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# **Acute Flaccid Myelitis (AFM)**

As of November 15, 2022, IDPH is reporting the following number of patients under investigation during the given year and the number of cases that are confirmed, probable, and not cases according to the Centers for Disease Control and Prevention (CDC) after review of the case information provided. IDPH is continually working with the health care providers and local health departments to collect necessary information to send to the CDC for AFM case classification.

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\*The PUI number is the total number investigated in the given year, and includes those that are confirmed, probable, and not cases. \*\*Reference the Case Definitions for a description of confirmed and probable case classifications. Those determined to not be cases by CDC are those that either did not meet the case classification or those we did not receive adequate information for determining case classification.

\*\*\*CDC will make the final determination on AFM classifications and numbers are subject to change.\*\*\*

## What is Acute Flaccid Myelitis?

Acute flaccid myelitis (AFM) is a rare but serious condition that affects the nervous system, specifically the spinal cord, causing the muscles and reflexes in the body to work abnormally. This type of condition is not new. Anyone can get AFM or neurologic conditions like it. There are different possible causes, such as viruses, toxins, and genetic disorders.

# What are the signs and symptoms?

Most patients will have sudden onset of limb weakness and loss of muscle tone and reflexes. Some patients also will experience:

Numbness or tingling is rare in patients with AFM, though some patients have pain in their arms or legs. Some patients with AFM may be unable to pass urine. The most severe symptom of AFM is respiratory failure that can happen when the muscles involved with breathing become weak. This can require urgent ventilator support (breathing machines).

If you or your child develops any of these symptoms, you should seek medical care right away.

#### What causes AFM?

Acute flaccid myelitis can be caused by a variety of pathogens, including several viruses:

AFM is one of a number of conditions that can result in neurologic illness with limb weakness. Such illnesses can result from a variety of causes, including viral infections, environmental toxins, genetic disorders, and Guillain-Barre syndrome, a neurologic disorder caused by an abnormal immune response that attacks the body's nerves. Oftentimes, however, despite extensive laboratory testing, a cause for AFM is unable to be identified.

#### How is AFM treated?

There is no specific treatment for AFM, but a neurologist may recommend certain interventions on a case-by-case basis.

#### Surveillance

The Illinois Department of Public Health (IDPH) is re-emphasizing the importance of continued vigilance in identifying cases of AFM among all age groups, irrespective of enterovirus status. Reporting of these cases will help public health officials monitor for increases in this illness and better understand potential causes, risk factors, and preventive measures or therapies. We are asking all clinicians to report AFM cases to the local health department, governing the jurisdiction where the patient lives.

## Reporting

Clinicians suspecting AFM in patients meeting the probable or confirmed case definition (irrespective of laboratory testing results) are asked to report these cases to the local health department governing the jurisdiction where the patient lives, or to the Illinois Department of Public Health Communicable Disease Control Section at 217-782-2016. Clinicians should complete the patient summary form and submit it along with the MRI report and images to their LHD as early as possible. Clinicians or infection control practitioners that have access to enter reportable diseases into the Illinois National Electronic Disease Surveillance System (I-NEDSS) should also enter the case's information into the system's AFM module. Local health departments (LHD) should report AFM cases into I-NEDSS as an AFM case if the clinician has not done so.

In addition to the patient summary form, MRI report, and images, the provider will be asked to submit the following information approximately 60 days after onset of the illness so CDC is able to better evaluate the impact of AFM:

The local health department will help facilitate the collection of this information.

# **Specimen Collection and Testing**

Clinicians should collect specimens from patients suspected of having AFM as early as possible in the course of illness, preferably on the day of onset of limb weakness. Early specimen collection has the best chance to yield a diagnosis of AFM. CDC has specimen collection procedures on their website. Please refer to CDC's collection procedures for the most up-to-date instructions. NOTE: Surveillance specimen coordination should be done in conjunction with the LHD and/or IDPH CD section prior to shipment. Please contact your local health department or IDPH to arrange specimen submission.

The following three forms must be completed and included with all specimen submissions to IDPH laboratory:

Medical providers and infection control practitioners should contact their local health department with questions about AFM reporting. Local health departments with questions should contact IDPH Communicable Disease Control Section at 217-782-2016.

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# **Alphaviruses**

## What are alphaviruses?

Alphaviruses are viruses that attack the brain. There are three main types: 1) eastern equine encephalomyelitis (EEE); 2) Venezuelan equine encephalomyelitis (VEE); and 3) western equine encephalomyelitis (WEE).

## How can someone come into contact with an alphavirus?

Outbreaks of alphaviruses usually occur in the summer. A person can come into contact with an alphavirus by being bit by a mosquito.

## Alphaviruses as weapons

Because they are stable during storage and can be made in large amounts, alphaviruses are considered to be easily weaponized. The viruses can be aerosolized and dispersed into the air.

Please note: Just because you come into contact with an alphavirus does not mean you will get sick from it.

# What happens if someone gets sick from an alphavirus?

Most infections with these viruses produce a fever, headache and muscle pain. Severe headache, stiff neck, confusion, seizures, coma and possibly even death can occur.

# How likely is someone to die from an alphavirus?

EEE, the most serious of the infections, has a high death rate (up to 35 percent). It also has a high rate of causing problems with the brain. VEE and WEE are less likely to cause brain-related symptoms. VEE has a death rate of less than 1 percent; WEE has a death rate of less than 3 percent.

# What is the treatment for alphaviruses?

#### Prevention of illness after contact

None

#### Treatment of illness

There is no specific treatment or established cure for alphaviruses. Supportive care (intravenous fluids, medicine to control fever and pain) is the standard treatment.

# Are there vaccines for alphaviruses?

There are vaccines available but there have been problems with their success. New vaccines are in development.

# What should be done if someone comes into contact with an alphavirus?

If you think that you or someone you know may have come into contact with an alphavirus, contact the local county health department right away.

If you or someone you know is showing symptoms of an alphavirus, call your health care provider or the Illinois Poison Center right away. The toll-free number for the poison center is 1-800-222-1222.

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Alzheimer's Disease

# **Alzheimer's Disease**

#### What Is Alzheimer's Disease?

Alzheimer's is a specific disease of the brain that was identified more than 100 years ago, but research into its causes, risk factors and potential treatments has gained momentum only in the last 30 years. The hallmarks of Alzheimer's disease are the accumulation of abnormal proteins in the brain: clumps of beta-amyloid (called amyloid plaques) and tangled bundles of tau fibers (called neurofibrillary tangles). Most experts now agree that the accumulation of plaques and tangles in the brain may begin 20 or more years before the symptoms of dementia appear.

Dementia is a term used to designate brain diseases that progressively and permanently undermine cognitive function and behavior to the point where the individual is no longer able to carry out customary activities at work or at home. Alzheimer's disease is one of many dementias. It happens to be the most common dementia seen in old age. It is an irreversible, progressive brain disease. It slowly destroys brain function and leads to dementia. It is characterized by cognitive decline (e.g., memory loss, confusion and poor reasoning); behavioral and psychiatric disorders (e.g., depression, delusions, agitation); and declines in functional status (e.g., ability to perform activities of daily living and self-care).

## What Are the Symptoms?

The first symptom of Alzheimer's disease is often memory impairment. As the disease progresses, memory continues to decline and other functions, like language skills and decision-making, become more difficult. Personality and behavior changes also may occur. A person with the disease may no longer recognize family and friends.

Eventually, the person who survives with Alzheimer's disease is completely reliant on others for assistance with the most basic activities of daily living, such as eating. In more than 90 percent of people with Alzheimer's disease, symptoms do not appear until after age 60 and the incidence of the disease increases with age.

However, there are other types of dementia caused by other diseases and conditions in the brain, such as frontotemporal, Lewy Body and vascular dementias. Some of these, such as frontotemporal, start at a much younger age when a person is in their 50s and early 60s, and can impair language or behavior, while leaving memory intact. Distinguishing between Alzheimer's disease and other dementias, in terms of clinical presentation and diagnosis, may be challenging and may require extensive testing in specialized centers. Researchers now recognize that many of these diseases and conditions can co-occur in the brain and work together to influence the onset of dementia. The term "Alzheimer's disease and related dementias" often are used to refer to Alzheimer's disease and related neurodegenerative disorders.

# What May Prevent or Delay the Onset of Alzheimer's Disease?

Many current studies are investigating the benefits of exercise, diet and other lifestyle modification that may prevent or delay the onset of Alzheimer's disease. The causes of Alzheimer's disease are not completely understood, but researchers believe they include a combination of genetic, environmental

and lifestyle factors. The importance of any one of these factors in increasing or decreasing the risk of developing Alzheimer's disease may differ from person-to-person. In rare cases, known as early or younger-onset Alzheimer's disease, people develop symptoms in their 30s, 40s or 50s.

# ILBrainHealth.org: A One-Stop-Shop for Alzheimer's Disease Education & Resources in Illinois

The Illinois Department of Public Health and Rush University Medical Center partnered to create a website housed under The Illinois Cognitive Resources Network. The website educates Illinoisans about the symptoms & early warning signs of Alzheimer's Disease and Related Dementias, and increases awareness of culturally relevant resources that are available in local Illinois communities. This online system aims to address some of the lessons learned during Lieutenant Governor Juliana Stratton & The Alzheimer's Association IL Chapter's 2019 Listening Tour. They found that many individuals, caregivers, and families living with Dementia feel alone on the journey, especially those in underserved and underrepresented communities.

## Personal and Economic Impact of Alzheimer's Disease

In 2010, there were 210,000 persons with Alzheimer's disease living in Illinois. This figure is projected to reach 240,000 in 2025, a 14 percent increase. If all of the persons with Alzheimer's disease in Illinois lived in one city, it would be the state's second largest city. Alzheimer's is not a disease that limits itself to a particular race, marital status, country of origin, religion or sexual preference.

Nationally, the cost of caring for those with Alzheimer's and other dementias is estimated to total \$203 billion in 2013, increasing to \$1.2 trillion (in today's dollars) by mid-century. Medicare and Medicaid cover about 70 percent of the costs of care. This dramatic rise includes a 500 percent increase in combined Medicare and Medicaid spending.

To put in to perspective the personal and economic impact of Alzheimer's disease and related dementias on persons with the disease, their families and caregivers, and state and federal governments, statistics about Alzheimer's disease and related dementias are presented in this state plan. A much more extensive compilation of facts and figures is published by the Alzheimer's Association every year at www.alz.org.

# Core Competencies for Providing Care to People Living with Dementia

These basic core competencies were developed by the Illinois Department of Public Health, the Alzheimer's Disease Advisory Committee, and Illinois partners to serve as a "minimum set of core competencies for individuals that directly work with or interact with persons living with dementia (PLWD) and their care partners." Some professions may expand on this set and define additional competencies. This effort began in 2015 as part of the Healthy Brain Initiative, providing the foundation for future trainings that will build skills for both professionals and lay persons to work more effectively with PLWD and their care partners. The development of these core competencies and trainings for providers and care partners will enhance the care and quality of life for PLWD across the state and empower the workforce to become more dementia capable.

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# **Arboviral Encephalitis**

## What is arboviral encephalitis?

Encephalitis is an inflammation of the brain that can be caused by an Arthropod borne virus (arbovirus). Arthropods include mosquitoes and ticks. In Illinois, arboviruses are transmitted to humans by the bites of infected mosquitoes.

Encephalitis due to St. Louis virus (SLE), West Nile virus (WNV) and California group viruses are the arboviral diseases that occur in persons in Illinois. WNV is the most commonly reported of the three diseases. Other viruses are in the California group; Lacrosse virus is the most common in Illinois.

Arboviral infections typically occur June through October when mosquitoes are active. Only a few types of mosquitoes carry and transmit these arboviruses and, usually only a small proportion of those mosquitoes actually carry the virus. Another virus, Eastern equine encephalitis (EEE) has been found in birds and horses in the state on rare occasions.

## How is arboviral encephalitis spread?

Infection with an arbovirus occurs only through the bite of an infected arthropod such as a mosquito. These diseases are not transmitted from person to person. In Illinois, the primary vector (carrier) of SLE and WNV is the northern house mosquito (Culex pipiens). The northern house mosquito breeds in small stagnant bodies of water (like ditches, street "catch basins") and receptacles - such as discarded tin cans, flower urns, old tires, buckets and other containers - that hold water. Mosquitoes become infected with the St. Louis encephalitis virus and WNV after biting infected birds.

The mosquito that transmits California (LaCrosse) encephalitis is the tree-hole mosquito (Aedes triseriatus). Found in wooded areas, the tree-hole mosquito breeds in water-filled discarded tires and other containers and in tree holes. California (LaCrosse) encephalitis virus infection in mosquitoes occurs when they bite small mammals that carry the virus or when an infected female mosquito transmits the infection to her offspring.

About two weeks after a heavy rain, large numbers of floodwater mosquitoes (such as Aedes vexans) can emerge from river floodplains and flooded woods. Although they can be a major nuisance problem for several weeks, floodwater mosquitoes have not been significant disease carriers in Illinois.

# What are the symptoms of encephalitis?

Most persons bitten by an infected mosquito will experience no symptoms of the disease or will have very mild symptoms including fever and headache. Approximately 1 percent to 2 percent will develop recognizable symptoms. Symptoms of WNV, SLE and LaCrosse encephalitis virus are similar. Severe infection may produce a rapid onset of severe headache, high fever, muscle aches, stiffness in the back of the neck, problems with muscle coordination, disorientation, convulsions and coma. Symptoms usually occur five to 15 days after the bite of an infected mosquito.

# Who is most susceptible to arboviral encephalitis?

Although anyone can be infected with an arbovirus, WNV and SLE usually occur in persons older than 50 years of age. Most patients recover fully, although severe infection may, infrequently, result in neurologic damage or death.

California (LaCrosse) encephalitis virus infection most often occurs in children. Illness is generally milder than those due to WNV and SLE, and fatalities rarely occur. However, studies indicate some children with California (LaCrosse) encephalitis virus may experience persistent neurologic problems. Infection with an arbovirus may provide some immunity to that specific virus, but not to other arboviruses.

## How is encephalitis diagnosed and treated?

An arbovirus infection is usually diagnosed through a blood test or testing of cerebrospinal fluid. A physician will attempt to relieve symptoms of the illness, but there is no specific treatment or cure for these diseases.

## How can arboviral encephalitis be prevented?

Because the mosquitoes that transmit arboviruses breed in small pools of water, removing potential breeding places is the most effective form of disease prevention. Here are a few suggestions:

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# **Arthritis**

#### What is arthritis?

The term arthritis refers to about 120 different diseases that can affect the joints, muscles and other soft tissues. The three most common forms are osteoarthritis, fibromyalgia and rheumatoid arthritis. Osteoarthritis, also known as degenerative joint disease, is the most common type of arthritis, affecting an estimated 21 million adults in this country. Commonly referred to as a "wear and tear" arthritis, osteoarthritis involves destruction of the cartilage, the cushion or shock absorber on the ends of the bones. Fibromyalgia is a disease that causes pain and stiffness in the tissues that support and move the bones and joints. It is a common disease that affects approximately 2 percent of the U.S. population or about 5 million people. Widespread pain and localized tender points occur in the muscles and tendons especially those of the neck, spine, shoulders and hips. Other common symptoms include significant fatigue, difficulty concentrating and sleep disturbance. Rheumatoid arthritis is a disease that primarily affects the lining of the joint. An important feature of this inflammatory illness is that the body's own immune system targets its own tissue as an enemy. Joint swelling over a long period of time can lead to deformity and loss of function in the joint. Because rheumatoid arthritis affects the entire body, many people also experience fatigue, fever and a general sense of feeling unwell. Rheumatoid arthritis affects over 2 million Americans. Other types of arthritis include gout, systemic lupus erythematosus, juvenile arthritis, scleroderma, infectious arthritis, ankylosing spondylitis, psoriatic arthritis, bursitis, tendinitis and carpal tunnel syndrome.

#### **How Common is Arthritis?**

Arthritis can affect people of all ages, including children. In Illinois in 1990, about 16 percent of the state's population – nearly 2 million people – suffered from arthritis or other rheumatic conditions. In 2002, it was estimated that about 22.7 percent of the adults in Illinois (approximately 2.1 million people) suffered from arthritis. As the state's population continues to age, the number of people affected by arthritis is expected to continue to increase.

# What are the symptoms?

Symptoms of arthritis can include pain, swelling and stiffness in joints or the inability to move a joint normally. In some types of arthritis, such as rheumatoid arthritis, joints can become red, warm, swollen and painful, and the person may feel "sick all over." Other symptoms are unexplained fever, fatigue, weight loss and swollen lymph glands. Symptoms typically last more than two weeks.

#### Who is at risk?

Non-modifiable risk factors are those that cannot be prevented or changed. They are –

Modifiable risk factors are those that can be prevented or changed by an individual. These include –

In some families, inherited factors play a role in a person's risk for developing arthritis. If a parent or other close relative has been diagnosed with arthritis, it is important to share this history with a health care provider. Early diagnosis and treatment is the key to successful management of arthritis.

## How is arthritis diagnosed?

An diagnosis of arthritis is based on the pattern of symptoms, medical history, family history, physical examination, X-rays and lab tests.

