three months but can range from one to 20 months. However, when HPV is transmitted from one person to another, the virus infects the top layers of the skin and can remain inactive or latent for months or possibly years before warts or other signs of HPV infection appear. In couples that have not had sex partners for many years, the woman may develop an abnormal Pap smear because of previous contact.

When and for how long is a person able to spread venereal warts?

HPV cannot be cured; therefore, the infected person is essentially contagious for life. Approximately two-thirds of the people who have sexual contact with a partner with genital warts will develop this disease. HPV infection can also be transmitted by people who have no visible lesions, but some researchers believe this condition is less contagious than overt genital warts.

Does past infection make a person immune?

No, previous infection with warts does not make a person immune from repeat infection.

What is the treatment for venereal warts?

Genital wart therapies can be administered by the patient or health provider. Providers can treat with a chemical called podophyllin, surgical removal or, in some cases, warts may be "frozen" and removed by a process called cryosurgery. In other cases, providers can order podofilox solution and gel, or imiquimod cream, that the patient applies as prescribed. Several treatment sessions are usually required.

What can be the effect of not being treated for venereal warts?

If a person is not treated, the warts will, in some cases, continue to grow and spread. There may be an increased risk of cancer of the cervix, vulva, penis or anus among people who are infected with particular strains of HPV in those areas.

What can be done to prevent the spread of venereal warts?

There are a number of ways to prevent the spread of venereal warts:

- Limit your number of sex partners.
- Use a male or female condom*.
- Carefully wash genitals after sexual relations.
- If you think you are infected, avoid sexual contact and visit your local STD clinic, a hospital or your doctor.
- Notify all sexual contacts immediately so they can obtain examination and treatment.

* Remember that using condoms may prevent the virus from coming in contact with susceptible skin areas. However, since HPV can infect the scrotum and vulva, transmission can occur outside condom-covered areas.

Revised: May 2004

Impetigo

What is impetigo?

Impetigo is a common infection of the skin resulting in blisters that may occur anywhere on the body but are usually observed around the nose or mouth. It is caused by one of two types of bacteria, either group A streptococci or Staphylococcus aureus.

Who gets impetigo?

Commonly, children and young adults are affected. In adults, impetigo may follow other skin problems or after an upper respiratory tract infection. Impetigo occurs more in the hot humid summer months.

How is impetigo spread?

Impetigo is spread person to person through direct contact with discharge from blisters.

What are the symptoms of impetigo?

An itchy rash or red sores form that blister and then ooze. The sores may grow in size and spread. When blisters break, they form a flat, honey colored crust.

How soon do symptoms appear?

Blisters appear four to 10 days after exposure to the fluids from blisters on another person.

What is the treatment for impetigo?

Impetigo can be successfully treated with antibiotics prescribed by a health care provider. With antibiotic treatment, healing should begin within three days.

What can a person do to minimize the spread of impetigo?

Impetigo is contagious. Follow your doctor's instructions. It is important to wash the rash with soap and water and to cover it loosely with gauze or a bandage. Thorough hand washing is necessary, especially after touching infected areas of the body. A person with impetigo should avoid contact with newborn babies and should be excluded from school, daycare or food handling until receiving permission from a health care provider or until 24 hours after starting antibiotic treatment. Do not share unwashed towels, washcloths or clothing from someone who is infected.

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Infectious Mononucleosis (mono, EBV mononucleosis)

What is infectious mononucleosis?

Infectious mononucleosis is a viral disease that affects certain blood cells. It is caused by the Epstein-Barr virus (EBV), which is a member of the herpes virus family. Most cases occur sporadically. Outbreaks are rare.

Who gets infectious mononucleosis?

While most people are exposed to the Epstein-Barr virus sometime in their lives, very few go on to develop the symptoms of infectious mononucleosis. In underdeveloped countries, people are exposed in early childhood where they are unlikely to develop noticeable symptoms. In developed countries such as the United States, the age of first exposure may be delayed to older childhood and young adult age when symptoms are more likely to result. For this reason, it is recognized more often in high school and college students.

How is infectious mononucleosis spread?

The virus is spread by person-to-person contact, via saliva (on hands or toys, or by kissing). In rare instances, the virus has been transmitted by blood transfusion.

What are the symptoms of infectious mononucleosis?

Symptoms include fever, sore throat, swollen glands and feeling tired. Sometimes, the liver and spleen are affected. Duration is from one to several weeks. The disease is very rarely fatal.

How soon do symptoms appear?

Symptoms appear from four to six weeks after exposure.

When and for how long is a person able to spread infectious mononucleosis?

The virus is shed in the throat during the illness and for up to a year after infection. After the initial infection, the virus tends to become dormant for a prolonged period and can later reactivate and be shed from the throat again.

What is the treatment for infectious mononucleosis?

No treatment other than rest is needed in the vast majority of cases.

What can a person do to minimize the spread of infectious mononucleosis?

Avoid activities involving the transfer of body fluids (commonly saliva) with someone who is currently or recently infected with the disease. At present, there is no vaccine available to prevent infectious mononucleosis.

Revised: May 2004

New York State Department of Health

Influenza (Flu) Fact Sheet

What Everyone Should Know About Flu and the Flu Vaccine

What is the flu?

The flu is a contagious respiratory illness caused by influenza viruses. It can cause mild to severe illness, and at times can lead to death. The best way to prevent this illness is by getting a flu **vaccination**.

Every year in the United States , on average:

- 5% to 20% of the population gets the flu;
- more than 200,000 people are hospitalized from flu complications, and;
- about 36,000 people die from flu.

Some people, such as older people, young children, and people with certain health conditions, are at high risk for serious flu complications.

What are the symptoms of the flu?

The flu usually starts suddenly and may include these symptoms:

- fever (usually high)
- headache
- extreme tiredness
- dry cough
- sore throat
- runny or stuffy nose
- muscle aches
- stomach symptoms, such as nausea, vomiting, and diarrhea, may occur in children but are rare in adults

Are some people at higher risk for complications than others from getting the flu?

People at high risk for serious flu complications include older people, young children and people with certain health conditions.

What are the complications associated with the flu?

Some of the complications caused by flu include bacterial pneumonia, dehydration and worsening of chronic medical conditions, such as congestive heart failure, asthma or diabetes. Children may get sinus problems and ear infections.

How is the flu spread?

The flu spreads in respiratory droplets caused by coughing and sneezing. It usually spreads from person to person, though occasionally a person may be infected by touching something with virus on it and then touching their mouth or nose.

When and for how long is a person able to spread the flu?

Adults may be able to infect others beginning one day **before** getting symptoms and up to seven days **after** getting sick. That means that you can give someone the flu before you know you're sick as well as when you are sick.

Who should get the flu vaccine?

When there is an adequate supply of vaccine, everyone should get the flu vaccine. Those people at greatest risk for complications of the flu and those most likely to get or spread the flu should be immunized as soon as vaccine is available. These include:

- All children aged 6-59 months;
- Adults aged ≥ 65 years of age;
- Adults aged 50-64 years of age;
- Persons aged 2-64 years with underlying chronic medical conditions;
- Persons ≥ 2 years old with conditions that can cause breathing problems ;
- All women who will be pregnant during the influenza season;
- Residents of nursing homes and long-term care facilities;
- Children aged 6 months to 18 years on chronic aspirin therapy;
- All health care workers; and
- Out-of-home caregivers and household contacts of persons in the high-risk groups.

Who should not be vaccinated?

There are some people who should not be vaccinated. They include:

- People who have a severe allergy to chicken eggs.
- People who have had a severe reaction to an influenza vaccination in the past.
- People who developed Guillain-Barre syndrome (GBS) within six weeks of getting an influenza vaccine previously.
- Children less than six months of age.
- People who are sick with a fever. (These people can get vaccinated once their symptoms lessen. People with a **mild** illness can usually get the vaccine.)

Cold Versus Flu

What is the difference between a cold and the flu?

The flu and the common cold are both respiratory illnesses but they are caused by different viruses. Because colds and flu share many symptoms, it can be difficult (or even impossible) to tell the difference between them based on symptoms alone. Special tests that usually must be done within the first few days of illness can be carried out, when needed, to tell if a person has the flu.

What are the symptoms of the flu versus the symptoms of a cold?

In general, the flu is worse than the common cold, and symptoms such as fever, body aches, extreme tiredness and dry cough are more common and intense. Colds are usually milder than the flu. People with colds are more likely to have a runny or stuffy nose. Colds generally do not result in serious health problems, such as pneumonia, bacterial infections, or hospitalizations.

Preventing the Flu

What can I do to protect myself against the flu?

The single best way to prevent the flu is to get a flu vaccination each fall. There are two types of vaccines:

- The "flu shot" -- an inactivated vaccine (containing killed virus) that is given with a needle. **The flu shot** is approved for use in people older than 6 months, including healthy people and people with chronic medical conditions.
- The nasal-spray flu vaccine -- a vaccine made with live, weakened flu viruses that do not cause the flu (sometimes called LAIV for "Live Attenuated Influenza Vaccine"). LAIV is approved for use in healthy people 5 years to 49 years of age who are not pregnant.

About two weeks after vaccination, antibodies develop that protect against influenza virus infection. Flu vaccines will not protect against influenza-like illnesses caused by other viruses.

Can antiviral medications prevent the flu?

Four antiviral drugs (amantadine, rimantadine, oseltamivir, and zanamivir) are approved for treatment and prevention of the flu. These drugs are not, however, a substitute for influenza vaccination. All of these drugs are prescription drugs and a doctor should be consulted before the drugs are used for treating or preventing the flu.

Questions or comments: influenza@health.state.ny.us

Revised: September 2006

Legionellosis (Legionnaires' disease)

What is legionellosis?

Legionellosis is a bacterial disease which may cause pneumonia. Fewer than 100 cases are reported each year in upstate New York. Most cases occur as single isolated events. Outbreaks are relatively rare.

Why is it called legionellosis?

An outbreak of this disease in Philadelphia in 1976, largely among people attending a state convention of the American Legion, led to the name "Legionnaires' Disease." Subsequently, the bacterium causing the illness was named *Legionella pneumophila* and the name of the illness was changed to legionellosis.

Is this a new disease?

No. The bacterium was first identified in 1976, but earlier cases have been confirmed as far back as 1947.

How widespread is legionellosis?

It is estimated that about 25,000 people develop legionellosis in the United States each year. An additional unknown number are infected with the legionella bacterium and have mild symptoms or no illness at all. Cases occur sporadically and in outbreaks. Outbreaks occur most often in the summer but cases occur all year round.

How severe is the illness?

Legionellosis can be a mild respiratory illness or it can be severe enough to cause death. From 10 to 40 percent of healthy adults have antibodies showing previous exposure to the organism, but only a small percentage have a history of previous pneumonia.

Where are legionella found?

Legionella exist naturally in water and moist soil. They have been found in creeks and ponds, hot and cold water taps, hot water tanks, water in air conditioning cooling towers and evaporative condensers, and soil at excavation sites.

How is legionellosis spread?

The disease appears to be spread through the air from a soil or water source. All studies to date have shown that person-to-person spread does not occur.

Who gets legionellosis?

People of any age can get legionellosis but the disease most often affects the elderly. People with underlying illnesses such as cancer or those with lowered immune system resistance to disease are also at higher risk. It rarely occurs in otherwise healthy people.

What are the usual symptoms of legionellosis?

The early symptoms of legionellosis may be flu-like with muscle aches, headache, tiredness and dry cough followed by high fever, chills and occasionally diarrhea. Temperatures commonly reach 102-105 degrees Fahrenheit and chest X-rays often show pneumonia.

How soon do symptoms occur/appear?

The incubation period for legionellosis ranges from two to 10 days, but is usually five to six days.

What is the treatment for legionellosis?

Antibiotics such as erythromycin, levaquin or azithromycin appear to be effective in treating the disease.

Why is legionellosis so difficult to diagnose?

Legionellosis often causes symptoms similar to those caused by other organisms, including influenza virus and other types of bacterial pneumonia. In addition, the specific laboratory tests needed to confirm the diagnosis are not always requested. The diagnosis depends on very specialized laboratory tests involving culture of the patient's sputum or detecting the organism in urine. Routine laboratory tests will not identify the legionella bacteria.

When does the health department investigate a case of legionellosis?

Because sporadic cases are common and presently not preventable, they are often investigated only to confirm the diagnosis and rule out an outbreak. If an outbreak occurs, an investigation to look for a possible environmental source is conducted.

Revised: May 2004

Leprosy (Hansen's disease)

What is leprosy?

Leprosy is a chronic bacterial disease of the skin and nerves in the hands and feet and, in some cases, the lining of the nose. Leprosy is a rare disease in the United States.

Who gets leprosy?

Anyone can get leprosy, but children seem to be more susceptible than adults.

How is leprosy spread?

It is not clear how the leprosy germ is spread, but household and prolonged close contact is important. The germs probably enter the body through the nose and possibly through broken skin. The germs get in the air through nasal discharge of untreated lepromatous patients.

What are the symptoms of leprosy?

Tuberculoid leprosy symptoms are a few well-defined skin lesions that are numb. Lepromatous leprosy symptoms are a chronically stuffy nose and many skin lesions and nodules on both sides of the body.

How soon after exposure do symptoms appear?

It usually takes about four years for tuberculoid leprosy symptoms to appear and about eight years for lepromatous leprosy symptoms to appear.

When and for how long is a person able to spread leprosy?

In most cases, a person will not infect others after about three months of starting treatment.

What is the treatment for leprosy?

Patients with leprosy should be treated by a doctor who has experience with the disease. Treatment is with multiple drugs for six months to two years.

How can leprosy be prevented?

The best way to prevent the spread of leprosy is the early diagnosis and treatment of people who are infected. For household contacts, immediate and annual examinations are recommended for at least five years after last contact with a person who is infectious.

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Leptospirosis (Weil's disease)

What is leptospirosis?

Leptospirosis is a bacterial disease associated with wild and domestic animals. Only a few cases are reported each year in New York state.

Who gets leptospirosis?

Leptospirosis is primarily an occupational disease that affects farmers, veterinarians, sewer workers or others whose occupation involves contact with animals, especially rats.

How is it spread?

Leptospirosis is spread mainly by the urine of infected animals and is generally not transmitted from person to person.

What are the symptoms of leptospirosis?

The symptoms of leptospirosis are fever, headache, chills, vomiting, jaundice, anemia and sometimes rash. People with leptospirosis are usually quite ill and are often hospitalized.

How soon after exposure do symptoms appear?

The incubation period is usually 10 days with a range of four to 19 days.

How is leptospirosis diagnosed?

The disease is diagnosed using specific blood tests available through public health laboratories.

Does past infection with leptospirosis make a person immune?

There are several strains of the organism. Infection with one usually provides immunity to that organism but not to other strains.

What is the treatment for leptospirosis?

The antibiotics of choice are penicillin, streptomycin, tetracycline and erythromycin. Kidney dialysis may be necessary in some cases.

What are the complications associated with leptospirosis?

If not treated, the patient could develop kidney damage. In rare cases, death may occur.

What can be done to prevent the spread of leptospirosis?

Disease prevention consists of good sanitation. The use of boots and gloves in hazardous places and rodent control can also minimize the risk of spread.

My dog has leptospirosis. Is there a risk I can get it from him?

Because of their outdoor activities and frequent contact with water or soil contaminated with the organism, dog infections are not uncommon. Dog vaccination is not completely effective due to a limited coverage in the vaccine for the numerous types of the organism. Infected dogs theoretically pose a risk of transmission to their owners through contact with their urine, although such direct transmission has been infrequently documented. Owners of infected dogs are advised to:

- Work with a veterinarian to treat the infection in their dog.
- Use caution when handling the dog's urine and wash hands whenever there is any question that there was urine contact.
- Until the dog's infection is cleared up, do not let the dog walk or urinate in high risk areas such as parks frequented by children, beaches, near waterways that are used for drinking recreation, etc.

Listeriosis

What is listeriosis?

Listeriosis is a bacterial infection caused by *Listeria monocytogenes*. While many bacteria generally infect specific locations within the human body, listeria may infect many different sites, such as the brain or spinal cord membranes or the bloodstream.

Who gets listeriosis?

Anyone can get the disease, but those at highest risk are newborns, the elderly, people with weakened immune systems and pregnant women. About 30 percent of cases occur in newborns within the first three weeks of life.

When do listeria infections occur?

Infections occur throughout the year. Although most cases occur sporadically, foodborne outbreaks do occur.

How is listeriosis spread?

Listeria bacteria are widely distributed in nature and can be found in water and soil. Infected animals may also serve as sources. Unlike other organisms, listeria can be spread by several different methods. Ingestion (foodborne transmission) of the organism, such as through unpasteurized milk or contaminated vegetables, is often a source of cases. In newborn infections, the organism may be transmitted from mother to fetus in utero or directly to the fetus at the time of birth. Direct contact with the organism can cause lesions on the hands or arms and person-to-person transmission can occur through sexual contact. Infection is also possible by inhaling the organism.

What are the symptoms of listeriosis?

Because listeriosis can affect many different parts of the body, the symptoms vary. For meningoenitis, the onset can be sudden with fever, intense headache, nausea, vomiting and signs of meningeal irritation. In other body locations, various types of lesions at the site of infection are the primary symptom. In most cases, listeria infection causes fever and influenza-like symptoms resembling many other illnesses.

How soon after exposure do symptoms appear?

Listeriosis has an extremely variable incubation period. In large outbreaks, the range has extended from three to 70 days but symptoms usually appear within a month.

How is this disease diagnosed?

Specific laboratory tests are the only way to identify this disease. Since many cases may be mild, the disease may be more common than is realized.

Are there any unusual features of this disease?

Listeria infections are a significant risk for pregnant women, who may not experience obvious symptoms. Infection of the fetus can occur before delivery and can cause abortion as early as the second month of pregnancy, but more often in the fifth and six months. An infection later in pregnancy may cause exposure during birth, sometimes resulting in infection of the newborn which may be fatal.

Does past infection with listeria make a person immune?

Past infection does not appear to produce immunity.

What is the treatment for listeria infection?

Several antibiotics are effective against this organism. Ampicillin, either alone or in combination with other antibiotics, is frequently used.

Lyme Disease (tick-borne borreliosis, Lyme arthritis)

What is Lyme disease?

Lyme disease is caused by bacteria transmitted by the deer tick (*Ixodes scapularis*). Lyme disease may cause symptoms affecting the skin, nervous system, heart and/or joints of an individual. Over 45,000 cases have been reported to the New York State Department of Health since Lyme disease became reportable in 1986.

Who gets Lyme disease?

Lyme disease can affect people of any age. People who spend time in grassy and wooded environments are at an increased risk of exposure. The chances of being bitten by a deer tick are greater during times of the year when ticks are most active. Young deer ticks, called nymphs, are active from mid-May to mid-August and are about the size of poppy seeds. Adult ticks, which are approximately the size of sesame seeds, are most active from March to mid-May and from mid-August to November. Both nymphs and adults can transmit Lyme disease. Ticks can be active any time the temperature is above freezing. Infected deer ticks can be found throughout New York state.

How is Lyme disease transmitted?

Not all deer ticks are infected with the bacteria that cause Lyme disease. Ticks can become infected if they feed on small animals that are infected. The disease can be spread when an infected tick bites a person and stays attached for a period of time. In most cases, the tick must be attached for 36 hours or more before the bacteria can be transmitted. Lyme disease does not spread from one person to another. Transfer of the bacteria from an infected pregnant woman to the fetus is extremely rare.

What are the symptoms of Lyme disease?

In 60 to 80 percent of cases, a rash resembling a bull's eye or solid patch, about two inches in diameter, appears and expands around or near the site of the bite. Sometimes, multiple rash sites appear. The early stage of Lyme disease is usually marked by one or more of the following symptoms: chills and fever, headache, fatigue, stiff neck, muscle and/or joint pain, and swollen glands. If Lyme disease is unrecognized or untreated in the early stage more severe symptoms may occur. As the disease progresses, severe fatigue, a stiff aching neck, and tingling or numbness in the arms and legs, or facial paralysis can occur. The most severe symptoms of Lyme disease may not appear until weeks, months or years after the tick bite. These can include severe headaches, painful arthritis, swelling of the joints, and heart and central nervous system problems.

When do symptoms appear?

Early symptoms usually appear within three to 30 days after the bite of an infected tick.

Does past infection with Lyme disease make a person immune?

Lyme disease is a bacterial infection. Even if successfully treated, a person may become reinfected if bitten later by another infected tick.

What is the treatment for Lyme disease?

Early treatment of Lyme disease involves antibiotics and almost always results in a full cure. However, the chances of a complete cure decrease if treatment is delayed.

What can be done to prevent Lyme disease?

When in tick-infested habitat - wooded and grassy areas - take special precautions to prevent tick bites, such as wearing light-colored clothing (for easy tick discovery) and tucking pants into socks and shirt into pants. Check after every two to three hours of outdoor activity for ticks on clothing or skin. Brush off any ticks on clothing before skin attachment occurs. A thorough check of body surfaces for attached ticks should be done at the end of the day. If removal of attached ticks occurs within 36 hours, the risk of tick-borne infection is minimal.

Repellents can be effective at reducing bites from ticks that can transmit disease. But their use is not without risk of health effects, especially if repellents are applied in large amounts or improperly. Repellents commonly available to consumers contain the active ingredients DEET (N, N-diethyl-m-toluamide), permethrin, or botanical oils. DEET products have been widely used for many years, but have occasionally been associated with health effects. Skin reactions (particularly at DEET concentrations of 50 percent and above) and eye irritation are the most frequently reported health problems. Products containing permethrin are for use on clothing only, not on skin. Rather than acting as a repellent, permethrin kills ticks and insects that come in contact with treated clothes. Permethrin can cause eye irritation. Insect repellents containing botanical oils, such as oil of geranium, cedar, lemongrass, soy or citronella are also available, but there is limited information on their effectiveness and toxicity. If you decide to use a repellent, use only what and how much you need for your situation. In addition:

- Be sure to follow label directions.
- Use repellents only in small amounts, avoiding unnecessary repeat application. Try to reduce the use of repellents by dressing in long sleeves and pants tucked into socks or boots.
- Children may be at greater risk for reactions to repellents, in part, because their exposure may be greater. Do not apply repellents directly to children. Apply to your own hands and then put it on the child.
- Do not apply near eyes, nose or mouth and use sparingly around ears. Do not apply to the hands of small children.
- After returning indoors, wash treated skin with soap and water.

How should a tick be removed?

Using tweezers, grasp the tick near the mouthparts, as close to the skin as possible. Be careful not to squeeze, crush or puncture the body of the tick, which may contain infectious fluids. Pull the tick in a steady, upward motion away from the skin. Do not attempt to remove ticks by using petroleum jelly, kerosene, lit cigarettes or other home remedies because these may actually increase the chance of contracting a tick-borne disease. After removing the tick, thoroughly disinfect the bite site with soap, rubbing alcohol or hydrogen peroxide and wash hands. Contact your health care provider if you have concerns about incomplete tick removal. Record the date and location of the tick bite. If a rash or flu-like symptoms appear contact your health care provider immediately.

How do I obtain information on a tick?

Tick identification services are available through the New York State Department of Health and some county health departments. The New York State Department of Health Tick Identification Service will tell you the species of the tick, whether it is engorged with blood and, if so, how long it may have been feeding. The Tick Identification Service will also report whether the mouthparts are present (if not, they may have remained in the skin and need to be removed, as you would a splinter). The Tick Identification Service **will not** tell you whether the tick is infected with disease-causing organisms. There is no charge for this service.

If you wish to have a tick identified, place it in a small jar containing rubbing alcohol, seal the container to prevent leakage and complete the Tick Identification Submittal Form. Mail the tick in the sealed container, along with the completed submittal form, to the New York State Health Department's Tick Identification Service, c/o HVCC Central Receiving, 80 Vandenberg Avenue, Troy, NY 12180. Once you send a tick to be identified it will not be returned.

Revised: June 2004

What can be done to prevent the spread of this disease?

Since the organism is widespread in nature, basic sanitary measures such as using only pasteurized dairy products, eating cooked meats and washing hands thoroughly before preparing foods offer the best protection. Pregnant women and persons with weakened immune systems may wish to avoid such foods as soft cheeses and raw hot dogs. Although the risk of listeriosis associated with foods from deli counters is relatively low, pregnant women and immunosuppressed persons may choose to avoid these foods or thoroughly reheat cold cuts before eating.

Revised: May 2004

Lymphogranuloma Venereum (LGV)

What is lymphogranuloma venereum (LGV)?

LGV is a sexually transmitted disease (STD) or infection involving the lymph glands in the genital area. It is caused by a specific strain of chlamydia.

Who gets LGV?

The incidence is highest among sexually active people living in tropical or subtropical climates. It has also occurred in some areas of the southern United States.

How is LGV spread?

The infection is spread by sexual contact.

What are the symptoms of LGV?

The first symptom may be a small, painless pimple or lesion occurring on the penis or vagina. It is often unnoticed. The infection then spreads to the lymph nodes in the groin area and from there to the surrounding tissue. Complications may include inflamed and swollen lymph glands which may drain and bleed.

How soon do symptoms appear?

The onset of symptoms varies widely. The initial lesion may appear from three to 30 days after exposure.

When and for how long is a person able to spread LGV?

An individual remains infectious as long as there are active lesions.

What is the treatment for LGV?

Treatment involves the use of certain antibiotics, specifically tetracycline or sulfamethoxazole.

What can be done to prevent the spread of LGV?

There are a number of ways to prevent the spread of LGV:

- Limit your number of sex partners.
- Use a male or female condom.
- Carefully wash genitals after sexual relations.
- If you think you are infected, avoid any sexual contact and visit your local STD clinic, a hospital or your doctor.
- Notify all sexual contacts immediately so they can obtain examination and treatment.

Revised: May 2004

Malaria

What is malaria?

Malaria is a mosquito-borne disease caused by any one of four different blood parasites, called Plasmodia. The disease is transmitted to people by the Anopheles mosquito. This disease is a leading cause of debilitating illness, with over 200 million cases each year from around the world. Almost all of the cases reported in New York state each year are acquired in foreign countries. However, a few locally acquired cases have occurred on Long Island and in Queens.

Who gets malaria?

Any person residing in or traveling to a country where malaria is prevalent is at risk for contracting the disease. Malaria is currently a problem in tropical or subtropical areas of Asia, Africa and Central and South America. Most black Africans show a natural resistance to some species of malaria. Otherwise, susceptibility to malaria is universal.

How is malaria spread?

Malaria is spread by the bite of an infected Anopheles mosquito. With certain malaria species, dormant forms can be produced which may cause relapses of malaria months to years later. Malaria may also be transmitted by transfusion of blood from infected people or by the use of contaminated needles or syringes.

What are the symptoms of malaria?

Symptoms include fever, chills, sweats and headache, and in some instances may progress to jaundice, blood coagulation defects, shock, kidney or liver failure, central nervous system disorders and coma. Cycles of chills, fever and sweating occurring every one, two or three days is a good indicator of malaria in a person recently returning from a tropical area.

How soon do symptoms occur?

The time between the infective mosquito bite and the development of malaria symptoms can range from 12 to 30 days depending on the type of Plasmodia involved. One strain of Plasmodium, called *P. vivax*, may have a prolonged incubation period of eight to 10 months. When infection occurs by blood transfusion, the incubation period depends on the number of parasites transferred but is usually less than two months.

When and for how long is a person able to spread malaria?

Untreated or inadequately treated cases may be a source of mosquito infection for one to three years depending on the strain of Plasmodium. Direct person-to-person transmission does not occur. Stored blood products can remain infective for 16 days.

What is the treatment for malaria?

Due to the changing pattern of drug-resistant strains, current recommendations can be obtained from your local, county or state health department.

What can be done to prevent the spread of malaria?

Since malaria is not native to the United States, exposure to American citizens occurs most frequently during foreign travel to malarious areas. It is very important to contact health officials to determine the proper preventive drug therapy. The liberal and frequent use of mosquito repellents as well as using a bed net can be very effective in preventing mosquito bites.

Measles (rubeola, hard measles, red measles)

What is measles?

Measles is an acute, highly contagious viral disease capable of producing epidemics. Since the introduction of the measles vaccination in 1963, the number of measles cases has decreased to about 100 cases reported annually in the United States.

Who gets measles?

Although measles is usually considered a childhood disease, it can be contracted at any age. In recent years, outbreaks have mainly involved high school and college students who are unvaccinated or have received only one dose of measles vaccine.

How is measles spread?

Measles is spread by direct contact with nasal or throat secretions of infected people or, less frequently, by airborne transmission. Measles is one of the most readily transmitted communicable diseases.