#### How is arthritis treated?

Appropriate management can help people with arthritis live healthy and independent lives. A rheumatologist (an arthritis specialist) can be very helpful in evaluating and treating types of arthritis that require specialized drug therapy.

An important aspect of successfully dealing with arthritis pain and disability is self-management. It is important for patients to learn about their disease and to take part in their own care. Working with health care professionals allows a person to share in decision making and gain a sense of control. The following are important self-management skills:

Research shows that patients who take part in their own care report less pain, make fewer visits to their doctor and enjoy a better quality of life.

## When should you get help?

Early diagnosis and appropriate treatment are very important in managing arthritis. Physicians now believe that damage to bones begins within the first two years that a person has the disease. Early diagnosis can decrease symptoms and long-term complications. A person should see a health care professional if symptoms of pain or swelling in multiple joints on both sides of the body develop.

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Asthma

## **Asthma**

#### What is asthma?

Asthma is a condition that affects the airways. It makes it hard to breathe because the airways become swollen, produce too much mucus and the muscles around the airways tighten. Asthma can range from mild to severe and can be life threatening. It is recognized that in some families, inherited factors play a role in an individual's risk for asthma. If a parent, or other close relative, has been diagnosed with asthma, a child may be at an increased risk for the condition; family history is important in the assessment and treatment of asthma. There is no cure for asthma, but it can be controlled by ongoing medical care, including a management plan developed by a health care provider, medication, avoidance of triggers and good health habits.

## Origins of asthma – what causes asthma?

The exact cause of asthma is not known; there is not a single cause of asthma. The causes of asthma symptoms can vary for different people. Most often starts in childhood, and some researchers think genetic and environmental factors interact to cause asthma.

## How is asthma diagnosed?

It is often difficult for a doctor to make an asthma diagnosis, because symptoms are similar to other respiratory conditions, such as bronchitis and upper respiratory infection. A diagnosis of asthma is based on the following:

# What are the warning signs of an asthma attack?

Warning signs are symptoms that someone is having difficulty with asthma. Symptoms of an asthma attack may include:

All of these symptoms do not necessarily occur during an asthma attack. Asthma attacks may occur anytime, but there are risk factors that can trigger an attack.

#### What can make asthma worse?

There are a number of different risk factors, also known as triggers that can make a person's asthma worse. Not every person will be affected by the same things. Discover which triggers make your asthma worse and learn ways to reduce exposure and to prevent symptoms. Some examples of triggers are:

# How can I control my asthma?

Work with your health care provider to develop an action plan that includes what to do if you have an asthma attack. The plan should address the following:

Recognize your symptoms early and know the difference between your controller medicine and your reliever medicine. Take your controller medication regularly, even when you are not having asthma

symptoms.

Learn as much as possible about asthma and communicate with your health care provider and others involved in the management of your asthma. If your child has asthma, it is important for you to communicate with school staff, coaches, child care providers and others about his/her "Asthma Action Plan"

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Tickborne Illnesses

## **Babesiosis**

#### What is Babesiosis?

Babesiosis is caused by microscopic parasites that infect red blood cells. Babesia microti is the main species that has been found in people in the United States.

## How do people get infected with Babesia?

The main route of transmission is through the bite of an infected tick. Babesia microti is spread by Ixodes scapularis ticks, which are commonly called blacklegged ticks or deer ticks. Infected people might not recall a tick bite because the ticks can be very small (about the size of a poppy seed).

Other possible ways of becoming infected with Babesia include receipt of a contaminated blood transfusion (no tests have been licensed yet for donor screening); or transmission from an infected mother to her baby during pregnancy or delivery.

## What are the symptoms and signs of Babesia infection?

Many people who are infected with Babesia microti feel fine and do not have any symptoms. Some people develop flu-like symptoms, such as fever, chills, sweats, headache, body aches, loss of appetite, nausea, or fatigue. Because Babesia parasites infect red blood cells, babesiosis can cause hemolytic anemia (from destruction of red blood cells). Babesiosis can be a severe, life-threatening disease, in some people (persons without a spleen or who have weakened immune systems).

# How soon after the exposure do symptoms develop?

Symptoms, if any, can start within a week or so. They usually develop within a few weeks or months, sometimes longer.

# What should I do if I think I might have Babesiosis?

See your health care provider. In symptomatic people, babesiosis usually is diagnosed by examining blood under a microscope and seeing Babesia parasites inside red blood cells. Effective treatments are available, and most people respond well. People who do not have symptoms or signs of babesiosis usually do not need to be treated.

# Can Babesiosis be prevented?

Yes. People can take steps to prevent babesiosis and other tickborne infections. Learn more about Tick Prevention and Control information.

No vaccine is available to protect people against babesiosis.

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# **Bacterial Vaginosis**

## What is bacterial vaginosis?

Bacterial vaginosis (BV) is a condition in women where the normal balance of bacteria in the vagina is disrupted and replaced by an overgrowth of certain bacteria. It is sometimes accompanied by discharge, odor, pain, itching or burning.

## How common is bacterial vaginosis?

Bacterial vaginosis (BV) is the most common vaginal infection in women of childbearing age. In the United States, BV is common in pregnant women.

## How do people get bacterial vaginosis?

The cause of BV is not fully understood. BV is associated with an imbalance in the bacteria that are normally found in a woman's vagina. The vagina normally contains mostly "good" bacteria, and fewer "harmful" bacteria. BV develops when there is an increase in harmful bacteria.

Not much is known about how women get BV. There are many unanswered questions about the role that harmful bacteria play in causing BV. Any woman can get BV. However, some activities or behaviors can upset the normal balance of bacteria in the vagina and put women at increased risk including:

It is not clear what role sexual activity plays in the development of BV. Women do not get BV from toilet seats, bedding, swimming pools, or from touching objects around them. Women who have never had sexual intercourse may be affected.

# What are the signs and symptoms of bacterial vaginosis?

Women with BV often have an abnormal vaginal discharge with an unpleasant odor. Some women report a strong fish-like odor, especially after intercourse. The discharge is usually white or gray; it can be thin. Women with BV may have burning during urination or itching around the outside of the vagina, or both. Some women with BV report no signs or symptoms at all.

# How is bacterial vaginosis diagnosed?

A health care provider must examine the vagina for signs of BV (e.g., discharge) and perform laboratory tests on a sample of vaginal fluid to look for bacteria associated with BV.

# What are the complications of bacterial vaginosis?

In most cases, BV causes no complications. But there are some serious risks from BV including:

# How does bacterial vaginosis affect a pregnant woman and her baby?

Pregnant women with BV more often have babies who are born premature or with low birth weight (low birth weight is less than 5.5 pounds).

The bacteria that cause BV can sometimes infect the uterus (womb) and fallopian tubes (tubes that carry eggs from the ovaries to the uterus). This type of infection is called pelvic inflammatory disease (PID). PID can cause infertility or damage the fallopian tubes enough to increase the future risk of ectopic pregnancy and infertility. Ectopic pregnancy is a life-threatening condition in which a fertilized egg grows outside the uterus, usually in a fallopian tube which can rupture.

## Who should be treated for bacterial vaginosis?

Although BV will sometimes clear up without treatment, all women diagnosed with BV should be treated to avoid such complications as PID. Treatment is especially important for pregnant women. All pregnant women, regardless of symptoms, who have ever had a premature delivery or low birth weight baby should be considered for a BV examination and be treated when necessary. All pregnant women who have symptoms of BV should be checked and treated. Male partners generally do not need to be treated. However, BV may spread between female sex partners.

Treatment is especially important for pregnant women. All pregnant women who have ever had a premature delivery or low birth weight baby should be considered for a BV examination, regardless of symptoms, and should be treated if they have BV. All pregnant women who have symptoms of BV should be checked and treated.

Some physicians recommend that all women undergoing a hysterectomy or abortion be treated for BV prior to the procedure, regardless of symptoms, to reduce their risk of developing an infection.

BV is treatable with antibiotics prescribed by a health care provider. Two different antibiotics are recommended as treatment for BV: metronidazole or clindamycin. Either can be used with non-pregnant or pregnant women, but the recommended dosages differ. Women with BV who are HIV-positive should receive the same treatment as those who are HIV-negative.

# How can bacterial vaginosis be prevented?

BV is not completely understood by scientists, and the best ways to prevent it are unknown. However, it is known that BV is associated with having a new sex partner or having multiple sex partners.

The following basic prevention steps can help reduce the risk of upsetting the natural balance of bacteria in the vagina and developing BV:

IDPH HIV/STD Hotline 800-243-2437 (TTY 800-782-0423)

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## **Bladder Cancer**

#### What is Bladder Cancer?

Located in the lower abdomen, the bladder is an organ that stores urine. The kidneys carry urine through the ureters to the bladder then out of the body through the urethra.

#### There are three types of bladder cancer:

Transitional cell carcinoma – cancer of the innermost tissue layer of the bladder. Most cancers of the bladder begin in the transitional cells.

Squamous cell carcinoma – cancer of the thin, flat cells of the bladder. This type of cancer can develop after prolonged infection or irritation.

Adenocarcinoma – cancer that begins in the glandular cells located in the lining of the bladder.

#### Bladder cancer can be described as:

Superficial bladder cancer - affects the cells of the lining in the bladder only.

Invasive bladder cancer - spreads through the lining of the bladder to the muscle wall, nearby organs and/or lymph nodes.

According to the Illinois State Cancer Registry, in 2008, about 2,950 new cases of bladder cancer will be diagnosed in Illinois. Of these, about 2,220 will be in men and about 730 in women. About 610 Illinoisans are expected to die of bladder cancer in 2008.

#### What are the Causes and Risks of Bladder Cancer?

The exact cause of bladder cancer is unknown. Bladder cancer occurs more often in men than women, and more often in whites than any other race or ethnicity.

In 2002, bladder cancer was the fourth most diagnosed cancer among white men, fifth most diagnosed among Hispanic men, and the seventh most diagnosed in black and Asian Pacific Islander men.

# What are the Symptoms?

In the early stages, bladder cancer does not produce signs or symptoms. One of the first signs is darkened or blood in the urine. Other signs and symptoms may include frequent urination or a feeling of urgency and not being able to go, painful or slowing of urination and low back or pelvic pain.

#### **How to Prevent Bladder Cancer**

There is no definite way to prevent bladder cancer. Ways to reduce your risk include: avoiding exposure to carcinogenic chemicals (people who work with hair dye, paint, metal, leather and rubber are at increased risk); increasing physical activity, drinking plenty of fluids and not smoking.

Smoking damages every organ in the human body. More than 50 percent of bladder cancer cases are found in men who smoke and 20 percent in women who smoke. Eating a diet high in fried meats and fats, and being overweight and/or obese also can contribute to bladder cancer.

Maintaining a healthy diet by consuming at least five daily servings of fruits and vegetables, particularly cruciferous vegetables like broccoli, cauliflower and cabbage, may reduce the risk of developing cancer.

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## **Breast Cancer**

According to the Centers for Disease Control and Prevention each year in the United States, about 237,000 cases of breast cancer are diagnosed in women and about 2,100 in men. About 41,000 women and 450 men in the U.S. die each year from breast cancer. In 2015, Illinois reported 10,354 women diagnosed with breast cancer and 76 men. Also in 2015 1,781 women died from breast cancer and 25 men.

Over the last decade, the risk of getting breast cancer has not changed for women overall, but the risk has increased for black women and Asian and Pacific Islander women. Black women have a higher risk of death from breast cancer than white women.

The risk of getting breast cancer goes up with age. In the United States, the average age when women are diagnosed with breast cancer is 61. Men who get breast cancer are diagnosed usually between 60 and 70 years old.

Studies have shown that your risk for breast cancer is due to a combination of factors. The main factors that influence your risk include being a woman and getting older. Many factors over the course of a lifetime can influence your breast cancer risk. You can't change some factors, such as getting older or your family history, but you can help lower your risk of breast cancer by taking care of your health.

Although breast cancer screening cannot prevent breast cancer, it can help find breast cancer early, when it is easier to treat. Talk to your doctor about which breast cancer screening tests are right for you, and when you should have them.

#### What is breast cancer?

Sometimes breast cells become abnormal. These abnormal cells grow, divide, and create new cells that the body does not need and that do not function normally. The extra cells form a mass called a tumor. Some tumors are "benign" or not cancer. These tumors usually stay in one spot in the breast and do not cause big health problems. Other tumors are "malignant" and are cancer. Breast cancer often starts out too small to be felt. As it grows, it can spread throughout the breast or to other parts of the body. This causes serious health problems and can cause death.

# What are the symptoms of breast cancer?

Different people have different warning signs for breast cancer. Some people do not have any signs or symptoms at all. A person may find out they have breast cancer after a routine mammogram.

## Some warning signs of breast cancer are:

Keep in mind that some of these warning signs can happen with other conditions that are not cancer.

# What are the risk factors for developing breast cancer?

However, most breast cancer cases occur in women without any risk factors, so everyone should be checked regularly.

## What is a woman's risk of getting breast cancer?

Excluding skin cancer, breast cancer is the most common form of cancer in American women and the second major cause of death after lung cancer. One out of eight women will develop breast cancer over the course of a lifetime.

# What does it mean to have a genetic predisposition to breast cancer?

Genes that contain the hereditary information passed down from parent to child serve as the blueprint for many human features and characteristics. The most common cause of hereditary breast cancer is an inherited mutation in the BRCA1 and BRCA2 genes. In normal cells, these genes help prevent cancer by making proteins that help keep the cells from growing abnormally. If you have inherited a mutated copy of either gene from a parent, you have a high risk of developing breast cancer during your lifetime.

These cancers tend to occur in younger women and are more often bilateral (in both breasts) than cancers in women who are not born with one of these gene mutations. Women with these inherited mutations also have an increased risk for developing other cancers, particularly ovarian cancer.

## Can breast cancer be prevented?

There is no sure way to prevent breast cancer, but there are things all women can do that might reduce their risk and help increase the odds that if cancer does occur, it is found at an early, more treatable stage. You can lower your risk of breast cancer by changing those risk factors that are under your control. If you limit alcohol use, exercise regularly, and stay at a healthy weight, you are decreasing your risk of getting breast cancer. Women who choose to breastfeed for at least several months also may reduce their breast cancer risk. Not using post-menopausal hormone therapy (PHT) also can help you avoid raising your risk.

# How can breast cancer be found early?

Early detection can help save lives. Mammography remains the most effective means available to detect cancer in its earliest stages.

# Where can I find financial help to get a mammogram?

Partial or total costs of mammograms are covered by Medicare, Medicaid and most private health plans. To find out what the law requires insurance carriers to provide, go to the Illinois Department of Insurance's page (see Resources).

The Illinois Breast and Cervical Cancer Program provides free mammograms and Pap tests for women who qualify - women age 35 to 64 and are uninsured. Younger women may qualify if they have symptoms. To find a site near you that provides this free service, call the Women's Health-Line at 888-522-1282 (TTY 800-547-0466).

# How is breast cancer diagnosed?

Doctors often use additional tests to find or diagnose breast cancer.

# What is staging?

If breast cancer is diagnosed, tests are done to find out if cancer cells have spread within the breast or to other parts of the body. This process is called staging. Whether the cancer is only in the breast, is found in lymph nodes under your arm, or has spread outside the breast determines your stage of breast cancer. The type and stage of breast cancer tells doctors what kind of treatment will be needed.

#### How is breast cancer treated?

Breast cancer is treated in several ways. It depends on the kind of breast cancer and how far it has spread. Treatments include surgery, chemotherapy, hormonal therapy, biologic therapy, and radiation. People with breast cancer often get more than one kind of treatment.

It is common for doctors from different specialties to work together in treating breast cancer. Surgeons are doctors that perform operations. Medical oncologists are doctors that treat cancers with medicines. Radiation oncologists are doctors that treat cancers with radiation.

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# **Breast Exams and Mammograms**

Detecting breast cancer in the earliest and most curable state could save the lives of many Illinois women.

There are three methods of early detection that all women should practice: monthly breast self-exams, annual clinical breast examinations by a health care professional and regular mammograms.

# **Breast Self-Exam (BSE)**

All women 20 years of age and older should perform a BSE each month, two to three days after your period or on the same date each month if you no longer have periods. Monthly BSE helps you learn the way your breasts normally look and feel and allows you to notice changes. The following changes should be reported to your health care provider:

Keep in mind that some of these warning signs can happen with other conditions that are not cancer.

#### Instructions for BSE

## **Monthly Breast Self-Exam**

#### Look For Changes

Hands at side. Compare for symmetry. Look for changes in:

Check for:

Hands over head. Check front and side view for:

Hands on hips, press down, bend forward. Check for:

## Feel For Changes

Lie down with a towel under right shoulder; raise right arm above the head.

Examine area from:

Use the pads of the three middle fingers of the left hand. Hold hand in bowed position. Move fingers in dime-sized circles.

Use three levels of pressure:

Examine entire area using vertical strip pattern.

Be sure to examine both breasts in the same way at the same time every month. If there are any lumps, knots or changes, tell your doctor right away.

# **Clinical Breast Exam (CBE)**

A CBE should be a part of every yearly health exam for women 20 years of age and older. During the CBE, your doctor or nurse will carefully feel your breasts and under your arms checking for lumps and other changes. During the CBE, your health care provider can show you the correct way to perform a breast self-exam, if you ask for help.

## **Mammography**

Mammograms are the best available method to detect breast cancer in its earliest,most treatable stage. However, mammograms are not perfect and can miss some cancers. A woman should not ignore something she feels because her mammogram is normal. Changes can be especially difficult to spot in dense, glandular breast of a younger woman. This is why women of all ages should have a clinical breast exam (an exam done by a health care provider) every year.

A screening mammogram is an X-ray examination of the breast in a woman who has no breast complaints (asymptomatic). The goal of screening mammography is to find cancer when it is still too small to be felt by breast self-examination or your doctor. Finding small breast cancers early by a screening mammogram greatly improves your chance for successful treatment. Mammograms produce high quality X-rays, with a low dose of radiation. For a mammogram, the breast is positioned between two smooth plastic plates to flatten your breast tissue and allow a lower dose of X-ray. Although this may be temporarily uncomfortable, it only lasts for a few seconds. The entire procedure for a screening mammogram takes about 20 minutes.

#### When should women have a screening mammogram?

Most women should have their first mammogram at age 40 and then have another mammogram every year. If you have any symptoms or changes in your breast, or if breast cancer runs in your family, talk to your health care professional. He or she may recommend that you have mammograms earlier or more often than other women.

#### How can I get ready for my mammogram?

#### Where can I get a mammogram?

Be sure to get a mammogram from a facility certified by the Food and Drug Administration (FDA). These places must meet high standards for their X-ray machines and staff. Check out the FDA's website (see Resources) for a list of FDA-certified mammography facilities or call the American Cancer Society at 800-227-2345.

#### How can I pay for a mammogram?

Partial or total costs of mammograms are covered by Medicare, Medicaid and most private health plans. To find out what the law requires insurance carriers to provide, go to the Illinois Department of Insurance's website (see Resources).

The Illinois Breast and Cervical Cancer Program provides free mammograms and Pap tests for women who qualify - women age 35 to 64 who are uninsured. Younger women may qualify if they have symptoms. To find a site near you that provides this free service, call the Women's Health-Line at 888-522-1282 (TTY 800-547-0466).

#### When should I expect the results?

All mammogram facilities are required to send results to you within 30 days. Generally, you will be contacted within five working days if there is a problem with the mammogram. If you do not hear from your doctor, do not assume that your mammogram was normal — call your doctor or the facility that administered the mammogram.

#### What if I need additional testing?

If your health care provider orders additional tests, such as a breast ultrasound or breast biopsy, ask for information about these tests. Remember, if you have a lump in your breast, a normal mammogram is not enough testing to make sure the lump is not cancer.

Only two to four mammograms out of every 1,000 lead to a diagnosis of cancer. About 10 percent of women will require more tests such as a diagnostic mammogram or breast ultrasound. Do not be alarmed if this happens to you. Only 8 percent to 10 percent of those women will need a biopsy, and 80 percent of those biopsies will not be cancer.

#### What if I am diagnosed with cancer?

More than 2 million women live with breast cancer. If detected early, women diagnosed with breast cancer have a survival rate of 98 percent. Early detection also gives women more treatment options.

You can find out more about breast cancer by reading the Illinois Department of Public Health's "Your Right to Know" (updated 12/13) (see Publications) or the National Cancer Institute's "Understanding Breast Cancer: A Women's Health Guide for Women" (see Resources).

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# **Cancer and Your Environment**

Many people wonder if the environment they live in "causes cancer." To answer such difficult questions, it is first necessary to understand what cancer is, how it develops and what factors contribute to cancer.

#### What is cancer?

Cancer is not a single disease. It is a group of more than 200 different diseases. Cancer is an uncontrolled growth of cells that disrupts body tissues and organs. Cancerous cells are not normal in their structure and function. They grow and multiply to form tumors that invade local tissues and sometimes scatter throughout the body. In the beginning, there are no warning signs to alert us to the disease. Later, the signs of cancer are related to the location of the tumor. As cancer progresses, it commonly causes loss of muscle tissue, pale skin, pain, fatigue and loss of appetite.

## How widespread is cancer?

It is estimated that one out of every two men and one of every three women will have cancer in their lifetimes. About one in four persons will die of cancer. The American Cancer Society estimates that about 570,000 cancer deaths occur each year in the United States. Cancer is the second leading cause of death after heart disease.

#### Which cancers cause the most deaths?

In the United States, lung cancer is the leading cause of cancer-related deaths for both sexes, followed by prostate cancer in males and breast cancer in females. For children younger than 15 years old, cancer is the fifth leading cause of death after accidents. Leukemia and cancers of the brain and central nervous system are the leading cancers in children in this age group.

# How many kinds of cancer are there?

There are many types of cancer because cancerous cells can grow anywhere in the body. The location of the cancer and the type of tissue involved helps to give the disease a specific name, such as lung cancer, ovarian cancer, breast cancer and prostate cancer. Other examples are melanoma (involving cells that contain skin pigment called melanin) and leukemia (involving the white blood cells).

# How does cancer develop?

Cancer is a process with three steps: initiation, promotion and progression. Each step plays a vital role in stopping the cancer process. Since a period of many years usually exists between the initiation of the cancer process and the onset of the symptoms, cancer prevention methods like risk control and early detection are most effective in the first two steps.

The first step involves changes to the genetic code (DNA) of a cell called initiation. Initiation is simply a mistake (mutation). The mistake may appear on a chromosome, or it could turn up in a gene segment of DNA. Usually, initiation by itself is not enough to produce cancer; the body's repair systems can replace damaged sections of DNA, which allow the cell to recover under normal circumstances. If the

cell reproduces while the DNA is damaged, more abnormal cells can be made that may develop into cancer.

The altered cells undergo more changes that may require an additional substance called a promoter. A promoter is something that speeds up the pace of cell division, which can create more genetic mutations. A promoter may be a hormone such as estrogen or a toxic substance such as a chemical in tobacco smoke.

The last step is progression, which means that the cells have begun to grow out of control and is the basis for all cancers. The out of control cells form a tumor. A tumor is simply a mass of abnormal cells that keep growing and can extend into nearby tissues or spread to other parts of the body. How quickly a cancer progresses is determined by body conditions, such as hormones, and by genetic factors.

No one completely understands this process, but certain aspects of a person's lifestyle can be linked to cancer formation.

#### What causes cancer?

There is no single cause of cancer. Cancer development depends on things such as family history (genetics), health, nutrition, personal habits and the environment. Genetic factors by themselves probably account for only a small fraction of cancers. Genetic factors do have an important influence on a person's chance of developing cancer when combined with outside factors. These factors are either voluntary (such as cigarette smoking, diet, and sexual behavior) or involuntary (such as breathing polluted air or drinking contaminated water).

#### What factors contribute to cancer?

Cigarette smoking is the leading cause of cancer. Cigarette smoke contains more than 3,800 individual chemicals, and more than 40 are carcinogenic (cancer causing).

Portions of the diet, especially fatty foods and alcoholic beverages, also are linked to cancer.

Skin exposure to ultraviolet radiation in sunlight is the primary cause of melanoma, a skin cancer.

Sexual behavior that helps spread sexually transmitted diseases is closely linked to cervical cancer in women.

Environmental pollution by chemicals in drinking water, air, food and in the workplace may contribute to cancer. The harmful health effects of chemicals depend on the dose, strength of the chemical compound, the length of exposure and the general health of the individual. Outside the workplace, very few cases of cancer are believed to be caused by exposure to chemicals in the environment.

Most cancers may be prevented through the identification and control of external factors. Approximately 30 percent of cancers are linked to cigarette smoking. The remaining 70 percent are likely the result of interaction among various factors.

#### How do chemicals cause cancer?

Some chemicals in the environment are toxic substances that can produce cancer in humans and animals. Most chemicals act by causing the initiation step in the cancer process (altering the DNA), but they also can act as promoters.

# What cancers are caused by chemicals?

Most cancer-causing chemicals were first recognized in workplace settings. The workplace is unique because workers are often exposed to large amounts of chemicals over long periods of time. The first association of cancer with the workplace occurred in 1775. A London doctor related cases of cancer of

the scrotum among young chimney sweeps to their exposure to soot. Other cause-and-effect relationships have been noted in workers between –

Workers may be exposed to a combination of cancer-causing chemicals (carcinogens), which increases their cancer risk. The risk of lung cancer in asbestos workers who also smoke cigarettes is at least 50 times higher than the risk in nonsmoking asbestos workers. Reducing chemical exposure can prevent most work-related cancers.

## How are chemicals tested for cancer causing properties?

Studies and experiments with laboratory animals are the main sources that identify whether exposure to a certain chemical causes cancer. Laboratory tests often use doses much higher than those found in the environment. Scientists then apply the animal results to humans to calculate the "cancer risk" for the tested chemical. This process is difficult because there is no complete match between cancer in animals and cancer in humans.

## If I am exposed to a carcinogen, will I get cancer?

Cancer development is a complex process that occurs over a long period of time, and is influenced by many factors. There are many different substances that act as carcinogens. Some, like asbestos, are linked to many different human cancers and risk of cancer development is high. Therefore, the risk of getting cancer from exposure depends upon the type of carcinogen and length of exposure.

The good news is that if exposure to carcinogens is stopped soon enough, the body can stop or reverse the cancer process.

## What can you do to reduce your risk of getting cancer?

Scientific evidence shows that lifestyle choices, a healthy diet, good nutrition and physical activity can reduce cancer risk. It is never too late to make these changes, but changing long-term behavior can be difficult. You must be persistent over time to reduce your risk of getting cancer. The American Cancer Society recommends the following –

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Cancer

## Cancer

The Division of Epidemiologic Studies conducted an assessment to determine if there is elevated cancer incidence in the population surrounding the Sterigenics facility in Willowbrook, Illinois. The study's results, when taken as a whole, indicated that some cancers were elevated in populations living near the Sterigenics facility in Willowbrook. Many apparent differences and inconsistences, however, existed between genders, across study areas, and among cancer sites. Further studies, preferably with larger populations and multiple facilities, are strongly recommended to confirm this assessment's findings.

Cancer is a common disease, sometimes more common than many people believe. The National Cancer Institute estimates that one in two men in the United States has a lifetime risk of developing cancer; for women, the lifetime risk is one in three. The number of people with cancer is increasing in most communities, because more people are living to the ages of greatest cancer occurrence.

Cancer is the second most common cause of death in Illinois and the United States, and the leading cause of death for Illinois citizens aged 45-64. During 2009, the underlying cause of death for 24,182 Illinoisans was cancer. In the same year, new invasive cancer cases totaling 64,135 were diagnosed among Illinois residents. Cancer affects all racial and ethnic groups and kills more Illinoisans annually then AIDS, injuries and homicides combined.

Many types of cancer can be prevented, and the prospects for surviving cancer are better than ever before and continue to improve. Early detection and improved treatments are allowing more people who have been diagnosed with cancer to live longer and better. By adopting a healthier lifestyle and by visiting a physician regularly for a cancer-related checkup, many people could reduce their chances of developing or dying from cancer. Screening examinations, conducted regularly by a health care professional, can result in the detection of cancers of the breast, tongue, mouth, colon, rectum, cervix, prostate, testis and melanomas at earlier stages, when treatment is more likely to be successful. More than half of all new cancer cases occur in the nine screening-accessible cancer sites listed above.

# Types of Cancer and Cancer-Related Factsheets

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Injury & Violence Prevention

## **Carbon Monoxide**

#### What Is Carbon Monoxide?

Carbon monoxide (CO) is a non-irritating, odorless, colorless gas that is somewhat lighter than air. A by-product of incomplete burning of coal, wood, charcoal, natural gas, fuel oil, kerosene, gasoline, fabrics and plastics, it is the leading cause of poisoning deaths in the United States.

#### How Does the New Carbon Monoxide Law Affect Me?

Effective January 1, 2007, every Illinois home is required to have at least one carbon monoxide alarm in an operating condition within 15 feet of every room used for sleeping purposes. Homes that do not rely on the burning of fuel for heat, ventilation or hot water; are not connected to a garage; and are not near a source of carbon monoxide (as determined by the local building commissioner) are not required to install carbon monoxide detectors. (Public Act 94-741)

## **How Are People Exposed to CO?**

Because the burning of fossil fuels and fossil fuel products is so widespread, CO is a common air pollutant, particularly in urban areas. Elevated levels in cities are caused by the concentration of traffic, industry and heating needs. Indoors, elevated CO levels can be traced to gas appliances, tobacco smoke, or poorly vented or unvented combustion sources.

There are four main sources of CO in the environment:

# Why Is CO Dangerous?

CO interferes with the blood's ability to carry oxygen. Blood carries oxygen to body tissues by combining the oxygen with hemoglobin, a substance found in red blood cells. CO, however, combines with hemoglobin 250 times better than oxygen does, thereby denying body tissues a sufficient supply of oxygen (a condition called hypoxia). Organs with the highest demand for oxygen--the brain and the heart--are most sensitive to CO poisoning. Infants in particular are more susceptible to CO poisoning because their hemoglobin binds with carbon monoxide better than adult hemoglobin does. This means that the unborn or newborns may suffer more serious effects than adults, even at the same levels of exposure.

# What Are the Symptoms of CO Poisoning?

At low levels, CO exposure causes no obvious symptoms, although people exposed to low CO levels may experience decreased exercise tolerance and shortness of breath during exertion. Tightness across the forehead, flushed skin and slightly impaired motor skills also may occur. The first and most obvious symptom is usually a headache with throbbing temples. Symptoms of mild to moderate CO poisoning may resemble winter flu or gastroenteritis, particularly in children, and include nausea, lethargy and malaise. As the CO level or exposure time increases, symptoms become more severe and additional ones appear: irritability, chest pain, fatigue, diminished judgment, dizziness and dimness of vision. Higher levels cause fainting upon exertion, marked confusion and collapse. If exposure

continues, coma, convulsion and death from respiratory arrest can result. When unexplained symptoms persist and affect more than one person in a home or workplace where a source of combustion is present, CO poisoning should be considered. This is especially true during heating season.

## Are There Any Long-Term Effects?

CO poisoning survivors may continue to suffer both severe and subtle neurological effects. Up to 40 percent of those who experience serious, nonfatal CO poisoning develop such symptoms as apathy, mutism, amnesia, loss of bladder control, headache, irritability, personality changes, confusion, memory loss, motor impairment and vision changes. These symptoms most often appear within two to four weeks after exposure, even after apparent recovery. Up to 75 percent of those with delayed effects recover within a year, but sometimes not fully. Some effects, such as memory loss and motor impairment, may be permanent.

## **How Is CO Poisoning Treated?**

The first rule in any CO exposure is to remove those exposed from the affected area and to eliminate the CO source. In mild cases, symptoms disappear on their own or with the use of supplied oxygen. More severe poisoning requires supportive care for the acute symptoms, including 100 percent oxygen, respiratory support, intravenous fluids and heart monitoring.

## How Can You Tell If You Are Being Exposed to CO?

The local gas company, fire department or health department may be able to help you have the air in your home or workplace tested. CO monitors also are available for home use. Place detectors in areas where your family spends most of its time--family room, bedroom or kitchen--but far enough away from obvious and predictable sources of CO, such as a gas stove, to avoid false alarms. A hardware store, safety supply outlet, gas company, fire department or health department can provide more information about these devices.

# How Can I Avoid CO Poisoning in the Home?

CO poisoning is entirely preventable, if you follow a few simple steps:

If you suspect CO exposure or poisoning, call emergency personnel and leave the area immediately. Then notify the gas company or the health department. Affected individuals should be led to fresh air and provided with oxygen, if necessary. Follow standard first aid practices: Keep victims warm and quiet until help arrives.

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Patient Safety & Quality

# **Clostridium Difficile Campaign**

## **Background**

The Illinois Campaign to Eliminate Clostridium difficile (ICE C. diff) is a statewide educational initiative that engages Illinois hospitals and long term care facilities in successful strategies to prevent and control C. diff. Building from the 20-hospital Illinois C. diff Prevention Collaborative that ended in 2011, ICE C. diff aims to spread lessons learned from the collaborative and strengthen the ability of Illinois hospitals and long term care facilities in implementing evidence-based strategies to fight C. diff.

The bacterium C. diff can result in deadly diarrhea. As the most important cause of antibiotic associated diarrhea, accounting for 15 to 25% of cases, C. diff infection (CDI) is an important patient safety issue. In Illinois, C. diff hospital discharges more than doubled from 7,082 to 16,262 between 1999 and 2010. Although the numbers for Illinois long term care facilities are not yet tracked, C. diff is recognized as problematic in this setting and may well mirror the burden seen nationally: in the US, there are roughly 263,000 cases of nursing home onset CDI annually compared with 165,000 cases of hospital acquired hospital onset CDI. Recent estimates show that inpatient health care costs for each case of hospital onset CDI is \$5,047 to \$7,179, a significant expense for the patient and healthcare system.