What are the symptoms of measles?

Measles symptoms generally appear in two stages. In the first stage, the individual may have a runny nose, cough and a slight fever. The eyes may become reddened and sensitive to light while the fever consistently rises each day. The second stage begins on the third to seventh day and consists of a temperature of 103-105 degrees Fahrenheit and a red blotchy rash lasting four to seven days. The rash usually begins on the face and then spreads over the entire body. Koplik spots (little white spots) may also appear on the gums and inside of the cheeks.

How soon do symptoms appear?

Symptoms usually appear in 10-12 days, although they may occur as early as seven or as late as 18 days after exposure.

When and for how long is a person able to spread measles?

An individual is able to transmit measles from five days prior to and five days after rash onset.

Does past infection make a person immune?

Yes. Permanent immunity is acquired after contracting the disease.

What is the treatment for measles?

There is no specific treatment for measles.

What are the complications associated with measles?

Pneumonia occurs in up to six percent of reported cases and accounts for 60 percent of deaths attributed to measles. Encephalitis (inflammation of the brain) may also occur. Other complications include middle ear infection and convulsions. Measles is more severe in infants and adults.

How can measles be prevented?

Anyone born on or after January 1, 1957, who does not have a history of physician-diagnosed measles or serologic confirmation of measles immunity, should receive two doses of MMR (measles, mumps, rubella) vaccine for maximum protection. The first dose should be given at 12-15 months of age. The second dose should be given at four to six years of age (school entry) at the same time as the DTaP and polio booster doses. MMR vaccine is recommended for all measles vaccine doses to provide increased protection against all three vaccine-preventable diseases: measles, mumps and rubella. Measles immunization is required of all children enrolled in schools and pre-kindergarten programs. Since August 1, 1990, college students have also been required to demonstrate immunity against measles.

Meningococcal Disease (meningococcal meningitis, meningococemia)

What is meningococcal meningitis?

Meningococcal disease is a severe bacterial infection of the bloodstream or meninges (a thin lining covering the brain and spinal cord). It is a relatively rare disease and usually occurs as a single isolated event. Clusters of cases or outbreaks are rare in the United States.

Who gets meningococcal disease?

Anyone can get meningococcal disease, but it is more common in infants and children.

How is the germ meningococcus spread?

The meningococcus germ is spread by direct close contact with nose or throat discharges of an infected person. Many people carry this particular germ in their nose and throat without any signs of illness, while others may develop serious symptoms.

What are the symptoms?

Although most people exposed to the meningococcus germ do not become seriously ill, some may develop fever, headache, vomiting, stiff neck and a rash. Up to 25 percent of patients who recover may have chronic damage to the nervous system. The disease is occasionally fatal.

How soon do the symptoms appear?

The symptoms may appear two to 10 days after exposure, but usually within five days.

When and for how long is an infected person able to spread the disease?

From the time a person is first infected until the germ is no longer present in discharges from the nose and throat, he or she may transmit the disease. The duration varies according to treatment used.

What is the treatment for meningococcal disease?

Antibiotics, such as penicillin G or ceftriaxone, can be used to treat people with meningococcal disease.

Should people who have been in contact with a diagnosed case of meningococcal meningitis be treated?

Only people who have been in close contact (household members, intimate contacts, health care personnel performing mouth-to-mouth resuscitation, daycare center playmates, etc.) need to be considered for preventive treatment. Such people are usually advised to obtain a prescription for a special antibiotic (either rifampin, ciprofloxacin or ceftriaxone) from their physician. Casual contact as might occur in a regular classroom, office or factory setting is not usually significant enough to cause concern.

Is there a vaccine to prevent meningococcal meningitis?

Currently, there is a vaccine that will protect against some of the strains of meningococcus. It is recommended in outbreak situations, and for those traveling to areas of the world where high rates of the disease are known to occur. For some college students, such as freshman living in dormitories, there is a modestly increased risk of meningococcal disease; students and parents should be educated about meningococcal disease and the availability of a safe and effective vaccine.

Revised: May 2004

Methicillin Resistant Staphylococcus Aureus (MRSA)

What is MRSA?

MRSA refers to a type of bacteria (*Staphylococcus aureus*) that is resistant to many antibiotics. It is a common cause of hospital-acquired infections.

Who gets MRSA?

Anyone can get MRSA, but it is found most often in hospitalized patients.

What are the symptoms associated with MRSA infection?

MRSA infections can cause a broad range of symptoms depending on the part of the body that is infected. These may include surgical wounds, burns, catheter sites, eye, skin and blood. Infection often results in redness, swelling and tenderness at the site of infection. Sometimes, people may carry MRSA without having any symptoms.

How is it transmitted?

The staph bacteria is generally spread through direct contact with the hands of a health care worker or patient who is infected or carrying the organism.

How long can an infected person carry MRSA?

Some people can carry MRSA for days to many months, even after their infection has been treated.

How are MRSA infections diagnosed?

MRSA infections can be diagnosed when a doctor obtains a sample or specimen from the site of infection and submits it to a laboratory. The laboratory places the specimen on a special "culture" plate containing nutrients, incubates the plate in a warmer and then identifies the bacteria. The final step is for the laboratory to conduct tests using various antibiotics to determine if the bacteria are resistant (able to withstand or tolerate) or sensitive (susceptible to killing) to select antibiotics.

What is the treatment for MRSA?

Although MRSA cannot be effectively treated with antibiotics such as methicillin, nafcillin, cephalosporin or penicillin, it can usually be treated with an antibiotic called vancomycin. Recently, however, a few strains of *Staphylococcus aureus* have even developed some degree of resistance to vancomycin. The vancomycin-resistant strains may be more difficult to treat. Newer antibiotics are being developed to address this problem.

How can the spread of MRSA be controlled?

Careful hand washing is the single most effective way to control spread of MRSA. Health care workers should wash their hands after contact with each patient. If the patient is known to have an MRSA infection, the health care worker should wear disposable gloves. Depending on the type of contact, a gown should also be worn. Patients must also wash their hands to avoid spreading the bacteria to others.

What about contact with carriers?

If basic hygiene precautions are followed, MRSA carriers are not a hazard to others including their family and friends.

Revised: May 2004

Mumps (infectious parotitis)

What is mumps?

Mumps is an acute viral disease characterized by fever, swelling and tenderness of one or more of the salivary glands.

Who gets mumps?

Although older people may contract the disease, mumps usually occurs in children between the ages of five and 15. Mumps occurs less regularly than other common childhood communicable diseases. The greatest risk of infection occurs among older children. Mumps is more common during winter and spring.

How is mumps spread?

Mumps is transmitted by direct contact with saliva and discharges from the nose and throat of infected individuals.

What are the symptoms of mumps?

Symptoms of mumps include fever, swelling and tenderness of one or more of the salivary glands, usually the parotid gland (located just below the front of the ear). Approximately one-third of infected people do not exhibit symptoms.

How soon after infection do symptoms occur?

The incubation period is usually 16 to 18 days, although it may vary from 12 to 25 days.

What complications have been associated with mumps?

Swelling of the testicles occurs in 15-25 percent of infected males. Mumps can cause central nervous system disorders such as encephalitis (inflammation of the brain) and meningitis (inflammation of the covering of the brain and spinal column). Other complications include arthritis, kidney involvement, inflammation of the thyroid gland and breasts and deafness.

When and for how long is a person able to spread mumps?

Mumps is contagious three days prior to and four days after the onset of symptoms.

Does past infection with mumps make a person immune?

Yes. Immunity acquired after contracting the disease is usually permanent.

Is there a vaccine for mumps?

Yes. Mumps vaccine is given on or after a child's first birthday and is usually administered in combination with measles and rubella vaccine. The vaccine is highly effective and one injection usually produces lifelong protection.

What can be done to prevent the spread of mumps?

The single most effective control measure is maintaining the highest possible level of immunization in the community. Children should not attend school during their infectious period.

Revised: May 2004

Mycoplasma Infection (walking pneumonia, atypical pneumonia)

What is mycoplasma infection?

Mycoplasma infection is respiratory illness caused by *Mycoplasma pneumoniae*, a microscopic organism related to bacteria.

Who gets mycoplasma infection?

Anyone can get the disease, but it most often affects older children and young adults.

When do mycoplasma infections occur?

Mycoplasma infections occur sporadically throughout the year. Widespread community outbreaks may occur at intervals of four to eight years. Mycoplasma infection is most common in late summer and fall.

How is mycoplasma spread?

Mycoplasma is spread through contact with droplets from the nose and throat of infected people especially when they cough and sneeze. Transmission is thought to require prolonged close contact with an infected person. Spread in families, schools and institutions occurs slowly. The contagious period is probably fewer than 10 days and occasionally longer.

What are the symptoms of mycoplasma infection?

Typical symptoms include fever, cough, bronchitis, sore throat, headache and tiredness. A common result of mycoplasma infection is pneumonia (sometimes called "walking pneumonia" because it is usually mild and rarely requires hospitalization). Infections of the middle ear (otitis media) also can result. Symptoms may persist for a few days to more than a month.

How soon after exposure do symptoms appear?

Symptoms generally begin 15-25 days after exposure. The symptoms generally develop slowly, over a period of two to four days.

How is mycoplasma infection diagnosed?

Mycoplasma infection is usually diagnosed on the basis of typical symptoms. A nonspecific blood test (cold agglutinins) is helpful in definitive diagnosis, but is not always positive. The use of more specific laboratory tests is often limited to special outbreak investigations.

Does past infection with mycoplasma make a person immune?

Immunity after mycoplasma infection does occur, but is not lifelong. Second infections are known to occur, although they may be milder. The duration of immunity is unknown.

What is the treatment for mycoplasma infection?

Antibiotics such as erythromycin, clarithromycin or azithromycin are effective treatment. However, because mycoplasma infection usually resolves on its own, antibiotic treatment of mild symptoms is not always necessary.

What can be done to prevent the spread of mycoplasma?

At this time, there are no vaccines for the prevention of mycoplasma infection and there are no reliably effective measures for control. As with any respiratory disease, all people should cover their face when coughing or sneezing.

Revised: May 2004

Nongonococcal Urethritis (NGU, NSU)

What is nongonococcal urethritis (NGU)?

NGU refers to an infection of the urethra (the tube running from the bladder through the penis in men or the labia in women through which urine passes) caused by some agent other than gonorrhea. This infection can be caused by any of several different organisms, although the most frequent cause of NGU is a germ called chlamydia, and is a sexually transmitted disease (STD).

Who gets NGU?

NGU is most often found in men since the organisms causing this infection are sexually transmitted and the female urethra is seldom infected during intercourse. Men between the ages of 15 and 30 having multiple sex partners are most at risk for this infection.

How is NGU spread?

NGU is spread almost exclusively through sexual contact involving penis to vagina or penis to rectum contact.

What are the symptoms of NGU?

The symptoms of NGU involve a slight burning or tingling during urination that is sometimes accompanied by a slight (usually clear) discharge (drip) from the urethra.

How soon do symptoms appear?

The symptoms associated with NGU usually appear from one to five weeks after infection. Some people never develop obvious symptoms throughout their infection.

When and for how long is a person able to spread NGU?

A person can spread NGU from the time they are infected until they are cured.

Does past infection with NGU make a person immune?

No. Past infection with NGU does not protect a person from contracting the disease again.

What is the treatment for NGU?

NGU is treated through the use of antibiotics such as tetracycline.

What can be the effect of not being treated for NGU?

If not treated for NGU, a person may experience swelling of the testicles (epididymitis) and infection of the prostate gland. More importantly, they may infect sexual partners.

What can be done to prevent the spread of NGU?

There are a number of ways to prevent the spread of NGU:

- Limit your number of sex partners.
- Use a condom.
- Carefully wash genitals after sexual relations.
- If you think you are infected, avoid any sexual contact and visit your local STD clinic, a hospital or your doctor.
- Notify all sexual contacts immediately so they can obtain examination and treatment.

Norwalk Virus Infection (calicivirus)

What is Norwalk virus infection?

Norwalk virus infection is a gastrointestinal illness that occurs sporadically or in outbreaks. The virus was first identified during a gastroenteritis outbreak in Norwalk, Ohio, in 1972. There are a number of strains of Norwalk virus which are also referred to as calicivirus.

Who gets Norwalk virus infection?

Anyone can become infected. It only occurs in humans and is found worldwide.

How is it spread?

Norwalk viruses are spread by exposure to infected people or contaminated food and water. The virus is passed in stool and vomit. Outbreaks have been linked to sick food handlers, contaminated shellfish or water contaminated with sewage. It is generally spread from person to person by direct contact, but some medical reports suggest that the virus can spread through the air during vomiting.

What are the symptoms?

Although the virus is easy to spread, serious illness rarely occurs. The most common symptoms include nausea, vomiting and stomach cramps. Diarrhea may occasionally accompany vomiting. Fever is usually low grade or absent. Infected people generally recover in one to two days.

How soon after exposure do symptoms appear?

The incubation period is one to two days.

What is the treatment for Norwalk virus infection?

No specific treatment is available. Persons who become dehydrated might need to be rehydrated by taking liquids by mouth. Occasionally patients may need to be hospitalized to receive intravenous fluids.

How can Norwalk virus infection be prevented?

The following recommendations may reduce the risk of acquiring or spreading the infection:

- Wash hands thoroughly after each toilet visit and before preparing food.
- People who experience nausea, vomiting or diarrhea should not attend school or work and should not handle food for others while ill.
- Avoid drinking untreated water.
- Cook shellfish thoroughly before eating.

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Pediculosis (lice, head lice, body lice, pubic lice, cooties, crabs)

What is pediculosis?

Pediculosis is an infestation of the hairy parts of the body or clothing with the eggs, larvae or adults of lice. The crawling stages of this insect feed on human blood, which can result in severe itching. Head lice are usually located on the scalp, crab lice in the pubic area and body lice along seams of clothing. Body lice travel to the skin to feed and return back to the clothing.

Who gets pediculosis?

Anyone may become louse infested under suitable conditions of exposure. Pediculosis is easily transmitted from person to person during direct contact. Head lice infestations are frequently found in school settings or institutions. Crab lice infestations can be found among sexually active individuals. Body lice infestation can be found in people living in crowded, unsanitary conditions where clothing is infrequently changed or laundered.

How is pediculosis spread?

For both head lice and body lice, transmission can occur during direct contact with an infested individual. Sharing of clothing and combs or brushes may also result in transmission of these insects. While other means are possible, crab lice are most often transmitted through sexual contact.