CDI is preventable. The two groups of hospitals that participated in the Illinois C. diff Prevention Collaborative reduced their CDI rates by 15% and 26% during their participation period. ICE C. diff currently targets quality improvement, infection prevention, nursing, environmental services, and laboratory staff in hospitals and long term care facilities, but participation in campaign activities is not limited to these groups. Campaign activities include webinars (March to September 2012), regional workshops (summer 2012), and development of this C. diff resource website. Through collaboration within and across health facilities and organizations, we can prevent C. diff infections in Illinois.

# ICE C. diff Objectives

# **Funding**

ICE C. diff is funded through an Affordable Care Act grant from the Centers for Disease Control and Prevention.

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An official website of the United States government

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## Celiac Disease

#### **Definition & Facts**

Celiac disease is a chronic digestive and immune disorder that damages the small intestine. The disease is triggered by eating foods containing gluten. The disease can cause long-lasting digestive problems and keep your body from getting all the nutrients it needs.

## **Symptoms & Causes**

If you have celiac disease, you may experience digestive symptoms or symptoms in other parts of your body. Digestive symptoms are more common in children than adults. Some people with celiac disease have no symptoms.

## **Diagnosis**

Doctors use information from your medical and family history, a physical exam, and medical test results to look for signs that you could have celiac disease. Doctors diagnose celiac disease with blood tests, biopsies of the small intestine, skin biopsies, and genetic tests.

#### **Treatment**

To treat celiac disease, you will need to follow a gluten-free diet. Your doctor will explain the gluten-free diet and may refer to you a registered dietitian who specializes in treating people who have celiac disease. A dietitian can teach you how to avoid gluten while eating a healthy, balanced diet.

# Eating, Diet, & Nutrition

If you have celiac disease, you will need to remove foods and drinks that contain gluten from your diet. Following a gluten-free diet can relieve celiac disease symptoms and heal damage to the small intestine. People with celiac disease need to follow a gluten-free diet for life.

#### **Clinical Trials**

The NIDDK conducts and supports clinical trials in many diseases and conditions, including digestive diseases. The trials look to find new ways to prevent, detect, or treat disease and improve quality of life.

# **Related Diagnostic Tests**

#### For Health Care Professionals

# Your Digestive System & How It Works

The digestive system is made up of the gastrointestinal (GI) tract—also called the digestive tract—and the liver, pancreas, and the gallbladder. The GI tract is a series of hollow organs joined in a long, twisting tube from the mouth to the anus.

## **Additional Languages**

This content is also available in:

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The NIDDK would like to thank: Joseph A. Murray, M.D., Mayo Clinic The NIDDK would like to thank: Joseph A. Murray, M.D., Mayo Clinic

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# **Cervical Cancer**

#### What is cervical cancer?

Cancer of the cervix, is a very common kind of cancer in women. The disease occurs when cancer (malignant) cells are found in the tissues of the cervix -- the opening of the uterus (womb). The cervix connects the uterus to the vagina (birth canal). Cancer of the cervix usually grows slowly over a period of time. Before cancer develops, cervical tissues change and cells that are not normal begin to appear (called dysplasia).

## What are the symptoms of cervical cancer?

Since there are usually no symptoms associated with cancer of the cervix, you must be sure your doctor does an important test, called the Pap smear, to look for it. The Pap smear is done by using a piece of cotton, a brush or a small wooden stick to gently scrape the outside of the cervix to pick up some cells that can be examined under a microscope.

Some women may qualify for low or no-cost Pap smears through the Illinois Breast and Cervical Cancer Program. Contact the Illinois Department of Public Health, Office of Women's Health, at 1-888-522-1282 for more information.

# Are there risk factors for developing cervical cancer?

According to the National Cancer Institute, strong risk factors include early age at first intercourse, a history of multiple sexual partners, genital human papillomavirus infection or other sexually transmitted disease (STD), the presence of other genital tract cancers, and prior squamous intra epithelial lesion (abnormal cells). Women 60 years of age and older are at greater risk for cervical cancer since they are less willing or able to seek medical care for screening or treating cervical cancer. Other risk factors include active or passive ("second-hand") smoking, poor nutrition and a current or past sexual partner with risk factors for STD, immunodeficiency or testing positive for HIV.

#### How is cervical cancer treated?

Treatments for cancer of the cervix depend on the stage of disease, the size of the tumor, age, overall physical condition and a woman's desire to have children. There are three kinds of treatment for women with cancer of the cervix: surgery (removing the cancer in an operation), radiation therapy (using high-dose X-rays or other high-energy rays to kill cancer cells) and chemotherapy (using drugs to kill cancer cells).

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# **Chagas Disease**

#### What is Chagas disease?

Chagas disease, also called American trypanosomiasis, is caused by infection with the parasite Trypanosoma cruzi. The parasite is primarily transmitted to humans by triatomine bugs (commonly known as kissing bugs). Although most infected with the parasite remain without symptoms, about 20-30 percent will develop serious complications making it a significant public health concern.

Image Source: U.S. Centers for Disease Control and Prevention http://www.cdc.gov/parasites/chagas/gen\_info/vectors/

#### In what parts of the world is Chagas disease found?

About 8 to 10 million people are infected with T. cruzi worldwide, most of whom are unaware of their infection. Areas with high rates of Chagas disease include Mexico, Central America and South America. It has been estimated that more than 300,000 persons are infected with T. cruzi in the United States, mostly as a result of immigration from countries where Chagas disease is common. Although the triatomine bug is found in the southern U.S., local transmission is thought to be very low.

# How is Chagas disease spread?

Transmission through a bite from the triatomine bug is the most common way of getting Chagas disease. The T. cruzi parasite is present in the bug's feces. The parasite can enter a human or animal when the bug defecates on the skin during or after its blood meal, allowing the parasite to enter through the bite wound. The parasite also can enter directly through the conjunctiva (eye) and other mucous membranes. Triatomine bugs live indoors in cracks and holes of inadequate housing, such as mud walls and thatched roofs, so individuals living in rural areas of endemic countries are most at risk.

Chagas disease can also be transmitted from mother to baby during pregnancy (congenital infection). It is estimated that 1 to 10percent of infected mothers will transmit the parasite to their infants. Only one case of mother-to-child transmission has been reported in the United States, however, about 63 to 315 unrecognized cases are estimated to occur each year.

Another mode of transmission is through blood transfusion or organ transplantation. 19 cases of transmission through organ transplantation and five cases of transfusion-associated Chagas disease have been reported in the U.S. Since 2007, blood banks in the United States have screened for and discarded blood donations testing positive for Chagas disease.

Other less common forms of transmission include oral transmission through undercooked food contaminated with T. cruzi and laboratory accidents involving work with the parasite.

# What are the signs and symptoms of Chagas disease?

Chagas disease has an acute and chronic phase. During the acute phase, most people have no symptoms or experience a non-specific, mild febrile illness. Other symptoms include eyelid swelling or swelling at the bite wound. Rarely during the acute phase, an infected individual can rapidly develop

myocarditis (inflammation of the heart muscle), heart failure or meningo-encephalitis (inflammation of the brain and its lining). The acute phase lasts about two months after infection.

During the chronic phase the parasite hides mainly in the heart and digestive muscles. Although most infected individuals never exhibit any symptoms, about 20 to 30 percent will develop more serious and life-threatening medical complications during the chronic phase. These can include heart failure, arrhythmias (irregular heart rhythm), and gastrointestinal complications such as megaesophagus (dilated esophagus).

#### How is Chagas disease diagnosed?

To diagnose Chagas disease your health care provider will perform:

#### What should I do if I think I have Chagas disease?

If you think you have Chagas disease (e.g., if your blood bank notified you of a positive test result), please see a health care provider. Your health care provider can contact the U.S. Centers for Disease Control and Prevention (CDC) for further guidance and access to Chagas disease medications, if needed. CDC services are available by phone at 404-718-4745 or by e-mail at chagas@cdc.gov.

If you have been diagnosed with Chagas disease, you should not attempt to donate blood.

#### Can Chagas disease be treated?

Complications of the disease can be avoided if treatment is provided early in the course of the infection. Treatment for Chagas disease involves antiparasitic medications. Individuals diagnosed with Chagas disease that meet the following criteria should be treated:

Adults with chronic Chagas disease also may benefit from antiparasitic treatment. Consult with your healthcare provider for further recommendations. Medications for Chagas disease are only available through the CDC and your health care provider can speak with CDC staff about treatment options. Should my family members be tested if I have Chagas disease? Your family members should be tested if:

# How can Chagas disease be prevented?

No drugs or vaccines for preventing Chagas disease are currently available. Triatomine bugs often live in poorly constructed buildings, such as those made of mud walls and thatched roofs. Improving housing conditions and using insecticides inside homes have decreased the spread of the disease in endemic countries. In the U.S., efforts to prevent Chagas disease are targeted at blood transfusions, organ transplantations and reducing mother-to-child transmission.

# Am I at risk of Chagas disease during travel?

Risk of Chagas disease for short-term travelers to endemic areas (Mexico, Central America and South America) is very low. Travelers can reduce their risk of infection by sleeping under insecticide-treated bed nets and staying in well-constructed accommodations.

#### Additional resources:

CDC services, including physician consultation regarding testing and treatment, are available by phone at 404-718-4745 or by e-mail at chagas@cdc.gov.

For more information on Chagas disease, please visit the CDC website at http://www.cdc.gov/parasites/chagas/.

For health care providers needing further guidance on the evaluation and treatment of Chagas disease, click on this link to the review article Evaluation and Treatment of Chagas Disease in the United States: A Systematic Review (JAMA 2007: 298:2171-81).

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Sexually Transmitted Diseases (STD)

#### Chancroid

#### What is chancroid?

Chancroid is a highly contagious yet curable sexually transmitted disease (STD) caused by the bacteria Haemophilus ducreyi [hum-AH-fill-us DOO-cray]. Chancroid causes ulcers, usually of the genitals. Swollen, painful lymph glands, or inguinal buboes [in-GWEEN-al BEW-boes], in the groin area are often associated with chancroid. Left untreated, chancroid may facilitate the transmission of HIV.

#### How common is it?

The prevalence of chancroid has declined in the United States. When infection does occur, it is usually associated with sporadic outbreaks. Worldwide, chancroid appears to have declined as well, although infection might still occur in some regions of Africa and the Caribbean. Chancroid, as well as genital herpes and syphilis, is a risk factor in the transmission of HIV infection.

A definitive diagnosis of chancroid requires the identification of H. ducreyi on special culture media that is not widely available from commercial sources; even when these media are used, sensitivity is less than 80 percent. No FDA-cleared PCR test for H. ducreyi is available in the United States, but such testing can be performed by clinical laboratories that have developed their own PCR test and have conducted a CLIA verification study.

The combination of a painful genital ulcer and tender suppurative inguinal adenopathy suggests the diagnosis of chancroid. A probable diagnosis of chancroid, for both clinical and surveillance purposes, can be made if all of the following criteria are met: 1) the patient has one or more painful genital ulcers; 2) the patient has no evidence of T. pallidum infection by darkfield examination of ulcer exudate or by a serologic test for syphilis performed at least seven days after onset of ulcers; 3) the clinical presentation, appearance of genital ulcers and, if present, regional lymphadenopathy are typical for chancroid; and 4) a test for HSV performed on the ulcer exudate is negative.

# How do people get chancroid?

Chancroid is transmitted in two ways:

A person is considered to be infectious when ulcers are present. There has been no reported disease in infants born to women with active chancroid at time of delivery.

# What are the signs or symptoms of chancroid?

# How is chancroid diagnosed?

Diagnosis is made by isolating the bacteria Haemophilus ducreyi in a culture from a genital ulcer. The chancre is often confused with syphilis, herpes or lymphogranuloma venereum; therefore, it is important that your health care provider rule these diseases out. A Gram stain to identify H. ducreyi is possible but can be misleading because of other organisms found in most genital ulcers.

#### What is the treatment for chancroid?

Successful treatment for chancroid cures the infection, resolves the clinical symptoms, and prevents transmission to others. In advanced cases, scarring can result, despite successful therapy. Antibiotics used to treat chancroid include; Azithromycin 1 g orally, Ceftriaxone 250 mg intramuscularly (IM), Ciprofloxacin 500 mg orally or Erythromycin 500 mg orally. Ciprofloxacin is contraindicated for pregnant and lactating women. Azithomycin and ceftriaxone offer the advantage of single-dose therapy. Worldwide, several isolates with intermediate resistance to either ciprofloxacin or erythromycin have been reported. However, because cultures are not routinely performed, data are limited regarding the current prevalence of antimicrobial resistance.

#### Follow-up

Patients should be re-examined three days to seven days after initiation of therapy. If treatment is successful, ulcers usually improve symptomatically within three days and objectively within seven days after therapy. If no clinical improvement is evident, the clinician must consider whether 1) the diagnosis is correct, 2) the patient is coinfected with another STD, 3) the patient is infected with HIV, 4) the treatment was not used as instructed, or 5) the H. ducreyi strain causing the infection is resistant to the prescribed antimicrobial. The time required for complete healing depends on the size of the ulcer; large ulcers might require greater than two weeks. In addition, healing is slower for some uncircumcised men who have ulcers under the foreskin. Clinical resolution of fluctuant lymphadenopathy is slower than that of ulcers and might require needle aspiration or incision and drainage, despite otherwise successful therapy. Although needle aspiration of buboes is a simpler procedure, incision and drainage might be preferred because of reduced need for subsequent drainage procedures.

#### **Other Management Considerations**

Men who are uncircumcised and patients with HIV infection do not respond as well to treatment as persons who are circumcised or HIV-negative. Patients should be tested for HIV infection at the time chancroid is diagnosed. If the initial test results were negative, a serologic test for syphilis and HIV infection should be performed three months after the diagnosis of chancroid.

#### Special Considerations

#### Pregnancy

Ciprofloxacin is contraindicated during pregnancy and lactation. No adverse effects of chancroid on pregnancy outcome have been reported.

# How can chancroid be prevented?

If you do get chancroid, avoid contact with the infected area to prevent chance of spreading the infection to other parts of the body.

# Why worry?

Chancroid has been well established as a cofactor for HIV transmission. Moreover, persons with HIV may experience slower healing of chancroid, even with treatment, and may need to take medications for a longer period of time. Complications from chancroid include:

# What should I tell my partner?

You should talk to your partner as soon as you learn you have chancroid. Telling a partner can be hard, but it's important that you talk to your partner as soon as possible so she or he can get treatment.

#### How do I address the subject with my health care provider?

If you have a genital ulcer or painful, swollen lymph nodes, you need to talk to your doctor about whether or not you should be tested. However, it's important to remember that some people, usually women, are asymptomatic. If you are having unprotected sex or discover that your partner is having unprotected sex with another person, you may want to ask your doctor about being tested for STDs.

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# Chickenpox

#### What is chickenpox?

Chickenpox, a highly contagious disease caused by a virus called varicella zoster, is one of the most commonly reported childhood diseases. Usually mild and not life-threatening to otherwise healthy children, it may be severe in infants, adults and persons with impaired immune systems. Infection confers long immunity; second attacks are rare.

#### How is chickenpox spread?

Chickenpox is one of the most readily communicable diseases. It can be spread from person to person by direct contact with fluid from the blisters or with secretions from the respiratory tract or by handling an infected person's clothing or bedding. Airborne transmission is possible through sneezing and coughing. Susceptibility to chickenpox is universal among those not previously infected. The greatest number of cases occur in the winter and early spring.

#### What are the symptoms of chickenpox?

Symptoms, which usually start about two weeks after exposure (range is 10 to 21 days), include a fever, a feeling of tiredness and an itchy rash. The rash--or the pox--generally starts as little red spots on the chest, stomach or back and then on the face. The infected person may get only a few spots or a cluster of spots, or he or she may develop hundreds of spots during the first three to five days of the rash. The spots change into clear blisters filled with fluid. These blisters become cloudy, can break open and form a crust or scab in two to four days. The scabs can be very itchy. Chickenpox is contagious one to two days before the rash appears and until all blisters have formed scabs.

# Who is most at risk of complications from chickenpox?

Children usually do not develop complications. Those at increased risk for complications (generally pneumonia or bacterial infection of lesions) are immunocompromised persons, infants younger than 1 year of age, adolescents and adults, newborns whose mothers had chickenpox around the time of delivery, or premature infants whose mothers have not had chickenpox. Approximately one in every 400 persons who get chickenpox requires hospitalization. There are about 90 deaths a year from chickenpox in the United States.

Chickenpox infection apparently remains latent and may recur years later as herpes zoster (shingles). The incidence of shingles increases with age. Persons with HIV infection are also at increased risk of shingles.

# Is there a vaccine for chickenpox?

In 1995, the federal Food and Drug Administration approved a vaccine to immunize children and other susceptible individuals against chickenpox. Children vaccinated at 12 months through 12 years of age require one dose. After age 13, natural varicella is more severe, complications are more frequent, and two doses of vaccine, given four to eight weeks apart, are needed.

All adolescents 13 years of age and older and adults who may be susceptible to chickenpox should be assessed for possible vaccination. Specific efforts should be focused on those at highest risk of exposure and of transmitting disease to others. Vaccination is recommended for susceptible persons who will have close contact with persons at high risk for serious complications. This includes health care workers and susceptible family contacts of immunocompromised individuals. Vaccination should be considered for susceptible persons in the following groups who are at high risk of exposure:

# Is vaccination for chickenpox required for attendance in day care and schools?

Yes, effective July 1, 2002, the following children are required to show proof of immunity to varicella:

The immunization rules allow doctors, health officials (for example, local health department staff) and child care or school health professionals (for example, school nurses or health aides) to verify that a parent's or legal guardian's description of chickenpox disease history indicates past infection and to accept such history as documentation that a child has had the disease. If a parent indicates on the child health exam form that the child has had chickenpox, a health care provider must still verify this, including the date (or approximate date) of illness, and sign the health exam form. Laboratory evidence of past varicella infection is also acceptable.

#### If exposure occurs, can chickenpox be prevented?

Some newborn babies, any immunodeficient child and any susceptible persons older than 14 years of age who have not had chickenpox before may need a shot of varicella zoster immune globulin (VZIG) to try to prevent chickenpox after being exposed. VZIG needs to be given as soon as possible but within 96 hours after exposure to chickenpox.

#### How is chickenpox treated?

If a person develops chickenpox, acetaminophen can be given to reduce fever. Do not give aspirin to young children; it may cause Reye syndrome. Calamine lotion and antihistamines can help reduce itching.

Acyclovir is a drug that is now given to some people within the first day after rash onset to make the symptoms of chickenpox milder. Check with your physician.

## Where can I get more information?

If you have questions about chickenpox or about immunizations, contact your doctor or your local health department.

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Sexually Transmitted Diseases (STD)

# Chlamydia

#### What is chlamydia?

Chlamydia is a common sexually transmitted disease (STD) caused by infection with Chlamydia trachomatis. It can cause cervicitis in women and urethritis and proctitis in both men and women. Chlamydial infections in women can lead to serious consequences including pelvic inflammatory disease (PID), tubal factor infertility, ectopic pregnancy, and chronic pelvic pain. Lymphogranuloma venereum (LGV), another type of STD caused by different serovars of the same bacterium, occurs commonly in the developing world, and has more recently emerged as a cause of outbreaks of proctitis among men who have sex with men (MSM) worldwide.

#### How common is chlamydia?

Chlamydia is the most frequently reported bacterial sexually transmitted infection in the United States. In 2010, 1.4 million cases of chlamydia were reported to the U.S. CDC from 50 states and the District of Columbia, but an estimated 2.86 million infections occur annually. A large number of cases are not reported because most people with chlamydia do not have symptoms and do not seek testing. Chlamydia is most common among young people. It is estimated that one in 15 sexually active females aged 14-19 years has chlamydia.

## How do people get chlamydia?

People get chlamydia by having sex (anal, vaginal or oral) with someone who has the infection. Chlamydia can still be transmitted even if a man does not ejaculate. People who have had chlamydia and have been treated can get infected again if they have sex with an infected person. Chlamydia can be spread from an infected woman to her baby during childbirth.

## Who is at risk for chlamydia?

Any sexually active person can be infected with chlamydia. Anyone with genital symptoms such as discharge, burning during urination, unusual sores, or rash should refrain from having sex until they are able to see a health care provider about their symptoms.

Also, anyone with an oral, anal or vaginal sex partner who has been recently diagnosed with an STD should see a health care provider for evaluation.

Because chlamydia is usually asymptomatic, screening is necessary to identify most infections. Screening programs have been demonstrated to reduce rates of adverse sequelae in women. CDC recommends yearly chlamydia screening of all sexually active women age 25 or younger and older women with risk factors for chlamydial infections (e.g., women who have a new or more than one sex partner). Pregnant women should be screened during their first prenatal care visit. Pregnant women younger than 25 or at increased risk for chlamydia (e.g., women who have a new or more than one sex partner) should be screened again in their third trimester. Any woman who is sexually active should discuss her risk factors with a health care provider who can then determine if more frequent screening is necessary.

Routine screening is not recommended for men. However, the screening of sexually active young men should be considered in clinical settings with a high prevalence of chlamydia (e.g., adolescent clinics, correctional facilities, and STD clinics) when resources permit and do not hinder screening efforts in women.

Men who have sex with men (MSM) who have receptive anal sex should be screened for chlamydia each year. MSM who have multiple and/or anonymous sex partners should be screened more frequently (e.g., at three to six month intervals).

HIV-infected sexually active women who are age 25 or younger or have other risk factors, and all HIV-infected patients who report having receptive anal sex should be screened for chlamydia at their first HIV care visit and then at least annually. A patient's health care provider might determine more frequent screening is necessary, based on the patient's risk factors.

#### What are the symptoms?

Chlamydia is known as a "silent" infection because most infected people have no symptoms. If symptoms do occur, they may not appear until several weeks after exposure. Even when it causes no symptoms, chlamydia can damage a woman's reproductive organs.

In women, the bacteria first infect the cervix (structure that connects the vagina or birth canal to the uterus or womb) and/or the urethra (urine canal). Some infected women have an abnormal vaginal discharge or a burning sensation when urinating. Untreated infections can spread upward to the uterus and fallopian tubes (tubes that carry fertilized eggs from the ovaries to the uterus), causing pelvic inflammatory disease (PID). PID can be silent, or can cause symptoms such as abdominal and pelvic pain. Even if PID causes no symptoms initially, it can lead to infertility (not being able to get pregnant) and other complications later on.

Some infected men have discharge from their penis or a burning sensation when urinating. Pain and swelling in one or both testicles (known as "epididymitis") may occur, but is less common. Chlamydia can infect the rectum in men and women, either through receptive anal sex, or possibly via spread from the cervix and vagina. While these infections often cause no symptoms, they can cause rectal pain, discharge, and/or bleeding (known as "proctitis").

# What kinds of complications can the infection cause?

The initial damage that chlamydia causes often goes unnoticed. However, chlamydial infections can lead to serious health problems.

In women, untreated infection can spread upward to the uterus and fallopian tubes (tubes that carry fertilized eggs from the ovaries to the uterus), causing pelvic inflammatory disease (PID). PID can be silent, or can cause symptoms such as abdominal and pelvic pain. Both symptomatic and silent PID can cause permanent damage to a woman's reproductive tract and lead to long-term pelvic pain, inability to get pregnant and potentially deadly ectopic pregnancy (pregnancy outside the uterus).

Complications are rare in men. Infection sometimes spreads to the tube that carries sperm from the testis, causing pain, fever, but, rarely, preventing a man from being able to father children.

# How does chlamydia affect a pregnant woman and her baby?

In pregnant women, untreated chlamydia has been associated with pre-term delivery, and can spread to the newborn, causing an eye infection or pneumonia. Screening and treatment of chlamydia during pregnancy is the best way to prevent these complications. All pregnant women should be screened for chlamydia at their first prenatal visit.

#### How is chlamydia diagnosed?

There are laboratory tests to diagnose chlamydia. Specimens commonly used for testing include a cotton swab of the vagina (collected by the woman herself or her health care provider) or a urine sample.

#### How is chlamydia treated?

Penicillin is not effective against chlamydia.

Chlamydia can be easily treated and cured with antibiotics. HIV-positive persons with chlamydia should receive the same treatment as those who are HIV-negative.

Persons with chlamydia should abstain from having sex for seven days after single dose antibiotics, or until completion of a seven-day course of antibiotics, to prevent spreading the infection to partners.

Repeat infection with chlamydia is common. Persons whose sex partners have not been appropriately treated are at high risk for re-infection. Having multiple chlamydial infections increases a woman's risk of serious reproductive health complications, including pelvic inflammatory disease and ectopic pregnancy. Women and men with chlamydia should be retested about three months after treatment of an initial infection, regardless of whether they believe that their sex partners were successfully treated.

Infants infected with chlamydia may develop conjunctivitis (infection of the membrane lining the eyelids) and/or pneumonia. Chlamydial infection in infants can be treated with antibiotics.

#### What about partners?

If a person has been diagnosed and treated for chlamydia, he or she should tell all anal, vaginal or oral sex partners from the past two months so that they can see a health care provider and be treated. This will reduce the risk that the sex partners will develop serious complications from chlamydia and will reduce the person's risk of becoming re-infected. A person with chlamydia and all of his or her sex partners must avoid having sex until they have completed their treatment for chlamydia (i.e., seven days after a single dose of antibiotics or until completion of a seven-day course of antibiotics) and until they no longer have symptoms.

To help get partners treated quickly, health care providers may give patients extra medicine or prescriptions to give to their sex partners. This is called expedited partner therapy or EPT. EPT is only available in some parts of the country, it is available in Illinois. Consult a health care provider to find out if it is available in a specific area. Sex partners should still be encouraged to see a health care provider, regardless of whether they receive EPT.

## How can chlamydia be prevented?

Not having sex is the best protection against chlamydia and other STDs. Having sex with only one uninfected partner who only has sex with you is also safe. Latex male condoms, when used consistently and correctly, can reduce the risk of getting or giving chlamydia. The surest way to avoid chlamydia is to abstain from vaginal, anal and oral sex or to be in a long-term mutually monogamous relationship with a partner who has been tested and is known to be uninfected.

IDPH HIV/STD Hotline - 800-243-2437 (TTY 800-782-0423)

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# **Chronic Fatigue Syndrome**

#### What is Chronic Fatigue Syndrome?

Chronic Fatigue Syndrome (CFS) is not the normal ups and downs experienced in everyday life. The early sign of this illness is a strong and noticeable fatigue that comes on suddenly and often comes and goes or never stops. It is not improved by bed rest and may be worsened by physical or mental activity. Persons with CFS most often function at a substantially lower level of activity than they were capable of before the onset of the illness. CFS is diagnosed two to four times more often in women than in men possibly because of biological, psychological and social influences.

# What are the symptoms/warning signs of Chronic Fatigue Syndrome?

In order to be diagnosed with CFS a patient must satisfy two criteria. Severe chronic fatigue must have lasted at least six months with other known medical conditions excluded by clinical diagnoses. Also, a person must concurrently have four or more of the following symptoms: substantial impairment in short-term memory or concentration; sore throat; tender lymph nodes; muscle pain; multi-joint pain without swelling or redness; headaches of a new type, pattern or severity; unrefreshing sleep; and post-exertional malaise lasting more than 24 hours. The symptoms must have persisted or recurred during six or more consecutive months and must not have predated the fatigue.

# What causes Chronic Fatigue Syndrome?

Despite a vigorous search, the cause(s) for CFS remain unknown. One possibility may be that CFS represents an endpoint of disease resulting from multiple precipitating causes. Some conditions that have been proposed to trigger the development of CFS include viral infections or other transient traumatic conditions, stress and toxins.

# Are there any risk factors?

Research indicates that CFS is most common in people in their 40s and 50s and women are more likely than men to be affected.

## Is there any treatment?

There is currently no cure for CFS. The therapies for this disorder are directed at symptom relief. It is important to maintain good health by eating a balanced diet and getting adequate rest, exercising regularly without causing more fatigue, and pacing oneself because too much stress can aggravate the symptoms of CFS. Working with a physician to develop a program that provides the greatest benefits also will help in reducing frustration with the illness.

Non-pharmacological therapies include acupuncture, aquatic therapy, chiropractic, cranial-sacral, light exercise, massage, self-hypnosis, stretching, tai chi, therapeutic touch and yoga. Certain psychotherapies such as cognitive behavioral therapy also have shown promise for facilitating patient

coping and for alleviating some of the distress associated with CFS.

In pharmacological therapy there is a variety of medications that can relieve specific symptoms. It is important to begin with low doses and to escalate the dosage gradually as necessary.

Some CFS patients may also find it therapeutic to meet with other people who have this illness, and this can be accomplished by joining a local CFS support group. Support groups are not appropriate for everyone, and may actually add to their stress rather than relieving it.

#### What is the prognosis?

The clinical course of CFS varies considerably among persons who have the disorder. The actual percentage of patients who recover is unknown, and even the definition of what should be considered recovery is subject to debate. Some patients recover to the point where they can resume work and other activities, but continue to experience various or periodic CFS symptoms. Some patients recover completely with time, and some grow progressively worse. CFS follows a cyclical course, alternating between periods of illness and relative well being.

#### Resources

MEDLINEplus 800-338-7657 http://www.nlm.nih.gov/medlineplus/chronicfatiguesyndrome.html National Institute of Allergy and Infectious Diseaseshttp://www.niaid.nih.gov/factsheets/cfs.htm U.S. Centers for Disease Control and Prevention National Center for Infectious Diseases 888-232-3228 www.cdc.gov /cfs

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# Cytomegalovirus (CMV) and Congenital CMV Infection

Cytomegalovirus (CMV) is a common virus that infects people of all ages. Most people infected with CMV show no signs or symptoms. However, CMV infection can cause serious health problems for people with weakened immune systems, as well as babies infected with the virus before they are born (congenital CMV).

#### **About CMV**

#### Signs and Symptoms

Most people with CMV infection have no symptoms and aren't aware that they have been infected. In some cases, infection in healthy people can cause mild illness that may include fever, sore throat, fatigue, and swollen glands. Occasionally, CMV can cause mononucleosis or hepatitis (liver problem).

People with weakened immune systems who get CMV can have more serious symptoms affecting the eyes, lungs, liver, esophagus, stomach, and intestines. Babies born with CMV can have brain, liver, spleen, lung, and growth problems. Hearing loss is the most common health problem in babies born with congenital CMV infection, which may be detected soon after birth or may develop later in childhood.

#### Transmission and Prevention

People with CMV may shed (pass) the virus in body fluids, such as urine, saliva, blood, tears, semen, and breast milk. CMV is spread from an infected person in the following ways:

Regular hand washing, particularly after changing diapers, is a commonly recommended step to decrease the spread of infections, and may reduce exposures to CMV.

Health care providers should follow standard precautions. For more recommendations in healthcare settings, see the Guide to Infection Prevention for Outpatient Settings.

#### Diagnosis and Treatment

Blood tests can be used to diagnose CMV infections in adults who have symptoms. However, blood is not the best fluid to test newborns with suspected CMV infection. Tests of saliva or urine are preferred for newborns. Healthy people who are infected with CMV usually do not require medical treatment. Medications are available to treat CMV infection in people who have weakened immune systems and babies who show symptoms of congenital CMV infection.

#### For Pregnant Women

You can pass CMV to your baby. If you are pregnant and have CMV, the virus in your blood can cross through your placenta and infect your developing baby. This is more likely to happen if you have a first-time CMV infection while pregnant but can also happen if you have a subsequent infection during pregnancy.

You are not likely to be tested for CMV. It is not recommended that doctors routinely test pregnant women for CMV infection. This is because laboratory tests cannot predict which developing babies will become infected with CMV or have long-term health problems.

You may be able to reduce your risk. You may be able to lessen your risk of getting CMV by reducing contact with saliva and urine from babies and young children. Some ways do this are:

These steps cannot eliminate your risk of getting CMV, but may lessen your chances of getting it.

#### **Babies Born with CMV (Congenital CMV Infection)**

When a baby is born with cytomegalovirus (CMV) infection, it is called congenital CMV infection. About one out of every 200 babies are born with congenital CMV infection. However, only about one in five babies with congenital CMV infection will be sick from the virus or will have long-term health problems.

Women can pass CMV to their baby during pregnancy. The virus in the woman's blood can cross through the placenta and infect the baby. This can happen when a pregnant woman experiences a first-time infection, a reinfection with a different CMV strain (variety), or a reactivation of a previous infection during pregnancy.

Most babies with congenital CMV infection never show signs or have health problems. However, some babies may have health problems that are apparent at birth or may develop later during infancy or childhood. Although not fully understood, it is possible for CMV to cause the death of a baby during pregnancy (pregnancy loss).

Some babies may have signs of congenital CMV infection at birth. These signs include:

Some babies with signs of congenital CMV infection at birth may have long-term health problems, such as hearing loss, vision loss, intellectual disability, small head size, lack of coordination, weakness or problems using muscles, and seizures. Some babies without signs of congenital CMV infection at birth may have hearing loss. Hearing loss may be present at birth or may develop later in babies who passed their newborn hearing test.

Congenital CMV infection can be diagnosed by testing a newborn baby's saliva, urine, or blood. Such specimens must be collected for testing within two to three weeks after the baby is born in order to confirm a diagnosis of congenital CMV infection.

Medicines, called antivirals, may decrease the risk of health problems and hearing loss in some infected babies who show signs of congenital CMV infection at birth. Use of antivirals for treating babies with congenital CMV infection who have no signs at birth is not currently recommended. Babies with congenital CMV infection, with or without signs at birth, should have regular hearing checks. Regularly follow-up with your baby's doctor to discuss the care and additional services your child may need.

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#### **Colon Cancer**

#### Should women be concerned about colon cancer?

While it does not get the attention of other cancers, colorectal cancer is the third leading cause of cancer-related deaths for Illinois women. It is also one of the easiest cancers to prevent and detect.

#### What are the symptoms of colon cancer?

Colon cancer often has no symptoms. However, rectal bleeding can be a warning sign and should never be ignored. Notify your physician so that a detailed medical history, X-ray, and possibly endoscopic evaluation may be done to make a diagnosis.