What are the symptoms of pediculosis?

Usually, the first indication of an infestation is the itching or scratching in the area of the body where the lice feed. Scratching at the back of the head or around the ears should lead to an examination for head louse eggs (nits) on the hair. Itching around the genital area should lead to an examination for crab lice or their eggs. Scratching can be sufficiently intense to result in secondary bacterial infection in these areas.

How soon do symptoms appear?

It may take as long as two to three weeks or longer for a person to notice the intense itching associated with this infestation.

For how long is a person able to spread pediculosis?

Pediculosis can be spread as long as lice or eggs remain alive on the infested person or clothing.

What is the treatment for pediculosis?

Medicated shampoos or cream rinses containing pyrethrins are preferred for treating people with head lice. Products containing pyrethrins are available over-the-counter, but those containing lindane are available only through a physician's prescription. Lindane-based shampoos are also available but not recommended for infants, young children and pregnant or lactating women. Retreatment after seven to 10 days is recommended to assure that no eggs have survived. Nit combs are available to help remove nits from hair. Dose and duration of shampoo treatment should be followed carefully according to label instructions.

What can be done to prevent the spread of pediculosis?

Physical contact with infested individuals and their belongings, especially clothing, headgear and bedding, should be avoided. Health education on the life history of lice, proper treatment and the importance of laundering clothing and bedding in hot water or dry cleaning to destroy lice and eggs is extremely valuable. In addition, regular direct inspection of children for head lice and, when indicated, of body and clothing, particularly of children in schools, institutions, nursing homes and summer camps, is important.

Pertussis (whooping cough)

What is pertussis?

Pertussis, or whooping cough, is a highly contagious disease involving the respiratory tract. It is caused by a bacterium that is found in the mouth, nose and throat of an infected person. In New York State, the number of pertussis cases each year varies from an average of 300 cases to over 1,000 cases per year. The reasons for these increases are not entirely clear, but three- to five-year cycles of increased number of cases are known to occur.

Who gets pertussis?

Pertussis can occur at any age. Although most of the reported cases occur in children under five years, the number of cases in adolescents and adults is increasing.

How is pertussis spread?

Pertussis is primarily spread by direct contact with discharges from the nose and throat of infected individuals. Frequently, older siblings who may be harboring the bacteria in their nose and throat can bring the disease home and infect an infant in the household.

What are the symptoms of pertussis?

Pertussis begins as a mild upper respiratory infection. Initially, symptoms resemble those of a common cold, including sneezing, runny nose, low-grade fever and a mild cough. Within two weeks, the cough becomes more severe and is characterized by episodes of numerous rapid coughs followed by a crowing or high pitched whoop. A thick, clear mucous may be discharged. These episodes may recur for one to two months, and are more frequent at night. Older people or partially immunized children generally have milder symptoms.

How soon after infection do symptoms appear?

The incubation period is usually five to 10 days but may be as long as 21 days.

When and for how long is a person able to spread pertussis?

A person can transmit pertussis from onset of symptoms to three weeks after the onset of coughing episodes. The period of communicability is reduced to five days after antibiotic therapy is begun.

Does past infection with pertussis make a person immune?

One attack usually confers prolonged immunity.

What are the complications associated with pertussis?

Complications of pertussis may include pneumonia, middle ear infection, loss of appetite, dehydration, seizures, encephalopathy (disorders of the brain), apneic episodes (brief cessation of breathing) and death.

What is the vaccine for pertussis?

The vaccine for pertussis is usually given in combination with diphtheria and tetanus. Immunization authorities recommend that DTaP (diphtheria, tetanus, acellular pertussis) vaccine be given at two, four, six and 15-18 months of age and between four and six years of age.

What can be done to prevent the spread of pertussis?

The single most effective control measure is maintaining the highest possible level of immunization in the community. Treatment of cases with certain antibiotics such as erythromycin can shorten the contagious period. People who have or may have pertussis should stay away from young children and infants until properly treated. Treatment of people who are close contacts of pertussis cases is also an important part of prevention.

Pinworm Infection

What are pinworms?

Pinworms are white, parasitic worms that can live in the large intestine of humans. They are about one-half inch long. While the infected person sleeps, female pinworms leave the intestinal tract and lay their eggs on the skin around the anus. The eggs are laid in a sticky, jelly-like substance that, along with the wriggling of the female pinworm, causes severe itching.

Who gets pinworm infection?

Pinworm is the most common worm infection in the United States. School-age children, followed by preschoolers, have the highest rates of infection. Cases of pinworm infection are seen most often at schools, day care centers and other institutional settings.

What are the symptoms of a pinworm infection?

Pinworm infection may cause:

- Itching around the anal area, difficulty sleeping and irritability.
- If it is a severe infection, symptoms may include
 - nervousness
 - restlessness
 - loss of appetite
 - weight loss
 - girls may experience vaginal itching and irritation (vaginitis), if pinworms are near the vagina.

How does someone get pinworms?

Pinworms are spread when an infected person, most often a child, has scratched his/her bare anal area and the eggs get under his/her fingernails. Pinworms can then be spread in the following ways:

- By an infected child not washing hands after using the bathroom. If the child then touches playmates or play toys, he/she may pass on the eggs.
- Pinworm eggs can also be transferred to the fingers from clothing or bedding, and then spread around the home.
- Eggs may be inhaled from the air or deposited onto food and swallowed.
- Pinworms can survive up to two weeks on clothing, bedding or other objects, if kept at room temperature.

The eggs may hatch while still attached to the skin around the anus. They then move through the rectum to the lower intestine, where they grow to adult size within two to six weeks. Pinworm infections can be spread as long as either worms or eggs are present.

How is a diagnosis of pinworm infection made?

Finding the female worm or the eggs confirms the diagnosis of pinworms. To find a female worm:

- At night, the adult worms can sometimes be seen directly around the anal area or in pajamas. The worm (one-quarter to one-half inch long) is clearly visible to the naked eye. Finding a worm confirms the diagnosis.
- If adult worms are not visible, conduct a tape test in the morning. Apply a piece of transparent tape against the folds of skin around the anus to pick up any eggs or worms. Seal in a plastic bag.
- Take the tape to a health care provider. The eggs and worms caught on the tape can be identified under a microscope.

Pinworms are rarely spotted in stool samples. Because bathing or a bowel movement can remove the eggs, **the tape test should be done as soon as the person wakes up in the morning.**

How is a pinworm infection treated?

Treating pinworms involves either prescription or over-the-counter drugs. Consult a health care provider before treating a suspected pinworm infection. Follow these treatment steps:

Step 1: Treat the infected person/any infected family members

1. The infected person should take the medicine orally. It is given in two doses. The second dose should be given two weeks after the first.
2. Bathe first thing in the morning to reduce egg contamination.
3. Wash hands and under the fingernails thoroughly, after using the bathroom, before eating and after changing diapers.
4. Discourage nail biting and scratching bare anal areas to avoid re-infection.
5. Keep fingernails trimmed very short.
6. Infection often occurs in more than one family member. Treat all infected family members at the same time.

Step 2: Treat the household

- Change and wash underwear and pajamas in hot water daily.
- Machine-wash sheets, blankets, towels and clothing in hot water to destroy eggs. Machine-dry at high temperature.
- Eggs are sensitive to sunlight, so open blinds in bedrooms in the daytime.
- Since pinworm eggs are light and scatter easily, dust should be removed carefully from all surfaces in the home. Careful vacuuming, or the use of an oiled cloth (which may be boiled or destroyed later), will help prevent the eggs from scattering.

How can pinworm infection and re-infection be prevented?

- Wash hands and under fingernails frequently.
- Encourage children to avoid scratching their bare anal areas.
- Pinworm eggs continue to be present (excreted) in the feces of an infected person for up to a week after the treatment, so precautions should be taken to prevent re-infection by washing hands thoroughly, especially under the nails.
- Bathe daily.
- Change and wash clothing and bedding frequently.

What if the pinworm infection occurs again?

If infection occurs again, consult your health care provider. In some cases, it may be necessary to treat the patient and close family contacts more than once.

For more information, contact your local health department or visit the U.S. Centers for Disease Control and Prevention Web site at <http://www.cdc.gov/ncidod/dpd/parasites/pinworm/default.htm>.

Revised: May 2004

Plague

What is plague?

Plague is a severe disease caused by an infection with a type of bacteria that is found in rodents and their fleas. Plague can exist in different forms in people and can require strict isolation and disinfection procedures. The disease is relatively rare in the United States and exposure is primarily limited to the western and southwestern parts of the country.

Who gets plague?

People working in or visiting areas with infected rodents are at greater risk of contracting this disease. There have been no reports of plague in New York State. However, exposures in the western U.S. or overseas have occasionally resulted in cases or need for investigations in the eastern U.S.

How is plague spread?

The most common means of transmission is by exposure to infected fleas. Other important sources include the handling of infected animals (especially cats, rabbits and rodents), airborne droplets from humans or household pets with plague pneumonia, or by laboratory exposure.

What are the symptoms of plague?

The initial symptom is usually a swollen, inflamed and tender lymph gland in the body near where the infected flea bit the person (a bubo). Fever is usually present. With or without a bubo, the disease may progress to a generalized blood infection, with non-specific flu-like symptoms. Pneumonia may also develop. People or animals with pneumonic plague may transmit the disease to other people by coughing.

How soon do symptoms occur?

Symptoms usually begin within one to six days after exposure to the plague bacteria.

Does past infection with plague make a person immune?

Immunity after plague recovery is variable and may not provide complete protection.

What is the treatment for plague?

Certain antibiotics such as streptomycin, tetracyclines and chloramphenicol are effective in treating the disease.

What can be done to prevent the spread of plague?

- The patient, his/her clothing and baggage should be treated to kill all fleas that may be attached.
- Patients or animals with pneumonic plague should be quarantined until three full days of antibiotic treatment have been administered.
- When human or animal cases have been identified, efforts to control the rodent and flea populations by the use of rodenticides and insecticides should be used.
- Wild rodents such as prairie dogs imported from the western U.S. should not be used as pets.

Revised: June 2004

Pneumococcal Disease (includes pneumococcal pneumonia, pneumococcal meningitis and pneumococcal bacteremia)

What is pneumococcal disease?

Pneumococcal disease is a severe bacterial infection caused by *Streptococcus pneumoniae*, also called pneumococcus. It may cause pneumonia, meningitis or a blood stream infection (bacteremia).

Who gets pneumococcal disease?

Although anyone can get pneumococcal disease, it occurs more frequently in infants, young children, African Americans, some Native American populations, the elderly or in people with serious underlying medical conditions such as chronic lung, heart or kidney disease. Others at risk include alcoholics, diabetics, people with weakened immune systems and those without a spleen.

How is the disease transmitted?

The pneumococcus is spread by airborne or direct exposure to respiratory droplets from a person who is infected or carrying the bacteria?

When does pneumococcal disease occur?

Infections occur most often during the winter and early spring when respiratory illnesses are more common.

How soon after exposure do symptoms occur?

The incubation period may vary but it is generally one to three days.

What are the symptoms?

Symptoms generally include an abrupt onset of fever and shaking or chills. Other common symptoms may include headache, cough, chest pain, disorientation, shortness of breath, weakness and occasionally a stiff neck.

How is pneumococcal disease diagnosed?

Doctors are able to diagnose pneumococcal disease based on the type of symptoms exhibited by the patient and specific laboratory cultures of sputum, blood or spinal fluid.

How is it treated?

Prompt treatment with antibiotics, such as penicillin or cephalosporin, is usually effective. However, penicillin-resistant strains of pneumococcus are increasingly being reported throughout the United States.

Is there a vaccine to prevent infection?

Yes. There are two types of vaccines currently in use, one of which is approved for children less than two years of age. Both vaccines are safe and reduce disease occurrence. Pneumococcal conjugate vaccine is recommended for all children less than 24 months old and for children between 24 and 59 months old who are at high risk of disease. Older children and adults with risk factors may receive the pneumococcal polysaccharide vaccine. Patients in high-risk categories should ask their health care provider or local health department about pneumococcal vaccine.

Poliomyelitis (infantile paralysis, polio)

What is polio?

Polio is a viral disease which may affect the central nervous system. Since polio immunization has become widespread, cases of polio are very rare.

Who gets polio?

Polio is more common in infants and young children and occurs under conditions of poor hygiene. However, paralysis is more common and more severe when infection occurs in older individuals. In exceedingly rare cases, oral polio vaccine has caused paralytic polio in a person who received the vaccine or in a person who was a close contact of a vaccine recipient.

How is polio spread?

Polio is predominately spread through the feces.

What are the symptoms of polio?

Infection ranges in severity from an unapparent infection to a paralytic disease which may result in death. Symptoms include fever, malaise, headache, nausea and vomiting, excruciating muscle pain and stiffness in the neck and back.

How soon after infection do symptoms appear?

The incubation period is usually six to 20 days for paralytic cases, with a range of three to 35 days.

When and for how long is a person able to spread polio?

Patients are most infectious from seven to 10 days before and after the onset of symptoms. However, patients are potentially contagious as long as the virus is present in the throat and feces. The virus persists in the throat for approximately one week after the onset of illness and is excreted in the feces for several weeks or, occasionally, months.

Does past infection with polio make a person immune?

There are three types of polio virus. Lifelong immunity usually depends on which type of virus a person contracts. Second attacks are rare and result from infection with a polio virus of a different type than the first attack.

What is the treatment for polio?

There is presently no cure for polio. Treatment involves supportive care.

What are the complications associated with polio?

Complications include paralysis (most commonly of the legs). Paralysis of the muscles of respiration and swallowing can be fatal.

Is there a vaccine for polio?

Two types of polio vaccine are available: trivalent oral polio vaccine (tOPV) and inactivated polio vaccine (IPV). In July 1999, the American Academy of Pediatrics and the Advisory Committee on Immunization Practices recommended that IPV be used exclusively in the United States beginning in 2000. The recommended schedule for childhood immunization is for IPV to be given at two, four, and six to 18 months of age and between four to six years of age. Adults traveling to countries where polio cases are occurring should review their immunization status.

How can polio be prevented?

Maintaining high levels of polio immunization in the community is the single most effective preventive measure.

Psittacosis (ornithosis, parrot fever, chlamydiosis)

What is psittacosis?

Psittacosis is an infectious disease usually transmitted to humans from birds in the parrot family, turkeys and pigeons. It is caused by a bacteria called *Chlamydia psittaci*.

Who gets psittacosis?