#### Are some people at higher risk for colon cancer?

You may be at increased risk for colon cancer if you have a history of colitis due to Crohn's disease or ulcerative colitis (which are both characterized by diarrhea). If you have a family history of colon cancer, you might also be at increased risk. It is a common misconception that colon cancer is a disease that primarily strikes men. An equal number of men and women die from colon cancer every year.

## What are the treatment options for colon cancer?

Surgery is the most common treatment, followed by chemotherapy for patients in the later stages of colon cancer. Evidence suggests that the administration of non-steroidal anti-inflammatory drugs (NSAIDs) is an option in the prevention of sporadic colon cancer by reducing the incidence and size of the cancer.

# What are the screening tests for colon cancer?

Fecal occult blood testing is a chemical test for blood in the feces. This is a simple and painless test done by obtaining a smear of feces and placing it on a strip. It can be done at your doctor's office or at home.

Flexible sigmoidoscopy is a procedure during which a hollow, lighted tube is inserted in the rectum to detect growths in the lower section of the colon where most tumors appear.

Screen all adults aged 45 to 75 years for colorectal cancer.

Digital rectal examination is done by a doctor, but it only detects tumors near the anus.

Colonoscopy also uses a hollow, lighted tube called a colonoscope to inspect the entire colon. The colonoscope allows the physician to take a biopsy or to remove a polyp if found. It is recommended to be done every 5-10 years or as a follow-up to a positive screening.

# How can I reduce my risk for colon cancer?

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#### **Colorectal Cancer**

#### What is Colorectal Cancer?

Colorectal cancer starts in the colon or rectum. Colon and rectal cancers begin in the digestive system, also called the gastrointestinal (GI) system.

In most cases, colon and rectal cancers develop slowly over a period of several years. Colon and rectal cancer have many features in common and are often referred to as "colorectal cancer." Most colorectal cancers begin as polyps. Colorectal polyps are tiny, grape-like growths inside the colon or rectum that may become cancerous.

Colorectal cancer is the third most common cancer in both men and women, and the second most common cause of U.S. cancer deaths when men and women are combined. Each year, an estimated 6,600 Illinoisans will be diagnosed with colorectal cancer, and more than 2,400 people will die from it. Screening tests, including colonoscopies, are one of the best ways to prevent colorectal cancer. Screening can often find colorectal cancer early, when it is most likely to be cured.

Facts: According to the Illinois State Cancer Registry 2017 data, 3,201 new colorectal cancer cases were diagnosed in males and 2,872 colorectal cancer cases in females. Out of these cases, there were 1,146 deaths in males and 1,077 deaths in females.

#### What are the Causes and Risk Factors of Colorectal Cancer?

The exact causes of colorectal cancer are not known. Common risk factors include:

# What are the Symptoms of Colorectal Cancer?

There are often no symptoms of colorectal cancer in its early stage. When symptoms are present, they include one or more of the following:

These symptoms may be caused by advanced colorectal cancer or some other condition. It is important to report any of these symptoms to your health care provider.

#### **How to Prevent Colorectal Cancer**

The U.S. Preventive Services Task Force recommends these tests to screen for colorectal cancer:

#### National Colorectal Cancer Roundtable (NCCRT)

The National Colorectal Cancer Roundtable, established by the American Cancer Society (ACS) and the Centers for Disease Control and Prevention (CDC) in 1997, is a national coalition of public organizations, private organizations, voluntary organizations, and invited individuals.

The goal of the NCCRT is to increase the use of proven colorectal cancer screening tests among the entire population for whom screening is appropriate and is dedicated to reducing the incidence of and mortality from colorectal cancer in the U.S., through coordinated leadership, strategic planning, and advocacy.

#### Illinois Colorectal Cancer Roundtable (ILCCRT)

Illinois was one of five states selected to participate in the Comprehensive Cancer Control National Partnership 80% by 2018 forum. The 80% by 2018 initiative brings together diverse organizations in a commitment to ensuring 80% of adults aged 50 and older are being regularly screened for colorectal cancer (CRC) by 2018. Statewide partners came together to create the Illinois Colorectal Cancer Roundtable (ILCCRT) with the shared goal of presenting evidence based strategies advancing local implementation of the state cancer plan CRC screening objectives, by collaborating with local health departments and Federally Qualified Health Centers (FQHCs). NCCRT still continues the progress of the 80% by 2018 initiative by working towards the goal and commitment of 80% in every community. 128 pledges have been made in Illinois for the 80 % in every community initiative.

The ILCCRT is a call to action to address immediate challenges and opportunities regarding colorectal cancer in the State of Illinois. It reflects the values, ideas, and actions of a determined group of people from affected communities, advocacy organizations, and health delivery services focuses on eliminating cancer. The purpose is to engage in a dialogue that leads to action on the issues; increase screening rates; advance solutions to the disease burden; and establish a centralized communication hub for the various complex problems related to colorectal cancer in the state of Illinois.

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# Conjunctivitis

#### What is conjunctivitis?

Conjunctivitis is an inflammation of the thin, clear membrane (conjunctiva) that covers the white of the eye and the inside surface of the eyelids. Conjunctivitis, commonly known as "pink eye," is most often caused by a virus but also can be caused by bacterial infection, allergies (e.g., cosmetics, pollen) and chemical irritation.

#### How is it spread?

Anyone can get conjunctivitis. It can spread fairly easily from person to person, especially in dormitories, schools or other places where large numbers of persons congregate. People commonly get conjunctivitis by coming into contact with the tears or other eye discharges of an infected person, and then touching their own eyes. Hands, towels and washcloths can spread conjunctivitis. Symptoms normally appear a few days after contact with an infected person or an object contaminated with the virus (such as a towel).

Individuals with conjunctivitis may be contagious as long as symptoms persist or the eye appears abnormal. Risk of conjunctivitis increases with use of contact lenses, and touching/rubbing the eyes without handwashing first.

## What are the symptoms of conjunctivitis?

Symptoms of conjunctivitis may include the following:

Viral conjunctivitis often begins with fairly sudden onset of pain or the feeling of dust in the eye. Infection may begin in only one eye but often spreads to involve both.

# Should I contact a doctor if I develop symptoms of conjunctivitis?

You should contact your health care provider -

Other concerns, including the duration of your conjunctivitis symptoms, whether or not your symptoms are improving as expected, etc., should also be shared with your health care provider.

# How is conjunctivitis treated?

Treatment varies with the cause. There is no curative treatment for common viral conjunctivitis; it usually will go away by itself in one to six weeks. Lubricating eye drops sometimes help to ease symptoms. (Do not share these eye drops with other persons.) If symptoms last for more than 24-48 hours, or vision is affected, it is important to be seen by a health care practitioner. Other kinds of conjunctivitis often have specific treatments that may be prescribed.

A person with conjunctivitis should follow these general guidelines:

# Should contact lens wearers take special precautions?

# Can conjunctivitis be prevented?

Conjunctivitis can be prevented by practicing good hygiene.

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COPD Resources for Patients and Their Families

#### **Public Health Professionals**

**COPD** Resources for Health Professionals

National Trends in COPD

State Estimates of COPD

Adults Diagnosed with COPD by County

#### COPD

COPD prevents airflow to the lungs, causing breathing problems. The most common types are emphysema and chronic bronchitis. Smoking is the main cause of COPD.

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COVID-19

# **Coronavirus Disease 2019 (COVID-19)**

#### **Symptoms**

People with COVID-19 have had a wide range of symptoms reported - ranging from mild symptoms to severe illness. Symptoms may appear 2-14 days after exposure to the virus. People with COVID-19 may have these symptoms:

#### When To Seek Emergency Medical Attention

If someone is showing any of these signs, seek medical care immediately:

This list is not all possible symptoms. Please call your medical provider for any other symptoms that are severe or concerning to you.

#### **Transmission**

COVID-19 spreads when an infected person breathes out droplets and very small particles that contain the virus. These droplets and particles can be breathed in by other people or land on their eyes, noses, or mouth. In some circumstances, they may contaminate surfaces they touch.

Factors that lower or increase risk of transmission include:

#### Prevention

The best thing Illinoisians can do to protect themselves from COVID-19 is to stay up to date with their COVID-19 vaccinations. In addition, transmission of infectious respiratory diseases from one person to another can be greatly reduced by taking the following precautions:

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#### Crabs

#### What are crabs?

Crabs are parasites. Crabs are often referred to as pubic lice and are not to be confused with body lice. The scientific name for crabs is Pediculus pubis. Crabs need blood to survive, but they can live up to 24 hours off a human body. Crabs have three very distinct phases; egg, nit (egg or young louse), and adult louse. The louse is the stage of the parasite that causes itching. Louse is the singular for lice (like mouse and mice).

#### How common are they?

In the United States, there are an estimated 3 million cases of crabs every year.

#### How do people get crabs?

Sexual transmission - You can get crabs when you have skin-to-skin contact with another person. Even when there is no sexual penetration, you can get (or give) crabs.

Non-sexual transmission - You can get crabs from sleeping in an infested bed or using infested towels.

Pubic lice found on children may be a sign of sexual exposure or abuse.

Animals do not get or spread lice.

## What are the signs or symptoms of crabs?

# How are crabs diagnosed?

You can usually see the crabs yourself if you look closely enough. The adult pubic louse resembles a miniature crab which has six legs, but their two front legs are very large and look like the pincher claws of a crab; this is how they got the nickname "crabs." You might need a magnifying glass to help you identify them. If you are uncertain, have a health care provider examine you. He or she may need to use a microscope.

#### What is the treatment for crabs?

A lice-killing lotion containing 1 percent permethrin or a mousse containing pyrethrins and piperonyl butoxide can be used to treat pubic ("crab") lice. These products are available over-the-counter without a prescription at a local drug store or pharmacy. These medications are safe and effective when used exactly according to the instructions in the package or on the label.

Lindane shampoo is a prescription medication that can kill lice and lice eggs. However, lindane is not recommended as a first-line therapy. Lindane can be toxic to the brain and other parts of the nervous system; its use should be restricted to patients who have failed treatment with or cannot tolerate other medications that pose less risk. Lindane should not be used to treat premature infants, persons with a seizure disorder, women who are pregnant or breast-feeding, persons who have very irritated skin or

sores where the lindane will be applied, infants, children, the elderly, and persons who weigh less than 110 pounds.

Malathion\* lotion 0.5 percent (Ovide\*) is a prescription medication that can kill lice and some lice eggs; however, malathion lotion (Ovide\*) currently has not been approved by the U.S. Food and Drug Administration (FDA) for treatment of pubic ("crab") lice.

Ivermectin has been used successfully to treat lice; however, ivermectin currently has not been approved by the U.S. Food and Drug Administration (FDA) for treatment of lice.

#### How to treat pubic lice infestations:

(Warning: See special instructions for treatment of lice and nits on eyebrows or eyelashes. The lice medications described in this section should not be used near the eyes.)

# Special instructions for treatment of lice and nits found on eyebrows or eyelashes:

After you are cured, you may still have some itching as a result of a skin irritation or allergic reaction. If so, you can use hydrocortisone cream. Clothes and other items that cannot be washed can be placed in a plastic bag for two weeks. Repeat treatment in seven to ten days if lice are still found.

#### How can crabs be prevented?

Pubic ("crab") lice most commonly are spread directly from person to person by sexual contact. Pubic lice very rarely may be spread by clothing, bedding or a toilet seat.

#### Why should I worry about having crabs?

You may get a secondary infection as a result of scratching.

# Should I tell my partner?

Yes. Telling a partner can be hard. It's important that you talk to your partner as soon as possible so she or he can get treatment. Also, it is possible to pass crabs back and forth. If you get treated and your partner does not, you may get infected again. You will need to wash all clothes, sheets and towels in hot water (at least 130-degrees F).

## Should I tell my healthcare provider that I had crabs?

Yes. If you have one sexually transmitted disease, you may be at risk for others. You may want to ask your doctor or nurse about being tested for other STDs.

IDPH HIV/STD Hotline: 800-243-2437 (TTY 800-782-0423)

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Patient Safety & Quality

# **CRE Campaign**

#### **Background**

The Illinois Department of Public Health is leading the statewide CRE Detect and Protect education campaign to promote practices that prevent carbapenem-resistant Enterobacteriaceae (CRE) infections. CRE are extensively drug-resistant organisms (XDROs) with few antibiotic treatment options that can transfer their resistance to other bacteria. These deadly superbugs have been increasingly detected among patients in Illinois.

As part of the campaign, the Department is working with hospitals, long-term care facilities and laboratories to adopt the U.S. Centers for Disease Control and Prevention strategy of detecting CRE and protecting patients through appropriate infection control and prevention measures. The Department is providing educational materials and training on CRE prevention and use of the XDRO registry, which is a tool for sharing patient information across facilities and reporting CRE isolates to the Department. A statewide CRE Task Force comprised of infectious disease and infection prevention experts is helping to guide efforts.

Campaign participants have the opportunity to learn from other health care facilities, laboratories and CRE experts committed to this issue. Preventing the spread of these drug-resistant infections will result in better outcomes for patients and reduced health care costs.

## **Funding**

The CRE Detect and Protect Campaign is funded by a Prevention and Public Health Fund award from the U.S. Centers for Disease Control and Prevention.

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#### Creutzfeldt-Jakob Disease

#### What is Creutzfeldt-Jakob disease?

Creutzfeldt-Jakob disease (CJD) is a rare, fatal brain disorder caused by a prion. The disease causes mental deterioration and a variety of neurological symptoms, and usually leads to death within a year of onset.

There are various forms of CJD; in about 85 percent of the cases, the cause is unknown. One form of CJD may be linked to consumption of beef in Great Britain. Another form is familial or genetic, that is, relatives of a CJD case with the form are more likely to develop the disease than other persons. Many Americans first heard of the disease in 1983 when they learned it had claimed the life of New York City Ballet choreographer George Balanchine.

#### How does CJD affect the patient?

In early stages of the disease, patients may experience failing memory, changes in behavior, lack of coordination or visual disturbances. As the illness progresses, mental deterioration becomes pronounced, involuntary movements (especially muscle jerks) appear, and the patient may become blind, develop weakness in the arms or legs, and ultimately lapse into a coma. Death is usually due to infections in the bedridden, unconscious patient.

Symptoms of CJD can be similar to those seen in other progressive neurological disorders such as Alzheimer's disease and other dementias. However, CJD causes unique changes in brain tissue that, at this time, can be detected only by surgical biopsy or at autopsy.

# Who gets CJD?

The disease afflicts men and women of diverse ethnic backgrounds, appearing most often in those 50 to 75 years of age. Internationally, there is one CJD case per year for every million people.

An estimated 200 Americans die each year with Creutzfeldt-Jakob disease. National data indicate the annual CJD mortality rates in the United States between 1979 and 1993 remained relatively stable, ranging between 0.8 cases per million in both 1979 and 1990 and 1.1 cases per million in 1987.

#### What causes CJD?

Scientists agree that a prion that is transmissible causes Creutzfeldt-Jakob disease, but this agent has not yet been fully identified.

A prion is a protein comprising a specific sequence of amino acids. It is neither a virus nor any other previously known infectious agent, but rather an unconventional agent. Prions are thought to transform normal, benign protein molecules into deadly ones by altering their shape.

#### What is the connection between CJD and beef?

In 1996, officials in Great Britain announced that 10 cases of a previously unrecognized form of CJD had been identified and might be linked to consumption of beef from cattle with bovine spongiform encephalopathy (BSE), a disease that affected more than 177,500 cattle in that country from 1986 through 2000. British officials emphasized that current evidence is insufficient to establish a direct link between BSE and this new variant of CJD; however, such an association offers the most likely explanation for the occurrence of this cluster of cases. BSE has not been found in cattle in the United States, and beef and cattle from Great Britain cannot be imported into this country. More than 5,000 U.S. cattle that died of neurological disease have been tested and all were negative for BSE.

#### Is CJD contagious?

The low incidence of Creutzfeldt-Jakob disease indicates person-to-person transmission is rare. Spouses of patients and other household members have no higher risk of contracting the disorder than the general population.

There is evidence, however, that the prion can be introduced into the nervous systems of healthy persons during certain medical procedures, including corneal transplants. Creutzfeldt-Jakob disease also has been accidentally transmitted through implantation of contaminated electrodes in the brain. Clusters of Creutzfeldt-Jakob cases have been documented among patients undergoing neurosurgery at a few medical facilities.

In 1984 and 1985, at least four patients who had received human growth hormone to correct growth deficiencies died from CJD. Scientists suspect several batches of hormone, derived from human pituitary tissue, were contaminated by the Creutzfeldt-Jakob prion. The use of natural human growth hormone has been discontinued in the United States and Great Britain, and drug companies now are marketing a synthetic form of the hormone to avoid any possibility of such contamination.

#### Are health professionals at risk of contracting the disease?

In a few instances, CJD has occurred among physicians, dentists and other health care workers, possibly after having been exposed to the agent in the course of their work. However, the incidence of the disease in health care workers is not higher than in the remainder of the population. Health care professionals would be wise to take precautions when handling blood and spinal fluid samples taken from patients with CJD. Scientists recommend that health care workers —

## Is there any treatment for CJD?

No effective treatment for Creutzfeldt-Jakob disease is known. Drugs now are being evaluated against the laboratory-induced disease in rodents and nonhuman primates, but none has shown evidence of lasting benefit.