Since this disease is spread by birds in the parrot family, it is occasionally found in pet store workers and people who have purchased an infected bird. It may also be found in farmers and slaughterhouse workers who process turkeys.

How is psittacosis spread?

Psittacosis is usually spread by inhaling dust from dried droppings from bird cages and by handling infected birds in slaughterhouses. Human to human spread has not been reported. Waste material in the bird cage may remain infectious for weeks.

What are the symptoms of psittacosis?

In humans, the symptoms are fever, headache, chills and sometimes pneumonia. In birds, the symptoms include poor appetite, ruffled appearance, eye or nose discharge and diarrhea. Occasionally, birds may die from psittacosis. Some birds may shed the organism while exhibiting no symptoms.

How soon after infection do symptoms appear?

The incubation period may range from four to 15 days but is usually 10 days.

How is psittacosis diagnosed?

In humans, the diagnosis can be made by special blood antibody tests. In birds, veterinarians can diagnose the infection by conducting a special chlamydia test on a swab of fecal material.

Does past infection with psittacosis make a person immune?

Infection does not provide permanent immunity to this disease.

What is the treatment for psittacosis?

Antibiotics such as tetracycline are often prescribed. Tetracycline is effective in both humans and birds.

What can be the effect of not being treated for psittacosis?

The disease may be severe and result in death, especially in untreated older people.

What can be done to prevent the spread of psittacosis?

If birds are kept as pets, clean the cage often so that fecal material does not accumulate, dry up and become airborne. Current laws require that members of the parrot family that are imported from foreign countries be kept in a bird quarantine station prior to sale. During the quarantine, they are given feed containing tetracycline to reduce the risk of infection, but the duration of treatment is generally shorter than the 45 days necessary to completely treat the bird. Therefore, federal health authorities have recently recommended that breeders and importers ensure that all domestic nestlings and imported birds receive the special tetracycline feed for 45 continuous days in order to prevent the spread of psittacosis from birds to humans.

Rabies (hydrophobia)

What is rabies?

Rabies is a viral disease affecting the central nervous system (brain and spinal cord). It is transmitted from infected mammals to man and is almost always fatal once symptoms appear. Fortunately, only a few human cases are reported each year in the United States.

Who gets rabies?

All warm blooded mammals including man can get rabies. Among wild animals, rabies is most often seen in raccoons, bats, skunks and foxes.

How do people get rabies?

People can get rabies if they are exposed to the saliva or nervous tissue of a rabid animal through a bite or scratch. Although rare, exposure can also occur if infected saliva or nervous tissue gets into a fresh wound (one that has bled within 24 hours) or mucous membrane (eyes, nose, mouth). There have also been a few cases of person to person transmission in corneal transplant recipients when it was not known that donors were infected with rabies.

Can people be exposed to rabies and not know it?

Bats have small, sharp teeth that may not leave a visible puncture wound or noticeable pain at the bite site, therefore it is possible to be bitten without knowing it as described in the following scenarios. These scenarios indicate a reasonable probability that an exposure could have occurred:

- contact between a person's bare skin and the bat's head (or any part of the bat while not looking directly at the bat);
- bat found in a room with a sleeping person;
- bat found in a room with an unattended child;
- in some circumstances, bat found close to an unattended child outdoors; and
- bat found in a room with a person under the influence of alcohol or drugs or with other sensory or mental impairment

What should be done if a bat is found indoors?

If the bat is found in any scenarios indicating reasonable probability of exposure, as listed above, it should be captured and tested for rabies. To avoid losing the bat, leave one person in the room watching it with doors and windows closed, while another person goes to get a coffee can, lid, gloves or similar equipment to capture it. Your county health authority may also be contacted for advice on how to capture the bat and submit it for rabies testing. If it is certain the bat did not have contact with a person or pet, the bat can be allowed to leave through an open window. Do not exit the room until you observe the bat leaving through the window. Close the window when the bat leaves.

What are the symptoms of rabies?

Early symptoms include irritability, headache, fever and sometimes itching or pain at the site of exposure. Within days, the disease progresses to paralysis, spasms of the throat muscles, convulsions, delirium and death.

How soon after exposure do symptoms appear?

The incubation period (time between exposure to the virus and the start of symptoms) is variable but is normally two to eight weeks. Incubation periods of over one year have been reported.

What is the treatment for rabies?

First, the wound should be washed with lots of soap and water. Treatment consists of one dose of rabies immune globulin (dosage dependent on body weight) and five doses of rabies vaccine given on days 0, 3, 7, 14 and 28 after exposure. The rabies immune globulin should be given as soon as possible after exposure. The full amount should be put into the wound, if possible. The first dose of vaccine should be given at the same time but in a different site, usually in the upper arm.

What happens if a rabies exposure goes untreated?

Exposure to a rabid animal does not always result in rabies. If treatment is obtained promptly following a rabies exposure, most cases of rabies will be prevented. Untreated cases will invariably result in death.

What can be done to protect a pet from rabies?

All cats, dogs and ferrets should be vaccinated against rabies starting at three months of age and again one year later. After that they should be placed on a one- or three-year schedule, depending on the vaccine used, for regular booster shots.

Why is pet vaccination important?

Pet vaccination is important because vaccinated pets act as a barrier between wild animals and people to keep the rabies virus from spreading.

What should be done if a vaccinated pet fights with another animal?

Any time your pet fights with a wild animal, or another pet, contact your county health authority for advice on what to do. Even though your pet has been vaccinated, a booster dose of rabies vaccine may be needed within five days of the incident. If your pet fought with a known or suspect-rabid animal this will keep your pet from getting rabies as a result of the current incident.

What can be done to prevent the spread of rabies?

Exposure to rabies may be minimized by:

- removing all stray dogs and cats;
- having all pets vaccinated and keeping them up-to-date on their vaccinations; and
- avoiding contact with all wild animals, especially those acting abnormally.

To control the spread of rabies in wild animals such as raccoons, the New York State Department of Health oversees projects to distribute a special bait containing rabies vaccine. Baits are placed in wooded areas in order to immunize raccoons against rabies - an effort to reduce the spread of rabies in the wildlife population.

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Respiratory Syncytial Virus Infection

What is respiratory syncytial virus infection?

Respiratory syncytial virus, or RSV, infection is a respiratory illness caused by a virus.

Who gets RSV infection?

Anyone can be infected, but RSV most often causes serious illness in infants and very young children. The virus can also cause serious illness in elderly people and those with a weakened immune system.

When do RSV infections occur?

RSV infections typically occur during the fall and winter.

How is RSV spread?

RSV is spread through contact with droplets from the nose and throat of infected people when they cough and sneeze. RSV can also spread through dried respiratory secretions on bedclothes and similar items.

What are the symptoms of RSV infection?

Typical symptoms resemble the common cold. However, RSV infection can also result in pneumonia, especially in the very young, the very old or those with weakened immune systems. However, mild or unapparent illness may occur. Symptoms may persist for a few days to a number of weeks.

How soon after exposure do symptoms appear?

Symptoms generally begin four to six days after exposure. Symptoms generally develop slowly over a period of several days. The contagious period is usually less than 10 days after symptoms begin, but occasionally is longer.

How is RSV infection diagnosed?

RSV is usually diagnosed from the appearance of typical symptoms. The use of specific laboratory tests is often limited to cases of severe illness and to special outbreak investigations.

What is the treatment for RSV infection?

A medication called ribavirin is effective against RSV infection if begun in the first few days after symptoms appear. Because RSV infection is often resolved on its own, treatment of mild symptoms is not necessary for most people. Antibiotics are not effective treatments for viral illnesses such as RSV infection (although in certain patients, antibiotics may be used to treat bacterial infections which have complicated the RSV infection in that patient).

Does past infection with RSV make a person immune?

Immunity after RSV infection does occur, but is not lifelong. Repeat infections are known to occur, although they may be milder. The duration is unknown.

What can be done to prevent the spread of RSV?

At this time, two products that contain RSV antibodies are available to prevent RSV infection. These products are given once a month during the RSV season and are recommended for certain high-risk children. When RSV infections are noted in a facility such as a hospital or nursing home, contact isolation (to minimize person-to-person spread) and hand washing by health care workers have been shown to limit spread of the virus. As with any respiratory illness, all people should cover their face when coughing and sneezing.

Ringworm

What is ringworm?

Ringworm is a skin infection caused by a fungus that can affect the scalp, skin, fingers, toe nails or foot.

Who gets ringworm?

Anyone can get ringworm. Children may be more susceptible to certain types of ringworm than adults.

How are ringworm infections spread?

Transmission of these fungal agents can occur by direct skin-to-skin contact with infected people or pets or indirectly by contact with items such as barber clippers, hair from infected people, shower stalls or floors.

What are the symptoms of ringworm infections?

Ringworm of the scalp usually begins as a small pimple which becomes larger in size and leaves scaly patches of temporary baldness. Infected hairs become brittle and break off easily. Occasionally, yellowish cuplike crusty areas are seen. With ringworm of the nails, the affected nails become thicker, discolored and brittle, or they become chalky and disintegrate. Ringworm of the body appears as flat, spreading ring-shaped areas. The edge is reddish and may be either dry and scaly or moist and crusted. As it spreads, the center area clears and appears normal. Ringworm of the foot appears as a scaling or cracking of the skin, especially between the toes.

How soon do symptoms appear?

The incubation period is unknown for most of these agents, however ringworm of the scalp is usually seen 10 to 14 days after contact and ringworm of the body is seen four to 10 days after initial contact.

Does infection with ringworm make a person immune?

Since so many species of fungus can cause ringworm, infection with one species will not make a person immune to future infections.

What is the treatment for ringworm infections?

Your doctor may prescribe a fungicidal material to swallow as tablets or powders that can be applied directly to the affected areas. Griseofulvin is commonly prescribed for treating fungus infections.

What can be done to prevent the spread of ringworm?

Towels, hats and clothing of the infected individual should not be shared with others. Young children who are infected should minimize close contact with other children until effectively treated. When multiple cases occur, seek advice from your local health department.

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Rocky Mountain Spotted Fever (tick-borne typhus fever)

What is Rocky Mountain spotted fever?

Rocky Mountain spotted fever (RMSF) is a tick-borne disease caused by a rickettsia (a microbe that differs somewhat from bacteria and virus). Fewer than 50 cases are reported annually in New York state.

Who gets RMSF?

In the eastern United States, children are infected most frequently, while in the western United States, disease incidence is highest among adult males. Disease incidence is directly related to exposure to tick-infested habitats or to infested pets. Most of the cases in New York state have occurred on Long Island.

How is RMSF transmitted?

RMSF is spread by the bite of an infected tick. In New York, the American dog tick (*dermacentor variabilis*) is the most common vector. It can also be transmitted by contamination of the skin with tick blood or feces. Person-to-person spread of RMSF does not occur.

What are the symptoms of RMSF?

RMSF is characterized by a sudden onset of moderate to high fever (which can last for two or three weeks), severe headache, fatigue, deep muscle pain, chills and rash. The rash begins on the legs or arms, may include the soles of the feet or palms of the hands and may spread rapidly to the trunk or rest of the body.

When do symptoms appear?

Symptoms usually appear within two weeks of the bite of an infected tick.

Does past infection with RMSF make a person immune?

One attack probably provides permanent immunity.

What is the treatment for RMSF?

Certain antibiotics such as tetracycline or chloramphenicol may be effective in treating the disease.

What can be done to prevent RMSF?

When in tick-infested habitat - wooded and grassy areas - take special precautions to prevent tick bites, such as wearing light-colored clothing (for easy tick discovery) and tucking pants into socks and shirt into pants. Check after every two to three hours of outdoor activity for ticks on clothing or skin. Brush off any ticks on clothing before skin attachment occurs. A thorough check of body surfaces for attached ticks should be done at the end of the day. If removal of attached ticks occurs within 36 hours, the risk of tick-borne infection is minimal.

Repellents can be effective at reducing bites from ticks that can transmit disease. But their use is not without risk of health effects, especially if repellents are applied in large amounts or improperly. Repellents commonly available to consumers contain the active ingredients DEET (N, N-diethyl-m-toluamide), permethrin, or botanical oils. DEET products have been widely used for many years, but have occasionally been associated with health effects. Skin reactions (particularly at DEET concentrations of 50 percent and above) and eye irritation are the most frequently reported health problems. Products containing permethrin are for use on clothing only, not on skin. Rather than acting as a repellent, permethrin kills ticks and insects that come in contact with treated clothes. Permethrin can cause eye irritation. Insect repellents containing botanical oils, such as oil of geranium, cedar, lemongrass, soy or citronella are also available, but there is limited information on their effectiveness and toxicity. **If you decide to use a repellent, use only what and how much you need for your situation. In addition:**

- Be sure to follow label directions.
- Use repellents only in small amounts, avoiding unnecessary repeat application. Try to reduce the use of repellents by dressing in long sleeves and pants tucked into socks or boots.
- Children may be at greater risk for reactions to repellents, in part, because their exposure may be greater. Do not apply repellents directly to children. Apply to your own hands and then put it on the child.
- Do not apply near eyes, nose or mouth and use sparingly around ears. Do not apply to the hands of small children.
- After returning indoors, wash treated skin with soap and water.

How should a tick be removed?

Grasp the mouthparts with tweezers as close as possible to the attachment (skin) site. Be careful not to squeeze, crush or puncture the body of the tick, which may contain infectious fluids. After removing the tick, thoroughly disinfect the bite site and wash hands. See or call a doctor if there are concerns about incomplete tick removal. Do not attempt to remove ticks by using petroleum jelly, lit cigarettes or other home remedies because these may actually increase the chance of contracting a tick-borne disease. You may want to send the tick to the New York State Health Department's Tick Identification Service, c/o HVCC Central Receiving, 80 Vandenburg Avenue, Troy, NY 12180.

How do I obtain information on a tick?

Tick identification services are available through the New York State Department of Health and some county health departments. The New York State Department of Health Tick Identification Service will tell you the species of the tick, whether it is engorged with blood and, if so, how long it may have been feeding. The Tick Identification Service will also report whether the mouthparts are present (if not, they may have remained in the skin and need to be removed, as you would a splinter). The Tick Identification Service **will not** tell you whether the tick is infected with disease-causing organisms. There is no charge for this service.

If you wish to have a tick identified, place it in a small jar containing rubbing alcohol, seal the container to prevent leakage and complete the Tick Identification Submittal Form. Mail the tick in the sealed container, along with the completed submittal form, to the New York State Health Department's Tick Identification Service, c/o HVCC Central Receiving, 80 Vandenburg Avenue, Troy, NY 12180. Once you send a tick to be identified it will not be returned.