Currently, clinical studies include tests of antiviral drugs, such as amantadine, a compound useful in parkinsonism. Some patients taking these drugs have experienced brief periods of improvement and treatment has not proven harmful. To date, however, drugs have neither controlled nor cured the disease.

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# **Cryptosporidiosis**

#### What is cryptosporidiosis?

Cryptosporidiosis is a disease caused by an intestinal parasite. Watery diarrhea and often abdominal cramping are the major symptoms. Other symptoms include nausea, vomiting, fatigue, weight loss and low-grade fever. In some patients, symptoms will come and go and in other patients they will be persistent. Symptoms usually occur about a week after exposure, but can begin as soon as one day or as late as 12 days after exposure.

#### How do you get cryptosporidiosis?

The parasite Cryptosporidium parvum is found in the feces of infected animals and people. Persons, dogs and cats become infected when they swallow this parasite. This is one reason why hands should be washed after contact with pets. Hands also should be washed after changing a child's diaper and after using the toilet. Other activities that bring a person in contact with feces of another person can result in exposure. The parasite, which can be present in sewage or runoff from feed lots, can contaminate water sources, and several large waterborne outbreaks have occurred. Outbreaks also have occurred in child day care centers. In Illinois, 75-100 cases of cryptosporidiosis are reported annually.

## How serious is cryptosporidiosis?

Symptoms can last for up to 30 days in persons who are otherwise healthy. In persons with weakened immune systems, including people with HIV/AIDS and cancer, transplant patients taking immunosuppressive drugs and people with genetically weakened immune systems, symptoms can persist indefinitely. Persistent diarrhea due to cryptosporidiosis in these persons can lead to death.

## How is cryptosporidiosis diagnosed?

The patient's physician can order a special test to detect the presence of Cryptosporidium in a stool specimen. Routine stool examinations will not detect this parasite.

## How is cryptosporidiosis treated?

There is no effective cure for cryptosporidiosis. Persons with this disease should drink plenty of fluids and get extra rest. Physicians may prescribe medication to slow the diarrhea during recovery.

What should I do to protect myself against cryptosporidiosis?

What is the correct way to wash hands?

Are public water supplies free of Cryptosporidium?

Not necessarily. Cryptosporidium is common in the lakes and rivers that many public water supplies use. It is highly resistant to disinfection and even well-operated water treatment systems cannot ensure that drinking water will be completely free of Cryptosporidium.

#### Should I drink water from the public water supply?

If an outbreak of waterborne cryptosporidiosis is occurring in your community, boil water before drinking, drink bottled water, or drink water that has passed through a special filter. These protective measures must be used consistently in order to protect against infection.

It is not known whether severely immunocompromised persons are at increased risk if no waterborne outbreak of cryptosporidiosis is occurring in their communities. The risk is likely to vary from city to city, depending on the quality of the city's water source and the quality of water treatment. Current data do not support a recommendation that severely immunocompromised persons in all U.S. cities boil or avoid drinking tap water. Immunocompromised persons should consult with their physicians about what measures are best for them.

# What are my choices if my doctor advises me not to drink regular tap water?

#### To obtain a list of filters that meet NSF criteria, write to:

NSF International 3475 Plymouth Road P.O. Box 130140 789 N. Dixboro Road Ann Arbor, MI 48113-0140

Individuals who contact bottlers or filter manufacturers for information should request data supporting claims that a brand of bottled water or filter can meet the above criteria.

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# Cyclospora

#### What is Cyclospora?

Cyclospora is a one-celled parasite too small to be seen with the naked eye (only 8 to 10 microns in diameter). Its full name is Cyclospora cayetanensis. It used to be called by such names as cyanobacterium-like, coccidia-like and Cyclospora-like bodies (CLBs).

The first known cases of Cyclospora infection were diagnosed in 1977 (reported in the medical literature in 1979). Cases have been reported with increased frequency since the mid-1980s, in part because of the availability of better techniques for detecting the parasite in stool samples. During the spring of 1996, there was a multistate outbreak of Cyclospora, including cases and suspect cases in northeastern Illinois. Investigations in other states have linked infection to the consumption of strawberries or raspberries. Very few cases are reported each year in Illinois. Because Cyclospora is a newly recognized infectious organism, many questions about its biology, the ways it is spread and the illness it causes remain unanswered.

#### How is Cyclospora spread?

Cyclospora is spread by a person putting something in his or her mouth that was contaminated with infected stool. For example, the parasite can be transmitted by swallowing contaminated water or food. It is not known how common the various modes of transmission are, nor is it known whether animals can be infected and can serve as sources of infection for humans.

In contrast to many other organisms, Cyclospora is not infectious at the time it is passed in the stool of an infected person. In fact, the parasite does not become infectious until days to weeks after it is passed in the stool (the amount of time depends on factors such as temperature and humidity). Therefore, spread ofCyclospora directly from an infected person to someone else is unlikely. However, so-called indirect spread might occur. For example, Cyclospora might be spread if the stool of an infected person contaminates something in the environment (e.g., water) to which someone else is exposed after the parasite has had time to become infectious.

#### Who is at risk for infection?

Persons of all ages are at risk for infection. Although travelers to tropical countries may be at increased risk, infection can be acquired in such countries as the United States and Canada. The risk may vary with season. Some evidence suggests that infection is most common in spring and summer.

## What are the symptoms of infection?

Cyclospora infects the small intestine and typically causes an illness characterized by watery diarrhea, with an average of about six to seven stools per day. Other symptoms can include loss of appetite, weight loss, bloating, increased gas, stomach cramps, nausea, vomiting, tiredness, muscle aches and low-grade fever. Some persons notice flu-like symptoms before they notice the gastrointestinal symptoms. Some persons infected with Cyclospora do not develop any symptoms.

The length of time between becoming infected and developing symptoms probably averages at least several days and quite commonly is about a week. However, both shorter and longer intervals have been reported. If not treated, the illness may last for a few days to a month or longer and may come back one or more times. It is not known whether persons with compromised immune systems, such as persons who have AIDS, more commonly develop severe illness if infected with Cyclospora.

#### What should you do if you think you may be infected?

If you think you may be infected with Cyclospora, you should consult your physician. Identification of this parasite in stool requires special kinds of laboratory techniques that are not routinely used. Therefore, your physician should specifically request testing for this parasite. More than one stool sample may need to be checked to find the organism. Your physician also may want to have your stool checked for other infectious organisms that can cause similar symptoms.

#### How is the infection treated?

Infection with Cyclospora is treatable with antibiotics. Infected persons who have diarrhea should rest and drink plenty of fluids. They should seek their physician's advice before taking a medication to slow their diarrhea.

#### How can infection be prevented?

Based on the currently available information about how Cyclospora infection is spread, avoiding food and water that may be contaminated with stool probably is the best way to prevent infection. In addition, produce should be washed thoroughly before it is eaten. Infected persons should wash their hands often to prevent the spread of infection. Persons who have previously been infected with Cyclospora can become infected again.

# Director Shah appeared on Chicago Tonight to discuss the rise in cases of cyclosporiasis

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# **Depression**

#### What is depression?

Everyone gets the blues now and then, but when there is little joy or pleasure after visiting with friends or after seeing a good movie, there may be a more serious problem. A depressed mood that stays around for a while, without letting up, can change the way a person thinks or feels. Doctors call this "clinical depression." Depression is a common, serious illness and not a personal weakness. Depression can happen to anyone, at any age, and to people of any race or ethnic group. It is never a "normal" part of life. Depression, which is treatable, can come from chemical imbalances in the brain, hormonal changes, medications or things going on in your life.

Women suffer from depression twice as often as men. One out of four women may have depression sometime during their lifetime. Many people suffer with depression but do not seek help.

## What are the symptoms of depression?

If you experience five or more of the following symptoms and they last for more than two weeks, or if the symptoms interfere with your daily routine, see a doctor or a qualified mental health professional. A physical examination to rule out other illnesses may be recommended.

## What causes depression?

Many things can lead to clinical depression. Following are factors that can contribute to the illness:

# How is depression treated?

Depression is the most treatable of all mental illnesses. About 60 percent to 80 percent of depressed people can be treated successfully. Depending on the case, various kinds of therapies seem to work. Treatments such as psychotherapy and support groups help people deal with major changes in life. Several short-term (12-20 weeks) "talk" therapies have proven useful. One method helps patients recognize and change negative thinking patterns that led to the depression. Another approach focuses on improving a patient's relationships with people as a way to reduce depression and feelings of despair.

Antidepressant drugs can also help. These medications can improve mood, sleep, appetite and concentration. There are several types of antidepressant drugs available. Drug therapies often take time before there are real signs of progress. It is important to keep taking medication until it has a chance to work. After feeling better, it is important to continue the medication for at least four to nine months to prevent a recurrence of the depression. Never stop taking an antidepressant without consulting your doctor. Antidepressant drugs can have side effects but they are usually temporary. If side effects persist and are troublesome, contact your doctor. In some cases, you may need to try different medicines to find the one(s) that help the most.

# Are there things I can do to help myself?

# You can find out more about depression by contacting the following organizations:

National Institute of Mental Health 866-615-6464 www.nimh.nih.gov/healthinformation/depressionmenu.cfm

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#### **Diabetes**

## **Diabetes**

Diabetes is a serious chronic disease that poses a major health problem. Nearly 30.3 million people in the United States (9.4% of the population) have diabetes. About one-third of these people do not know they have diabetes. Each year, 1.5 million new cases of diabetes are diagnosed. In Illinois, approximately 1.3 million (12.5% of the population) adults have diabetes, but roughly 341,000 of those don't know they have diabetes. It is estimated that 84 million Americans have prediabetes, of which 3.6 million live in Illinois. Diabetes is the seventh leading cause of death nationally and in Illinois.

Individuals with diabetes are at an increased risk for heart disease, stroke, blindness, kidney failure, dental disease, and lower extremity amputations (not related to injuries). Diabetes and its complications occur among all age, racial, and ethnic groups.

#### What are Prediabetes and Diabetes?

#### **Prediabetes**

Prediabetes is a health condition where blood sugar levels are higher than normal, but not high enough to be diagnosed as Type 2 diabetes. Studies have shown that by making lifestyle changes – losing weight and increasing physical activity – people can prevent or delay prediabetes from progressing to diabetes.

#### Diabetes

Diabetes is a disease in which blood glucose levels are above normal. Most of the food that is eaten is turned into glucose (sugar) for the body to use for energy. The pancreas, an organ that lies near the stomach, makes a hormone called insulin to help glucose get into the body's cells. When you have diabetes, the body either does not make enough insulin or cannot use its own insulin as well as it should. This causes sugar to build up in the blood.

There are 2 main types of diabetes:

Type 1 – This type of diabetes can occur at any age, although it most often appears in childhood or during the teen years. With this form of diabetes, the body no longer makes insulin. Treatment for type 1 diabetes includes taking insulin and possibly another injectable medicine; making wise food choices; being physically active; taking aspirin daily, for some; and controlling blood pressure and cholesterol. Type 2 – Formerly called adult-onset or non-insulin dependent diabetes, this type is the most common form of diabetes and can develop at any age, even in childhood. Type 2 diabetes usually begins with insulin resistance, a condition in which fat, muscle, and liver cells do not use insulin properly. At first, the body keeps up with the added demand by producing more insulin, but, in time, the body is unable to produce enough insulin. Being overweight and inactive increases the chance of developing this form of diabetes. Treatment includes using diabetes medicines; making wise food choices; being physically active; taking aspirin daily, for some; and controlling blood pressure and cholesterol.

# What are the Symptoms of Diabetes?

Symptoms of Type 2 diabetes include:

# Who is Most at Risk for Developing Type 2 Diabetes?

People with certain risk factors are at greater risk of developing Type 2 diabetes. These risk factors include:

#### Can Diabetes be Prevented?

People with diabetes risk factors are at greater risk of developing Type 2 diabetes, however, developing Type 2 diabetes is not inevitable.

Lifestyle modifications can lower your risk of developing Type 2 diabetes by almost 60%. These modifications include:

#### Learn More!

To learn more, explore the numerous general and professional diabetes resources listed.

#### **Contact Us**

Illinois Department of Public Health Diabetes Prevention and Control Program 217-782-3300

#### Resources

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**Diabetes Prevention** 

Living with Diabetes

Laws & Rules

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# **Diphtheria**

## What is diphtheria?

Diphtheria is a serious disease caused by a toxin (poison) made by bacteria. It causes a thick coating in the back of the nose or throat that makes it hard to breathe or swallow. It can be deadly.

## How common is diphtheria?

Diphtheria has not been reported in the United States (U.S.) since 2003. Prior to the introduction of a vaccine in the 1920s, diphtheria was common. Diphtheria remains a serious issue in developing countries with low vaccination coverage. During the 1990s, the countries of the Soviet Union reported more than 150,000 cases.

## What are the symptoms of diphtheria?

Diphtheria starts like a cold, with sore throat, mild fever (101 degrees Fahrenheit or less), and chills. Next, the diphtheria toxin makes a thick coating on the back of the nose or throat. It may be blue or grayish green. The coating makes it hard to breathe or swallow.

## How serious is diphtheria?

The coating on the throat can get so thick that it blocks the airway, so the person cannot breathe.

The diphtheria toxin can attack the heart, causing abnormal heart rhythms and even heart failure. It also can attack the nerves, which leads to paralysis (unable to move parts of the body).

About one out of 10 people who get diphtheria dies. In children younger than 5 years, as many as one out of five children who get diphtheria dies.

# How does diphtheria spread?

Diphtheria spreads when an infected person coughs or sneezes. A person can spread the disease for up to two weeks after infection.

# What is the treatment for diphtheria?

There are no antiviral drugs for treating diphtheria.

# Can diphtheria be prevented?

The best prevention against diphtheria is immunization. There are four combination vaccines used to prevent diphtheria, tetanus and pertussis: DTaP, Tdap, DT, and Td. Two of these (DTaP and DT) are given to children younger than 7 years of age, and two (Tdap and Td) are given to older children and adults. Td is a tetanus-diphtheria vaccine given to adolescents and adults as a booster shot every 10 years, or after an exposure to tetanus under some circumstances. Tdap is similar to Td but also

contains protection against pertussis. Adolescents 11-18 years of age (preferably at age 11-12 years) and adults 19 through 64 years of age should receive a single dose of Tdap. For adults 65 and older who have close contact with an infant and have not previously received Tdap, one dose should be received. Tdap also should be given to 7-to-10-year-olds who are not fully immunized against pertussis. Tdap can be given no matter when Td was last received. (Upper-case letters in these abbreviations denote full-strength doses of diphtheria (D) and tetanus (T) toxoids and pertussis (P) vaccine. Lower-case "d" and "p" denote reduced doses of diphtheria and pertussis used in the adolescent/adult-formulations. The "a" in DTaP and Tdap stands for "acellular," meaning that the pertussis component contains only a part of the pertussis organism.)

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## E. Coli

#### What is Escherichia coli?

E. coli O157:H7, one of hundreds of strains of the bacterium Escherichia coli, is an emerging cause of foodborne illness. While most strains are harmless and live in the intestines of healthy humans and animals, this particular strain produces a powerful toxin that can cause severe illness. It was first identified as a cause of illness in 1982 during an outbreak of severe bloody diarrhea traced to contaminated hamburgers. (The combination of letters and numbers refers to specific markers found on the bacterium's surface that distinguish it from other E. coli, which have other O and H markers.)

#### How common is the infection?

No good national data are available because many laboratories do not routinely test for the organism. Data from one laboratory that does regularly test for E. coliO157:H7 suggest that an estimated 20,000 cases may occur in the United States annually. In some parts of the U.S., particularly the northernmost states, this infection is not rare. It may well be a global problem. Now common in Canada, the infection is being increasingly recognized in Europe, South Africa, the southern regions of South America, Australia and Japan. In Illinois, 100-200 cases of E. coli O157:H7 are reported each year.

#### What sort of illness does it cause?

Many persons infected with the bacterium develop severe diarrhea and painful abdominal cramps, although some people show few or no symptoms. The diarrhea can be very bloody. Because there is usually little or no fever, a person may think some other condition is causing the bowel to bleed, and this infection may go unrecognized. The illness usually resolves in five to 10 days. In some persons, particularly children younger than 5 years of age and the elderly, the infection can lead to destruction of red blood cells (hemolytic anemia) and acute kidney failure (also known as uremia). This complication, hemolytic uremic syndrome (HUS), can lead to stroke, seizures and death. About 2 percent to 7 percent of infections lead to HUS. In the United States, E. coli O157:H7 infection is the primary cause of HUS, which is the principal cause of acute kidney failure in children. Most children with HUS are hospitalized for about two weeks.

# How is E. coli diagnosed?

There are many causes of bloody diarrhea and abdominal cramps. Specific laboratory tests can identify E. coli O157:H7 in the stool of an infected person. However, these tests often are not performed unless the laboratory is instructed to do them.