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Rubella (German measles)

What is rubella?

Rubella is a viral disease characterized by slight fever, rash and swollen glands. Most cases are mild.

Who gets rubella?

In unvaccinated populations, rubella is primarily a childhood disease. Where children are well immunized, adolescent and adult infections become more evident. Rubella occurs more frequently in winter and spring.

How is rubella spread?

Rubella is spread by direct contact with nasal or throat secretions of infected individuals.

What are the symptoms of rubella?

Rubella is a mild illness which may present few or no symptoms. Symptoms may include a rash, slight fever, joint aches, headache, discomfort, runny nose and reddened eyes. The lymph nodes just behind the ears and at the back of the neck may swell, causing some soreness and/or pain. The rash, which may be itchy, first appears on the face and progresses from head to foot, lasting about three days. As many as half of all rubella cases occur without a rash.

How soon do symptoms appear?

The incubation period for rubella is 12-23 days; in most cases, symptoms appear within 16-18 days.

When and for how long is a person able to spread rubella?

Rubella may be transmitted from seven days before to seven days after rash onset.

Does past infection with rubella make a person immune?

Yes. Immunity acquired after contracting the disease is usually permanent.

What is the vaccine for rubella?

Rubella vaccine is given on or after a child's first birthday, and is usually given in combination with measles and mumps (MMR) vaccine. Children usually receive the first dose between 12 and 15 months of age and the second dose prior to school entry at four to six years of age.

What can be the effect of not being immunized against rubella?

Rubella infection is dangerous because of its ability to damage an unborn baby. Infection of a pregnant woman may result in a miscarriage, stillbirth or the birth of an infant with abnormalities which may include deafness, cataracts, heart defects, liver and spleen damage and mental retardation. Congenital rubella syndrome (CRS) occurs among at least 25 percent of infants born to women who have had rubella during the first trimester of pregnancy.

What can be done to prevent the spread of rubella?

Maintaining high levels of rubella immunization in the community is critical to controlling the spread. Control of the spread of rubella is needed primarily to prevent the birth defects caused by CRS. Therefore, women of childbearing age should have their immunity determined and receive rubella vaccine if needed. Infected children should not attend school during their infectious period.

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Salmonellosis

What is salmonellosis?

Salmonellosis is a bacterial infection that generally affects the intestinal tract and occasionally the bloodstream. It is one of the more common causes of gastroenteritis with several thousand cases occurring in New York state each year. Most cases occur in the summer months and are seen as single cases, clusters or outbreaks.

Who gets salmonellosis?

Any person can get salmonellosis, but it is recognized more often in infants and children.

How are salmonella bacteria spread?

Salmonella are spread by eating or drinking contaminated food or water or by contact with infected people or animals.

What are the symptoms of salmonellosis?

People exposed to the salmonella may experience mild or severe diarrhea, fever and occasionally vomiting. Bloodstream infections can be quite serious, particularly in the very young or elderly.

How soon after exposure do symptoms appear?

The symptoms generally appear one to three days after exposure.

Where are salmonella found?

Salmonella are widely distributed in our food chain and environment. The organisms often contaminate raw meats, eggs, unpasteurized milk and cheese products. Other sources of exposure may include contact with infected pet turtles, pet chicks, dogs and cats.

For how long can an infected person carry the salmonella germ?

The carrier stage varies from several days to many months. Infants and people who have been treated with oral antibiotics tend to carry the germ longer than others.

Do infected people need to be isolated or excluded from work or school?

Since salmonella are in the feces, only people with active diarrhea who are unable to control their bowel habits (infants, young children, certain handicapped individuals, for example) should be isolated. Most infected people may return to work or school when their stools become formed, provided that they carefully wash their hands after toilet visits. Food handlers, health care workers and children in daycare must obtain the approval of the local or state health department before returning to their routine activities.

What is the treatment for salmonellosis?

Most people with salmonellosis will recover on their own or require fluids to prevent dehydration. Antibiotics and antidiarrhea drugs are generally not recommended for typical cases with intestinal infections.

How can salmonellosis be prevented?

- Always treat raw poultry, beef and pork as if they are contaminated and handle accordingly:
 - Wrap fresh meats in plastic bags at the market to prevent blood from dripping on other foods.
 - Refrigerate foods promptly; minimize holding at room temperature.
 - Cutting boards and counters used for preparation should be washed immediately after use to prevent cross contamination with other foods.
 - Avoid eating raw or undercooked meats.
 - Ensure that the correct internal cooking temperature is reached - particularly when using a microwave.
- Avoid eating raw eggs or undercooking foods containing raw eggs.
- Avoid using raw milk.
- Encourage careful hand washing before and after food preparation.
- Make sure children, particularly those who handle pets, attend to hand washing.
- Do not keep reptiles as pets in homes with immunocompromised persons or young children.

Scabies

What is scabies?

Scabies is a fairly common infectious disease of the skin caused by a mite. Scabies mites burrow into the skin producing pimple-like irritations or burrows.

Who gets scabies?

Scabies infestations can affect people from all socioeconomic levels without regard to age, sex, race or standards of personal hygiene. Clusters of cases, or outbreaks, are occasionally seen in nursing homes, institutions and child care centers.

How is scabies spread?

Scabies mites are transferred by direct skin-to-skin contact. Indirect transfer from undergarments or bedclothes can occur only if these have been contaminated by infected people immediately beforehand. Scabies can also be transmitted during sexual contact.

What are the symptoms of scabies?

The most prominent symptom of scabies is intense itching particularly at night. The areas of the skin most affected by scabies include the webs and sides of the fingers, around the wrists, elbows and armpits, waist, thighs, genitalia, nipples, breasts and lower buttocks.

How soon do symptoms appear?

Symptoms will appear from two to six weeks in people who have not previously been exposed to scabies infestations. People who have had a previous bout with scabies mites may show symptoms within one to four days after subsequent re-exposures.

When and for how long is a person able to spread scabies?

A person is able to spread scabies until mites and eggs are destroyed by treatment.

What is the treatment for scabies?

Skin lotions containing permethrin, lindane or crotamiton are available through a physician's prescription for the treatment of scabies. The lotions are applied to the whole body except the head and neck. Sometimes, itching may persist but should not be regarded as treatment failure or reinfestation. Persons who have had skin contact with an infested person (including family members, roommates, direct care providers and sexual contacts) should also be treated.

What can be done to prevent the spread of scabies?

Avoid physical contact with infested individuals and their belongings, especially clothing and bedding. Health education on the life history of scabies, proper treatment and the need for early diagnosis and treatment of infested individuals and contacts is extremely important.

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Shigellosis

What is shigellosis?

Shigellosis is a bacterial infection affecting the intestinal tract. It is a fairly common disease; 600-800 cases occur in New York state each year. Most cases are seen in the summer and early fall and occur as single cases or outbreaks.

Who gets shigellosis?

Anyone can get shigellosis but it is recognized more often in young children. Those who may be at greater risk include children in daycare centers, foreign travelers to certain countries, institutionalized people and active homosexuals.

How is the shigella germ spread?

Shigella germs are found in the intestinal tract of infected people and is spread by eating or drinking food or water contaminated by an infected person. It can also be spread by direct contact with an infected person.

What are the symptoms?

People exposed to the shigella germ may experience mild or severe diarrhea, often with fever and traces of blood or mucous in the stool. Some infected people may not show any symptoms.

How soon do symptoms appear?

The symptoms may appear one to seven days after exposure but usually within two to three days.

When and for how long is a person able to spread shigellosis?

Most people pass shigella in their feces (stool) for one to two weeks. Certain antibiotics may shorten the carrier phase.

Should infected people be isolated or excluded from school or work?

Since the germ is passed in the feces of an infected person, people with active diarrhea or those who are unable to control their bowel habits should be isolated. Most infected people may return to work or school when their diarrhea ceases, provided that they carefully wash their hands after toilet visits. Food handlers, children in daycare and health care workers must obtain the approval of the local or state health department before returning to their routine activities.

How is shigellosis treated?

Most people with shigellosis will recover on their own. Some may require fluids to prevent dehydration. Antibiotics are occasionally used to treat severe cases or to shorten the carrier phase, which may be important for food handlers, children in daycare or institutionalized individuals.

What can be done to prevent the spread of shigellosis?

Since germs are passed in feces, the single most important prevention activity is careful hand washing after using the toilet.

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Shingles (herpes zoster)

What is shingles?

Shingles is a localized infection due to the varicella-zoster virus, the same virus that causes chickenpox. It occurs only in people who have had chickenpox in the past and represents a reactivation of the dormant varicella virus. Why the virus reactivates in some individuals and not in others is unknown.

Who gets shingles?

The disease is primarily seen in the elderly, but occasionally it occurs in younger individuals. It affects both sexes and all races with equal frequency and occurs sporadically throughout the year.

How is shingles spread?

A person must have already had chickenpox in the past to develop shingles. Contact with an infected individual does not cause another person's dormant virus to reactivate. However, the virus from a shingles patient may cause chickenpox in someone who has not had it before.

What are the symptoms of shingles?

The first sign is often a tingling feeling on the skin, itchiness or a stabbing pain. After several days, a rash appears beginning as a band or patch of raised dots on the side of the trunk or face. It then develops into small, fluid-filled blisters which begin to dry out and crust over within a few days. When the rash is at its peak, symptoms can range from mild itching to extreme and intense pain. The rash and pain usually disappear within three to five weeks.

How soon after infection do symptoms appear?

The virus lies dormant in someone who has had chickenpox in the past. It can reactivate many years later.

When and for how long is a person able to spread shingles?

A person exposed to a patient with shingles will not get shingles but may get chickenpox. The virus is present at the site of the rash and is contagious for a week after the appearance of lesions (blisters).

Does past infection make a person immune?

Yes. Most people who have shingles have only one episode with the disease in their lifetime. Those with impaired immune systems (people with AIDS, cancer or leukemia, for example) may suffer repeated attacks.

What are the complications associated with shingles?

Shingles is not usually dangerous to healthy individuals although it can cause great misery during an attack. Anyone with shingles on the upper half of their face, no matter how mild, should seek medical care at once. There is some danger that the virus could cause damage to the eye resulting in blindness. Complications are rare but may include partial facial paralysis (usually temporary), ear damage or encephalitis (inflammation of the brain).

What is the treatment for shingles?

Most cases of shingles resolve on their own without specific treatment. Two medications available for use by physicians in treating immunocompromised patients are vidarabine and acyclovir.

What can be done prevent the spread of shingles?

Chickenpox must be prevented in order to prevent shingles. A vaccine for chickenpox is now available and it is hoped that immunized individuals will be less likely to develop shingles in later life.

Sporotrichosis

What is sporotrichosis?

Sporotrichosis is a fungal infection, usually of the skin, caused by a microscopic fungus called *Sporothrix schenckii*.

Who gets sporotrichosis?

Anyone can get the disease but people handling thorny plants, sphagnum moss or baled hay contaminated with this particular fungus are at increased risk. Outbreaks have occurred among nursery workers handling sphagnum moss, rose gardeners, children playing on baled hay and greenhouse workers handling barberry thorns contaminated by the fungus.

How is the fungus spread?

The fungus enters the skin through small cuts or pricks from pine needles, thorns or barbs. Fortunately, it is not spread from person to person.

What are the symptoms of sporotrichosis?

The first symptom is a small pink, red or purple painless bump resembling an insect bite. The bump, or lesion, usually appears on the finger, hand or arm where the fungus first entered through a break in the skin. This is followed by the appearance of one or more additional raised bumps or nodules which open and may resemble a boil. Eventually, the skin lesions look like ulcers and are very slow to heal.

How soon after exposure do symptoms appear?

The skin lesions may appear one to 12 weeks after exposure but usually within three weeks.

How is sporotrichosis diagnosed?

Sporotrichosis can be confirmed when a doctor obtains a swab of a freshly opened skin nodule and submits it to a laboratory for fungal culture. The diagnosis can also be verified by a blood or biopsy specimen. It is important for the diagnosis to be confirmed by a doctor so that proper treatment can be provided. As a free service, the New York State Department of Health's Wadsworth Center for Laboratories and Research is available to conduct diagnostic and confirmatory laboratory testing.

What is the treatment for sporotrichosis?

Sporotrichosis is generally treated with iodides taken orally in droplet form, which must be prescribed by a doctor. Treatment is often extended over a number of weeks.

What are the complications associated with sporotrichosis?

The vast majority of the infections are limited to the skin. Cases of joint, lung and central nervous system infection have occurred but are very rare and usually occur only in people with diabetes or other disorders of the immune system.

How can sporotrichosis be prevented?

Control measures include wearing gloves and long sleeves when handling pine seedlings, rose bushes, hay bales or other plants that may cause minor skin breaks. In addition, it may be prudent to use pine seedling packing materials other than sphagnum moss, which has been implicated as a source of the fungus in a number of outbreaks.

Streptococcal Infections (invasive group A strep)

What is group A streptococcus (GAS)?

Group A streptococci are bacteria commonly found in the throat and on the skin. The vast majority of GAS infections are relatively mild illnesses, such as strep throat and impetigo. Occasionally, however, these bacteria can cause much more severe and even life threatening diseases such as necrotizing fasciitis (occasionally described as “the flesh-eating bacteria”) and streptococcal toxic shock syndrome (STSS). In addition, people may carry group A streptococci in the throat or on the skin and have no symptoms of disease.

How are group A streptococci spread?

These bacteria are spread by direct contact with nose and throat discharges of an infected individual or with infected skin lesions. The risk of spread is greatest when an individual is ill, such as when people have strep throat or an infected wound. Individuals who carry the bacteria but have no symptoms are much less contagious. Treatment of an infected person with an appropriate antibiotic for 24 hours or longer eliminates contagiousness. However, it is important to complete the entire course of antibiotics as prescribed. Household items like plates, cups, toys, etc., do not play a major role in disease transmission.

What is invasive group A streptococcal disease?

Invasive GAS disease is a severe and sometimes life threatening infection in which the bacteria have invaded parts of the body, such as the blood, deep muscle and fat tissue or the lungs. Two of the most severe, but least common, forms of invasive GAS disease are called necrotizing fasciitis (infection of muscle and fat tissue) and streptococcal toxic shock syndrome (a rapidly progressing infection causing low blood pressure/shock and injury to organs such as the kidneys, liver and lungs). Approximately 20 percent of patients with necrotizing fasciitis and 60 percent with STSS die. Only about 10-15 percent of patients with other forms of invasive group A streptococcal disease die.

How common is invasive group A streptococcal disease?

Approximately 10,000-15,000 cases of invasive GAS disease occur in the United States each year, resulting in more than 2,000 deaths. The Centers for Disease Control and Prevention estimates there are 500-1,500 cases of necrotizing fasciitis and 2,000-3,000 cases of STSS each year in the United States. In contrast, there are several million cases of strep throat and impetigo annually. Clusters of cases or outbreaks of invasive GAS have not been reported in any schools or communities in New York state.

Why does invasive group A streptococcal disease occur?

Invasive group A streptococcal infections occur when the bacteria gets past the defenses of the person who is infected. This may occur when a person has sores or other breaks in the skin that allow the bacteria to get into the tissue. Health conditions that decrease a person's immunity to infection also make invasive disease more likely. In addition, there are certain strains of GAS that are more likely to cause severe disease than others. The reason why some strains will cause more severe illness is not totally clear but may involve the production of substances (toxins) that cause shock and organ damage and of enzymes that cause tissue destruction.

Who is most at risk of invasive group A streptococcal disease?

Few people who come in contact with a virulent strain of GAS will develop invasive GAS disease; most will have a routine throat or skin infection and some may have no symptoms whatsoever. Although healthy people can get invasive GAS disease, people with chronic illnesses like cancer, diabetes and kidney dialysis, and those who use medications such as steroids, are at higher risk. In addition, breaks in the skin, like cuts, surgical wounds or chickenpox, may provide an opportunity for the bacteria to enter the body.

Can invasive group A streptococcal disease be treated?

Group A streptococcus bacteria can be treated with common, inexpensive antibiotics. Penicillin is the drug of choice for both mild and severe disease. For penicillin-allergic patients with mild illness, erythromycin can be used, although occasional resistance has been seen. Clindamycin may be used to treat penicillin-allergic patients with more severe illness and can be added to the treatment in cases of necrotizing fasciitis or STSS. Certain other antibiotics also are effective. In addition to antibiotics, supportive care in an intensive care unit and sometimes surgery are necessary with these diseases. Early treatment may reduce the risk of death although, unfortunately, even appropriate therapy does not prevent death in every case.

Should contacts of individuals with invasive group A streptococcal disease be tested and treated?

The risk of secondary cases of invasive GAS disease among persons with casual contact to a case is very small. However, there are occasional reports of close contacts such as family members developing severe disease. Recommendations are being developed to describe the circumstances under which close contacts should be considered for preventive antibiotics. In general, if household contacts are in good health, they should be watched for signs of GAS infection and need not receive preventive antibiotics. However, those who are at higher risk of invasive disease if infected (persons with diabetes, cancer, chronic heart disease, alcoholism, etc.), should be considered for preventive antibiotics under certain circumstances.

What can be done to help prevent invasive group A streptococcal infections?

The spread of all types of group A streptococcal infections may be reduced by good hand washing, especially after coughing and sneezing, and before preparing foods and before eating. Persons with sore throats should be seen by a physician who can perform tests to find out whether it is strep throat; if so, one should stay home from work, school or daycare until after 24 hours or more after taking an antibiotic. All wounds should be kept clean. Wounds should be watched for possible signs of infection which include increasing redness, swelling and pain at the wound site. If these signs occur, especially in a person who also has a fever, consult a doctor immediately.

What are the early signs and symptoms of necrotizing fasciitis and streptococcal toxic shock syndrome?

Early signs and symptoms of necrotizing fasciitis include fever, severe pain and swelling, and redness at the wound site. Early signs and symptoms of STSS may include fever, dizziness, confusion, low blood pressure, rash and abdominal pain.

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Swimmer's Itch (cercarial dermatitis, schistosome dermatitis)

What is swimmer's itch?

Swimmer's itch is a skin rash caused by certain parasites of birds and mammals. These parasites are released from infected snails and migrate through waters, including those used for recreational swimming. Cases of swimmer's itch have been reported from all parts of New York state.

Who gets swimmer's itch?

People who swim or wade in infested water may experience this itching rash. All age groups and both sexes can be involved, but children are most often infected because they are more likely to swim or wade in the water and play on the beach as the water evaporates from the skin.

How is swimmer's itch spread?

The victim may get the infection by swimming or wading in infested water and then allowing water to evaporate off the skin rather than regularly drying the skin with a towel. Person-to-person spread does not occur.

What are the symptoms of swimmer's itch?

Whenever infested water is allowed to evaporate off the skin, an initial tingling sensation may be felt associated with the penetration of the parasite into the skin. The itching will subside for 10-15 hours and may then become extremely intense. This itching stage usually disappears within a week.

How soon do the symptoms begin?

A victim's first exposure to infested water may not result in the itchy rash. Repeated exposure increases a person's sensitivity to the parasite and increases the likelihood of rash development. Symptoms may appear within one to two hours of exposure.

What is the treatment for swimmer's itch?

While all cases do not require treatment, some people may seek relief by applying specific skin lotions or creams to minimize the itching.

What can be done to prevent the spread of swimmer's itch?

Toweling off after swimming or wading in infested water can be very helpful in preventing rash development. Communities may apply through the New York State Department of Environmental Conservation for a permit to apply specific chemicals to kill the migrating snails. Copper sulfate or copper carbonate materials can be applied by boat around popular bathing areas. If properly timed, these applications may prevent the annual migration of infested snails into swimming areas.

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Tetanus (lockjaw)

What is tetanus?

Tetanus, commonly called lockjaw, is a bacterial disease that affects the nervous system. As a result of widespread immunization, tetanus is now a rare disease.

Who gets tetanus?

Tetanus occurs more often in older people and in agricultural workers for whom contact with animal manure is more likely and immunization is inadequate.

How is tetanus spread?

Tetanus is contracted through a wound which becomes contaminated with the organism. It is not transmitted from person to person.

Where is the tetanus germ found?

The tetanus germ is present throughout the environment and is commonly found in soil contaminated with manure.

What are the symptoms of tetanus?

A common first sign of tetanus is muscular stiffness in the jaw (lockjaw), followed by stiffness of the neck, difficulty in swallowing, rigidity of abdominal muscles, spasms, sweating and fever.

How soon after infection do symptoms occur?

The incubation period is usually eight days but may range from three days to three weeks. Shorter incubation periods are associated with more heavily contaminated wounds.

Does past infection with tetanus make a person immune?

Recovery from tetanus may not result in immunity. Second attacks can occur and immunization is indicated after recovery.

What is the treatment for tetanus?

Wounds should be thoroughly cleaned and dead or devitalized tissue removed. If the patient has not had a tetanus toxoid booster in the previous 10 years, a single booster injection should be administered on the day of injury. For severe wounds, a booster may be given if more than five years have elapsed since the last dose. Tetanus immune globulin (TIG), antitoxin or antibiotics may be given if the patient has not been previously immunized with a series of at least three doses of toxoid.

What are the complications associated with tetanus?

Complications include spasm of the vocal cords and/or spasms of the respiratory muscles causing interference with breathing. Other complications include fractures of the spine or long bones, hypertension, abnormal heartbeats, coma, generalized infection, clotting in the blood vessels of the lung, pneumonia and death.

Is there a vaccine for tetanus?

An effective vaccine called tetanus toxoid has been available for many years. Tetanus toxoid in combination with diphtheria toxoid and acellular pertussis vaccine (DTaP) is given at two, four, six and 12-15 months of age, and between four and six years of age. Children who are seven years of age or older should receive Td (tetanus and diphtheria) toxoid. A tetanus booster shot is recommended every 10 years.

What can be done to prevent the spread of tetanus?

The single most important preventive measure is to maintain a high level of immunization in the community.

Trichinosis

What is trichinosis?

Trichinosis is a food-borne disease caused by a microscopic parasite.

Who gets trichinosis?

Anyone who eats undercooked meat of infected animals can develop trichinosis. Pork products are implicated more often than other meats.

How is trichinosis spread?

Animals such as pigs, dogs, cats, rats and many wild animals (including fox, wolf and polar bear) may harbor the parasite. When humans eat infected pork that has been improperly cooked, they become infected. Improperly cooked wild animal meat may also be responsible for infecting humans. Person-to-person spread does not occur.

What are the symptoms of trichinosis?

The symptoms usually start with fever, muscle soreness, pain and swelling around the eyes. Thirst, profuse sweating, chills, weakness and tiredness may develop. Chest pain may be experienced since the parasite may become imbedded in the diaphragm (the thin muscle separating the lungs from abdominal organs).

How soon after infection do symptoms appear?

The incubation period varies depending upon the number of parasites in the meat and the amount eaten. It can range from five to 45 days but is usually 10 to 14 days.

Does past infection with trichinosis make a person immune?

Partial immunity may develop from infection.

What is the treatment for trichinosis?

A drug called mebendazole is used in treatment.

What can be the effect of not being treated for trichinosis?

Failure to treat could be fatal.

What can be done to prevent the spread of trichinosis?

The best prevention is to make sure that pork products are properly cooked. The desirable temperature is at least 150 degrees Fahrenheit. Storing infected meat in a freezer with a temperature no higher than -13 degrees Fahrenheit for 10 days will also destroy the parasite.

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Tuberculosis (TB)

What is tuberculosis?

Tuberculosis is a bacterial disease usually affecting the lungs (pulmonary TB). Other parts of the body can also be affected, for example lymph nodes, kidneys, bones, joints, etc. (extrapulmonary TB). Approximately 1,800 cases are reported each year in New York state.

Who gets tuberculosis?

Tuberculosis can affect anyone of any age. People with weakened immune systems are at increased risk.

How is tuberculosis spread?

Tuberculosis is spread through the air when a person with untreated pulmonary TB coughs or sneezes. Prolonged exposure to a person with untreated TB usually is necessary for infection to occur.

What is the difference between latent tuberculosis infection and tuberculosis disease?

Latent tuberculosis infection (LTBI) means the person has the TB germ in their body (usually lungs) but has yet to develop obvious symptoms. In latent TB, the person has a significant reaction to the Mantoux skin test with no symptoms of tuberculosis and no TB organisms found in the sputum. Tuberculosis disease indicates the person has symptoms, a significant reaction to a Mantoux skin test and organisms found in the sputum. In order to spread the TB germs, a person must have TB disease. Having latent TB infection is not enough to spread the germ. Tuberculosis may last for a lifetime as an infection, never developing into disease.

What are the symptoms of tuberculosis?

The symptoms of TB include a low-grade fever, night sweats, fatigue, weight loss and a persistent cough. Some people may not have obvious symptoms.

How soon do symptoms appear?

Most people infected with the germ that causes TB never develop active TB. If active TB does develop, it can occur two to three months after infection or years later. The risk of active disease lessens as time passes.

When and for how long is a person able to spread tuberculosis?

A person with TB disease may remain contagious until he/she has been on appropriate treatment for several weeks. However, a person with latent TB infection, but not disease, cannot spread the infection to others, since there are no TB germs in the sputum.

What is the treatment for tuberculosis?

People with latent TB infection should be evaluated for a course of preventive therapy, which usually includes taking antituberculosis medication for several months. People with active TB disease must complete a course of treatment for six months or more. Initial treatment includes at least four anti-TB drugs and medications may be altered based on laboratory test results. The exact medication plan must be determined by a physician. Directly observed therapy (DOT) programs are recommended for all TB patients to help them complete their therapy.

What can be the effect of not being treated for tuberculosis?

In addition to spreading the disease to others, an untreated person may become severely ill or die.

What can be done to prevent the spread of tuberculosis?

The most important way to stop the spread of tuberculosis is for TB patients to cover the mouth and nose when coughing and to take all the TB medicine exactly as prescribed by the physician.

What is multiple drug resistant tuberculosis (MDR-TB)?

This refers to the ability of some strains of TB to grow and multiply even in the presence of certain drugs that would normally kill them.

Who gets MDR-TB?

TB patients with drug sensitive disease may develop drug resistant tuberculosis if they fail to take antituberculosis medications as prescribed, as well as TB patients who have been prescribed an ineffective treatment plan. TB cases diseased with MDR-TB can transmit the drug resistant infection to other individuals.

What is the treatment for multiple drug resistant tuberculosis?

For patients with disease due to drug resistant organisms, expert consultation from a specialist in treating drug resistant TB should be obtained. Patients with drug resistant disease should be treated with drugs to which their organisms are susceptible. The effectiveness of treatment for latent infection with MDR-TB is uncertain.

What can be done to prevent the spread of MDR-TB?

Ensuring people with MDR-TB take all their medication and teaching patients to cover their mouth and nose when coughing and sneezing can reduce the risk of spread of MDR-TB. In addition, directly observed therapy should be used to ensure patients complete the recommended course of therapy.

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Tularemia

What is tularemia?

Tularemia is a bacterial disease associated with both animals and man. Although many wild and domestic animals have been infected, the rabbit is most often involved in disease outbreaks. Tularemia in humans is relatively rare in New York state.

Who gets tularemia?

Hunters or other people who spend a great deal of time out of doors are at a greater risk of exposure to tularemia than people with other occupational or recreational interests. Other groups at increased risk include veterinarians and those working with birds of prey (by handling rabbits as food for the bird).

How is tularemia spread?

Many routes of human exposure to tularemia are known to exist. The common routes include inoculation of the skin or mucous membranes with blood or tissue while handling infected animals, bites from infected deer flies or ticks, or handling or eating insufficiently cooked rabbit meat. Less common means of spread are drinking contaminated water, inhaling dust from contaminated soil or handling contaminated pelts or paws of animals.

What are the symptoms of tularemia?

The symptoms of tularemia are varied and depend upon where the organism enters the body. When it enters through the skin, tularemia can be recognized by the presence of a lesion and swollen glands. Ingestion of the organism may produce a throat infection, intestinal pain, diarrhea and vomiting. Inhalation of the organism may produce a fever alone or fever combined with a pneumonia-like illness.

How soon do symptoms appear?

Symptoms generally appear between two and 10 days, but usually after three days.

What is the treatment for tularemia?

Certain antibiotics such as streptomycin are effective in treating tularemia. Others such as gentamycin and tobramycin have also been reported to be effective.

Does past infection with tularemia make a person immune?

Long-term immunity will follow recovery from tularemia, but reinfection has been reported.

What can be done to prevent the spread of tularemia?

Rubber gloves should be worn when skinning or handling animals, especially rabbits. Wild rabbit and rodent meat should be cooked thoroughly before eating. Avoid bites of deer flies and ticks and avoid drinking untreated water.

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Typhoid Fever

What is typhoid fever?

Typhoid fever is a bacterial infection of the intestinal tract and occasionally the bloodstream. It is an uncommon disease with only 30-50 cases occurring in New York each year. Most of the cases are acquired during foreign travel to underdeveloped countries. The germ that causes typhoid is a unique human strain of salmonella called *Salmonella typhi*. Outbreaks are rare.

Who gets typhoid fever?

Anyone can get typhoid fever but the greatest risk exists to travelers visiting countries where the disease is common. Occasionally, local cases can be traced to exposure to a person who is a chronic carrier.

How is the germ spread?

Typhoid germs are passed in the feces and, to some extent, the urine of infected people. The germs are spread by eating or drinking water or foods contaminated by feces from the infected individual.

What are the symptoms?

Symptoms may be mild or severe and may include fever, headache, constipation or diarrhea, rose-colored spots on the trunk and an enlarged spleen and liver. Relapses are common. Fatalities are fewer than one percent with antibiotic treatment.

How soon do symptoms appear?

Symptoms generally appear one to three weeks after exposure.

For how long can an infected person carry the typhoid germ?

The carrier stage varies from a number of days to years. Only about three percent of cases go on to become lifelong carriers of the germ and this tends to occur more often in adults than in children.

How is typhoid treated?

Specific antibiotics such as chloramphenicol, ampicillin or ciprofloxacin are often used to treat cases of typhoid.

Should infected people be isolated?

Because the germ is passed in the feces of infected people, only people with active diarrhea who are unable to control their bowel habits (infants, certain handicapped individuals) should be isolated. Most infected people may return to work or school when they have recovered, provided that they carefully wash hands after toilet visits. Children in daycare, health care workers and persons in other sensitive settings must obtain the approval of the local or state health department before returning to their routine activities. Food handlers may not return to work until three consecutive negative stool cultures are confirmed.

Is there a vaccine for typhoid?

A vaccine is available but is generally reserved for people traveling to underdeveloped countries where significant exposure may occur. Strict attention to food and water precautions while traveling to such countries is the most effective preventive method.

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Vancomycin Resistant Enterococcus (VRE)

What is VRE?

Enterococci are bacteria that are naturally present in the intestinal tract of all people. Vancomycin is an antibiotic to which some strains of enterococci have become resistant. These resistant strains are referred to as VRE.

Are VRE infections serious?

In general, enterococci are not very harmful or virulent. This applies to both antibiotic-resistant as well as nonresistant or sensitive strains. However, when VRE infects the urinary tract, surgical wounds or the bloodstream of hospitalized patients, it may be difficult to treat and, occasionally, may be life threatening. New antibiotics to treat VRE are under development.

Who gets VRE?

Serious VRE infections usually occur in hospitalized patients with serious underlying illnesses such as cancer, blood disorders, kidney disease or immune deficiencies. People in good health are not at risk of infection, but health care workers may play a role in transmitting the organism if careful hand washing and other infection control precautions are not practiced.

How is VRE spread?

VRE is usually spread by direct contact with hands, environmental surfaces or medical equipment that has been contaminated by the feces of an infected person.

What type of prevention is needed when caring for patients with VRE?

When providing care in a private home, hospital or nursing home, health care workers should use disposable gloves and wash their hands with an antibacterial soap after caring for a person with VRE. A disposable gown should also be used if the type of care involves washing or turning the patient, or changing diapers. Routine cleaning of bed rails, toilets and commodes with a bleach solution or hospital-grade disinfectant is also important. In the hospital setting, equipment such as rectal thermometers and blood pressure cuffs should be assigned solely to the infected patient.

Are special precautions needed for home care of patients with VRE?

Standard precautions including hand washing and gloving should be followed. Otherwise, healthy household members are not at risk of VRE infection. Dishes and utensils can be washed in a dishwasher or with warm soapy water and rinsed. Bed linen and clothing can be washed in a washing machine using a standard detergent for clothing.

Can nursing homes or hospitals refuse to accept patients with VRE?

No. Such discrimination is unnecessary and may be illegal. Nursing homes and hospitals are expected to follow state and federal guidelines for VRE patients which include standard precautions and proper room assignment.

Where can I get further information on VRE?

For general information, contact the New York State Department of Health, Bureau of Communicable Disease Control, at (518) 473-4439. Patients in hospitals or nursing homes may contact the facility's infection control nurse.

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Viral Meningitis (nonbacterial meningitis)

What is viral meningitis?

Viral meningitis is an infection of the meninges (a thin lining covering the brain and spinal cord) by any one of a number of different viruses. It is a fairly common disease; 500-700 cases are reported each year in New York state. Almost all of the cases occur as single, isolated events. Outbreaks are rare.

Who gets viral meningitis?

Anyone can get viral meningitis but it occurs most often in children.

Which viruses cause this form of meningitis?

Approximately half of the cases in the United States are due to common enteroviruses (intestinal). Occasionally, children will have viral meningitis associated with mumps or herpes virus infection. Mosquito-borne viruses also account for a few cases each year. In many cases, the specific virus cannot be identified.

How are the viruses that cause viral meningitis spread?

Because a number of different viruses are capable of causing viral meningitis, the manner in which the virus is spread depends upon the type of virus involved. Some are spread by person-to-person contact; others can be spread by insects.

What are the symptoms?

The symptoms may include fever, headache, stiff neck and fatigue. Rash, sore throat and intestinal symptoms may also occur.

How soon do symptoms appear?

Symptoms generally appear within one week of exposure.

Is a person with viral meningitis contagious?

Some of the enteroviruses that cause viral meningitis are contagious while others, such as mosquito-borne viruses, cannot be spread from person to person. Fortunately, most people exposed to these viruses experience mild or no symptoms. Most people are exposed to these viruses at some time in their lives, but few actually develop meningitis.

Should a person with viral meningitis be isolated?

Strict isolation is not necessary. Since most cases are due to enteroviruses that may be passed in the stool, people diagnosed with viral meningitis should be instructed to thoroughly wash their hands after using the toilet.

How is viral meningitis treated?

There are no specific medicines or antibiotics used to treat viral meningitis.

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West Nile Virus (WNV)

What is West Nile virus?

WNV is a mosquito-borne infection that can cause serious illness, and in some cases, death. Although a person's chances of getting sick are small, there are some simple steps you can take to reduce your risk of being bitten by mosquitoes.

What are the symptoms of WNV?

Most people who are infected with WNV will not have any type of illness. It is estimated that 20 percent of the people who become infected will develop West Nile fever: mild symptoms, including fever, headache and body aches, occasionally with a skin rash and swollen lymph glands. In many individuals, these symptoms are so mild that they go unnoticed or undetected.

The symptoms of severe infection (West Nile encephalitis or meningitis) can include headache, high fever, neck stiffness, muscle weakness, stupor, disorientation, tremors, convulsions, paralysis and coma. It is estimated that one in 150 persons infected with the WNV will develop the more severe form of the disease. Usually, symptoms occur from three to 14 days after exposure. There is no specific treatment for viral infections, other than to treat the symptoms and provide supportive care.

Who is at risk for getting WNV?

All residents of areas where virus activity has been identified are at risk of getting WNV; persons over 50 years of age are at the highest risk for severe disease.

How is WNV transmitted?

WNV is primarily transmitted through the bite of an infected mosquito. Over 30 species of mosquitoes have been infected nationwide. WNV has been transmitted by blood transfusion or organ transplantation in a small number of cases. As a result, U. S. blood collection agencies are screening blood donations for the presence of the virus.

These transfusion- and transplant-related cases make up a small percentage of those infected with WNV. Although persons needing blood transfusions or organ transplants should be aware of the risk of WNV infection, the benefits of receiving needed transfusions or transplants outweigh the potential risk for infection.

Transplacental transmission (pregnant woman to unborn child) and transmission through breast-feeding have also been documented. The number of these cases is small. Pregnant women should consult their health care provider for more information.

Do all mosquitoes transmit disease?

No. Most mosquitoes do not transmit disease. While there are about 70 different species of mosquitoes in New York state, only certain species have been associated with WNV.

Where do mosquitoes live and breed?

Mosquitoes lay their eggs in moist areas, such as standing water. The eggs become larvae that remain in the water until the adults mature and fly off. Weeds, tall grass and shrubbery provide an outdoor home for adult mosquitoes. They can also enter houses through unscreened windows and doors or broken screens. Many mosquitoes will breed in containers that hold water, such as flowerpots or discarded tires.

When are mosquitoes most active?

Some mosquitoes are active between dusk and dawn, when the air is calm. However, others will feed at any time of day. Mosquitoes prefer a warm, moist environment. They are active from early summer until late fall in New York state. In southern states that have a warm year-round climate, mosquitoes that transmit WNV are active year-round. New Yorkers should take measures to protect themselves from mosquito bites when traveling to these states.

Which birds can carry WNV?

In New York state, most WNV-positive birds have been American crows. The state Health Department is using dead crow sightings to track WNV, so it is important to report any dead crows to your local health department or to the toll-free dead bird hotline, 1-866-537-BIRD (2473). Not all dead crows need to be tested for WNV. If the bird is not going to be collected, you may dispose of it. Wear thick gloves, double bag the bird and place it in the trash. Barehanded contact with dead animals should always be avoided.

Can my pet be infected?

Pets occasionally get WNV from mosquito bites, but very seldom get sick. Horses are more susceptible to serious illness from WNV than are dogs and cats. Natural infection of a pet by contacting or eating an infected dead bird has not been documented.

How can I protect myself and my family?

To reduce the mosquito population around your home and property, reduce or eliminate all standing water:

- Dispose of tin cans, plastic containers, ceramic pots or similar water-holding containers.
- Dispose of used tires. Used tires are a significant mosquito breeding site. Call your local landfill or department of public works to find out how to dispose of them properly.
- Drill holes in the bottoms of recycling containers that are kept outdoors.
- Make sure roof gutters drain properly and clean clogged gutters in the spring and fall.
- Remove leaf debris from yards and gardens.
- Turn over wading pools and wheelbarrows when not in use.
- Change the water in birdbaths twice weekly.
- Clean vegetation and debris from edges of ponds.
- Clean and chlorinate swimming pools, outdoor saunas and hot tubs.
- Drain water from pool covers.
- Use landscaping to eliminate standing water that collects on your property.

Should we stay indoors?

It is not necessary to limit outdoor activities. However, you can and should try to reduce your risk of being bitten by mosquitoes. In addition to reducing standing water in your yard, make sure all windows and doors have screens and that all screens are in good repair. If WNV is found in your area:

- Wear shoes and socks, long pants and a long-sleeved shirt when outdoors for long periods of time, or when mosquitoes are most active.
- Consider using mosquito repellent, according to directions, when it is necessary to be outdoors when mosquitoes are biting.

What is being done in my community to control mosquitoes?

The New York State Department of Health, along with other state agencies, local health departments, colleges and environmental groups, has prepared a plan to address issues related to WNV in the state and has devised a preventive strategy to minimize the impact. Local communities are implementing various control measures based on geographic location and level of risk. For more information regarding activities in your specific area, contact your local health department or visit the department's Web site at <http://www.health.state.ny.us> or write: New York State Department of Health, Fight the Bite, Box 2000, Albany, NY 12220. For environmental health information, call 1-800-458-1158.

Yellow Fever (jungle yellow fever, urban yellow fever)

What is yellow fever?

Yellow fever is a mosquito-borne viral disease. The disease occurs in tropical and subtropical areas.

Who gets yellow fever?

This disease can affect both sexes, all ages and races. Jungle yellow fever, of tropical Central and South America, occurs predominantly among adult males 20 to 40 years old who are exposed in the tropical forests.

How is yellow fever spread?

A certain type of mosquito, *Aedes aegypti*, is most often responsible for transmitting the virus. These mosquitoes are no longer found naturally in New York state.

What are the symptoms of yellow fever?

Initial symptoms may be dengue-like and include fever, headache, vomiting and backache. As the disease progresses, the pulse slows and weakens, and bleeding of the gums and bloody urine occur. Jaundice may also occur.

How soon do symptoms appear?

Symptoms occur within three to six days after exposure.

Does past infection with yellow fever make a person immune?

Yes. People who have had yellow fever develop lifelong immunity.

What is the treatment for yellow fever?

There is no specific treatment for yellow fever. People traveling to areas where yellow fever may exist should be immunized.

How can yellow fever be prevented?

Since transmission of yellow fever no longer occurs within the United States, it is important for travelers to be immunized prior to visiting areas where yellow fever exists.

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Yersiniosis

What is yersiniosis?

Yersiniosis is a bacterial disease that generally affects the intestinal tract. It is a relatively uncommon disease and usually occurs as a single isolated event. Occasional outbreaks have been reported due to a common exposure.

Is it a new disease?

No. The germs that cause yersiniosis have been around for many years. Only in recent years has it been recognized as an important, although uncommon, infection. Because it is uncommon, many laboratories do not routinely perform the specific tests needed to identify it.

Who gets it?

Any person can get yersiniosis but it occurs more often in children.

How is it spread?

The *Yersinia* germ is spread by eating or drinking contaminated food or water or by contact with an infected person or animal.

What are the symptoms?

Infected people may experience mild or severe diarrhea, fever and abdominal cramps. Sometimes *Yersinia* infection may mimic appendicitis.

How soon do symptoms appear?

Symptoms generally appear three to seven days after exposure.

Where are the *Yersinia* germs found?

Animals are the main source of *Yersinia*. Fecal wastes from animals (particularly pigs) may contaminate water, milk and foods and become a source of infection for people or other animals. The germ has been found in pork chitterlings, raw milk, lakes and streams, ice cream, improperly pasteurized chocolate milk, tofu, shellfish and wild and domestic animals.

How long can an infected person carry the germ?

The germ is passed in the feces during the time the person is experiencing diarrhea and in some cases for a few weeks or months afterward. For this reason, infected people must be very careful to thoroughly wash their hands after each toilet visit.

How is yersiniosis treated?

Most cases recover on their own without treatment. Those with severe symptoms or bloodstream infections are generally treated with antibiotics.

How can yersiniosis be prevented?

Avoid drinking raw milk and improperly treated surface water. Use appropriate precautions when handling meat products so as to avoid cross contamination from raw foods to cooked or ready-to-eat foods. Thoroughly wash food contact surfaces and hands before and after food preparation.

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