#### How is E. coli treated?

Most persons recover without antibiotics or other specific treatment in five to 10 days. Antidiarrheal agents, such as loperamide (Imodium®), should be avoided. HUS, a life-threatening condition that is usually treated in an intensive care unit, often requires blood transfusions and kidney dialysis. With intensive care, the fatality rate for HUS is 3 percent to 5 percent.

## Are there any long-term consequences?

Persons with diarrhea alone usually recover completely, although it may be several months before bowel habits are entirely normal. Among those who develop HUS, about 8 percent have a poor outcome, such as chronic kidney failure, high blood pressure, stroke, paralysis, bowel resection, blindness or seizures. A decline in kidney function may appear years later in about one-third of those persons who have had HUS. Thus, this infection may be a preventable cause of chronic kidney failure.

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

Most cases of E. coli O157:H7 infection come from undercooked ground beef. Beef that is still pink, or has blood-tinged juices, has not been cooked enough to kill E. coli O157:H7. While the number of organisms required to cause disease is not known, it is suspected to be very small. Contaminated meat looks and smells normal. The infection also can result from drinking raw unpasteurized milk or drinking or swimming in sewage-contaminated water.

The bacterium is present in the stools of infected persons, and it can be passed from one person to another if hygiene and hand washing habits are inadequate. This is particularly likely to occur among toddlers who are not fully toilet trained. Family members and playmates of such children are at high risk of becoming infected. Bacteria are usually cleared from the stools within a week after the diarrhea resolves. However, in some cases, particularly in young children, the organism may persist in the stool for weeks after the diarrhea has resolved.

#### How does food become contaminated?

The organism can be found on a small number of cattle farms, where it can live in the intestines of healthy cattle. When the animal is slaughtered, the meat may be contaminated by intestinal contents. When this meat is ground, fecal organisms that were on the outside of the meat are then thoroughly mixed throughout the ground beef. These bacteria can survive unless the meat is thoroughly cooked.

Bacteria present on a cow's udders or on equipment may get into and contaminate raw milk.

# What can the consumer do to prevent this illness?

# What else can be done to prevent the infection?

E. coli O157:H7 will continue to be an important public health concern as long as it contaminates meat. It is conceivable that cattle could be vaccinated against the infection, but research into such prevention measures is just beginning.

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# Eastern Equine Encephalitis Virus (EEEV)

## What is Eastern equine encephalitis (EEE)?

Eastern equine is a rare mosquito-borne infection caused by the Eastern equine encephalitis virus. Most cases in the United States occur in the Atlantic and Gulf Coast states although cases have occurred in some Midwestern states.

## What are the symptoms of EEE?

It is possible that some people who become infected with EEEV may not develop any symptoms. When symptoms develop they may include chills, fever, headache, vomiting, malaise, muscle aches and joint aches. The illness lasts one to two weeks, and recovery is complete when there is no central nervous system involvement. The illness can then progress into disorientation, seizures or coma. EEE is one of the most severe mosquito-transmitted diseases in the United States.

## What is the incubation period for EEEV?

The incubation period for EEEV (the time from infected mosquito bite to onset of illness), ranges from four to 10 days. In the United States, an average of six human cases of EEE are reported annually.

#### How is EEEV transmitted?

The EEEV is transmitted from mosquitoes to humans. Horses can acquire the virus from mosquitoes and many cases in horses are fatal. The primary transmission cycle takes place in and around swampy areas where human populations tend to be limited. The main route of transmission is between mosquitoes and birds. Transmission to dead-end hosts, human and horse, is a departure from this cycle and there is no known transmission between horse and human.

#### What is the treatment for EEE?

There is no specific treatment of EEE, treatment of symptoms are the usual management of cases.

# How does one avoid getting EEE?

The best way to prevent EEE or any other mosquito-borne illness is to reduce the number of mosquitoes around your home and neighborhood and to take personal precautions to avoid mosquito bites. Here are some suggestions:

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# **Ebola Virus Hemorrhagic Fever**

#### What is Ebola?

Ebola is a severe, often deadly disease that is caused by the Ebola virus. Symptoms of Ebola most commonly begin 8-10 days after coming into contact with the Ebola virus, but symptoms can occur anywhere between 2-21 days after exposure.

Symptoms of Ebola include: fever, headache, joint and muscle pain, diarrhea, vomiting, stomach pain, lack of appetite and abnormal bleeding. These symptoms are not specific to Ebola and are often seen with other illnesses.

## How does a person get Ebola?

Ebola is spread through direct contact (through broken skin or mucous membranes) with blood or body fluids (including but not limited to urine, saliva, sweat, feces, vomit and semen) of a person who is sick with Ebola, or a person who has recently died from Ebola. It also may be spread on objects or surfaces contaminated with blood or body fluids of an infection person. A person who is not experiencing symptoms, such as fever, vomiting or diarrhea, cannot transmit the virus.

Ebola is NOT spread through the air, water or food.

### What are body fluids?

Ebola has been detected in blood and many body fluids. Body fluids also include saliva, mucus, vomit, feces, sweat, tears, breast milk, urine and semen.

#### What does "direct contact" mean?

Direct contact means that body fluids (blood, saliva, mucus, vomit, urine or feces) from an infected person (alive or dead) have touched someone's eyes, nose, mouth or an open cut, wound or abrasion.

# How long does Ebola live outside the body?

Ebola is killed with hospital-grade disinfectants (such as household bleach). Ebola on dried surfaces, such as doorknobs and countertops, can survive for several hours; however, virus in body fluids (such as blood) can survive up to several days at room temperature.

#### Are there cases of Ebola in Illinois?

At this time, there are no cases of Ebola in Illinois.

# How concerned should people in Illinois be?

At this time, Ebola does not pose a great health risk to the people of Illinois.

## Who is at risk of getting Ebola?

Family, friends and health care workers caring for people sick with Ebola are at higher risk of getting Ebola.

People who touch the bodies of Ebola patients who have died also are at risk.

## When is a person suspected of having Ebola?

Early recognition is critical for infection control. Health care providers should be alert for and evaluate patients suspected of having Ebola who have:

Only patients experiencing symptoms can transmit the virus. Ebola cannot be spread to other people before symptoms begin.

## Are people screened at airports for Ebola?

U.S. Centers for Disease Control and Prevention (CDC) and Customs and Border Protection (CBP) screens travelers who have been in countries most affected by the Ebola outbreak.

## Are Illinois hospitals ready to care for patients with Ebola?

Illinois hospitals following the CDC's infection control recommendations and hospitals that are able to properly isolate a patient in a private room are capable of safely managing a patient with Ebola. IDPH and the CDC recommend hospitals isolate the patient in a private room and implement standard, contact and droplet precautions.

#### What is the treatment for Ebola?

The standard treatment for Ebola remains supportive therapy. This includes the following measures: Some patients infected with Ebola virus do get better spontaneously or with supportive care.

# Are patients who recover from Ebola immune for life? Can they get it again - the same or a different strain?

Recovery from Ebola depends on good supportive clinical care and a patient's immune response. Available evidence shows that people who recover from Ebola infection develop antibodies that last for at least 10 years, possibly longer. It is not known if people who recover are immune for life or if they can become infected with a different species of Ebola.

# If someone survives Ebola, can he or she still spread the virus?

Once someone recovers from Ebola, they can no longer spread the virus. However, Ebola virus has been found in semen for up to three months. People who recover from Ebola are advised to abstain from sex or use condoms for three months.

# Can Ebola be spread through mosquitoes?

At present, there is no evidence that mosquitoes or other insects can transmit Ebola virus. Only mammals (e.g., humans, bats, monkeys and apes) have shown the ability to spread and become infected with Ebola virus.

## What is the state doing to prepare for Ebola in Illinois?

Handling disease outbreaks is a core public health function and IDPH is prepared to conduct surveillance for possible cases, implement infection control measures, support medical facilities, perform contact tracing and assist with laboratory testing.

IDPH will continue to work with the CDC, local health departments, and hospitals and medical facilities.

#### Is it safe to travel overseas?

# What should I do if I recently returned from one of the affected countries?

Call your doctor or clinic right away if you have a fever, headache, or joint and muscle aches within three weeks of returning home.

Tell your doctor where you traveled, what you did and if you had contact with anyone who was sick with Ebola.

It is important to call your doctor in advance of seeking health care so that you are directed to the appropriate facility for medical care, and to be sure that facility is prepared for your arrival.

# Should I avoid contact with a person who recently traveled to the areas in Uganda where Ebola is circulating?

No, you do not need to avoid contact with someone who recently returned from one of the affected countries unless they have symptoms compatible with Ebola.

If a person who recently returned from Uganda has symptoms of Ebola, such as fever, the individual should contact a health care provider and tell them about their recent travel and any exposure(s) to ill individuals. The health care provider will evaluate the person's risk of Ebola as well as other more common infections in Uganda such as malaria and typhoid.

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Tickborne Illnesses

# **Ehrlichiosis**

#### What is ehrlichiosis?

Ehrlichiosis is a disease of humans and animals caused by bacteria named Ehrlichia. The bacteria, which are transmitted by ticks, can infect certain types of white blood cells.

Cases of ehrlichiosis have been confirmed in many states in this country, including Illinois.

## How do you get ehrlichiosis?

The bacteria are transmitted to humans by the bite of an infected tick. The lone star tick, the American dog tick (or wood tick) and the deer tick (or black-legged tick) have been associated with ehrlichiosis.

## Who gets ehrlichiosis?

Anyone is susceptible to the disease, but persons who spend time outdoors in tick-infested environments are at increased risk of exposure. In the Midwest, risk of exposure is greatest from spring through late autumn, but some ticks can become active any time of year if the temperature is warm enough (about 40 degrees Fahrenheit or more at ground level).

# What are the symptoms of ehrlichiosis?

Illness due to ehrlichiosis can be so mild that no medical care is sought or the illness can be severe and sometimes fatal. Symptoms are generally non-specific and other diagnoses may be considered. The more common complaints are fever, headache and muscle aches. Persons with ehrlichiosis also may experience loss of appetite, nausea and vomiting. A rash can occur but is usually not present.

# How soon do symptoms occur?

Symptoms typically begin between one and three weeks after exposure. Any person experiencing illness with a fever following a tick bite should consult his or her physician and advise the physician of the tick bite.

# How is ehrlichiosis diagnosed?

If the symptoms of an illness suggest ehrlichiosis, special blood tests can be performed to detect the Ehrlichia agent itself or the presence of antibodies against the bacterium. Certain other laboratory tests can suggest a diagnosis of ehrlichiosis. These include a low white blood cell count, low blood sodium level and certain elevated liver function tests.

#### What is the treatment for ehrlichiosis?

The disease responds well to treatment with doxycycline or other tetracyclines. And, fortunately, diseases due to other tickborne agents--Rocky Mountain spotted fever and Lyme disease--also respond to these drugs. Treatment with antibiotics should be considered if ehrlichiosis is suspected

because delayed treatment while awaiting laboratory confirmation of the disease may increase the risk for adverse outcomes.

# How can ehrlichiosis be prevented?

Persons spending time outdoors in tick-infested areas should take precautions against all tickborne diseases:

#### How should an attached tick be removed?

Grasp the tick as close to the skin's surface as possible with tweezers and pull straight back in a slow, steady motion without twisting. Avoid crushing the tick's body because it may contain infectious fluid. If you do not have tweezers, you can use your fingertips but they should be covered (with tissue paper or gloves). After the tick is removed, wash the bite site and your hands with soap and water and apply a disinfectant or antibiotic ointment to the site.

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## **Endometrial Cancer**

#### What is endometriosis?

Endometriosis is a common, yet poorly understood, disease that can strike women of any socioeconomic class, age or race. It is estimated that between 10 percent and 20 percent of American women of childbearing age have endometriosis. The disease can affect nearly every aspect of a woman's life--her ability to work, her ability to reproduce, and her relationships with her mate, her child, and everyone around her.

The name endometriosis comes from the word "endometrium," the tissue that lines the inside of the uterus. If a woman is not pregnant, this tissue builds up and is shed each month and discharged as menstrual flow at the end of each cycle. In endometriosis, tissue that looks and acts like endometrial tissue is found outside the uterus, usually inside the abdominal cavity. This misplaced tissue acts like it would if it were inside the uterus. However, unlike menstrual fluid from the uterus, which is discharged from the body during menstruation, blood from the misplaced tissue has no place to go. Tissues surrounding the area of endometriosis may become inflamed or swollen, leading to the development of scar tissue. These endometrial tissue sites may develop into what are called "lesions," "implants," "nodules" or "growths." After menopause, the abnormal implants shrink away and the symptoms subside.

# What are the symptoms of endometriosis?

Most commonly, the symptoms of endometriosis start years after menstrual periods begin. Over the years, the symptoms tend to gradually increase as the endometriosis areas increase in size.

The most common symptom is pain, especially excessive menstrual cramps (dysmenorrhea), which may be felt in the abdomen or lower back or during or after sexual activity (dyspareunia). Infertility occurs in about 30 percent to 40 percent of women with endometriosis. Rarely, the irritation caused by endometrial implants may progress into infection or abscesses causing pain independent of the menstrual cycle. Endometrial patches may also be tender to the touch or to pressure, and intestinal pain may also result from endometrial patches on the walls of the colon or intestine. The amount of pain is not always related to the severity of the disease. Some women with severe endometriosis have no pain; while others with just a few small growths have incapacitating pain.

#### Does endometriosis cause endometrial cancer?

Endometrial cancer is very rarely associated with endometriosis, occurring in less than 1 percent of women who have the disease. When it does occur, it is usually found in more advanced patches of endometriosis in older women and the long-term outlook in these unusual cases is reasonably good.

# Does endometriosis make you infertile?

Severe endometriosis with extensive scarring and organ damage may affect fertility. It is considered one of the three major causes of female infertility. However, unsuspected or mild endometriosis is a common finding among infertile women and how this type of endometriosis affects fertility is still not

clear. While the pregnancy rates for patients with endometriosis remain lower than those of the general population, most patients with endometriosis do not experience fertility problems.

#### What is the cause of endometriosis?

The cause of endometriosis is still unknown. One theory is that during menstruation some of the menstrual tissue backs up through the fallopian tubes into the abdomen, where it implants and grows. Another theory suggests that endometriosis may be a genetic process or that certain families may have predisposing factors to endometriosis.

## How would my health care provider know if I had endometriosis?

Diagnosis of endometriosis begins with a gynecologist evaluating the patient's medical history. A complete physical exam, including a pelvic examination, is also necessary. However, diagnosis of endometriosis is only complete when proven by laparoscopy, a minor surgical procedure in which a laparoscope (a tube with a light in it) is inserted into a small incision in the abdomen. The laparoscope is moved around the abdomen, which has been distended with carbon dioxide gas to make the organs easier to see. The surgeon can then check the condition of the abdominal organs and see the endometrial implants. The laparoscopy will show the locations, extent and size of the growths and will help the patient and her doctor to make better-informed decisions about treatment.

#### What is the treatment for endometriosis?

While the treatment for endometriosis has varied over the years, doctors now agree that if the symptoms are mild, no further treatment other than medication for pain may be needed. For those patients with mild or minimal endometriosis who wish to become pregnant, doctors are advising that, depending on the age of the patient and the amount of pain associated with the disease, the best course of action is to have a trial period of unprotected intercourse for six months to one year. If pregnancy does not occur within that time, then further treatment may be needed.

For patients not seeking to become pregnant and where a definitive diagnosis of endometriosis by laparoscopy has been made, a physician may suggest hormone suppression treatment. Since this therapy shuts off ovulation, women being treated for endometriosis will not get pregnant during such therapy, although some may elect to become pregnant shortly after therapy is stopped. Depending on the severity of the endometriosis, some women may seek surgical treatment to remove the diseased tissue without risking damage to healthy surrounding tissue. This surgery is called laparotomy and is performed in a hospital under anesthesia.

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# **Enterovirus**

#### What is the current situation?

In 2014, an uncommon form of enterovirus called EV-D68 has been found circulating in Missouri and Illinois. This situation rapidly evolved and additional states reported circulation of this virus. Testing of specimens from individuals diagnosed with enterovirus infection were sent to a specialized laboratory at the U.S. Centers for Disease Control and Prevention (CDC) and 11 specimens from a Chicago hospital were positive for Enterovirus D68 (EV-D68). To date, there have been no reported deaths due to EV-68 in Illinois.

Other locations within Illinois have reported increased cases of respiratory illness in children and have diagnosed enterovirus infections, but specific testing for EV-68 has not been performed. Testing for the EV-68 strain is not readily available from hospital and clinical laboratories.

#### What are enteroviruses?

Enteroviruses are very common viruses. There are more than 100 types of enteroviruses. It is estimated that 10 to 15 million enterovirus infections occur in the U.S. each year. Most people infected with enteroviruses have no symptoms or only mild symptoms, but some infections can be serious. Most enterovirus infections in the U.S. occur seasonally during the summer and fall, and outbreaks tend to occur in several-year cycles.

# What is Enterovirus-D68 (EV-D68)?

Enterovirus-D68 (EV-D68) is a type of enterovirus first detected in 1962 in California from four children with respiratory illness and it has been reported rarely since that time. EV-D68 infections appear to occur less commonly than those with certain other types of enteroviruses.

Unlike the majority of enteroviruses that cause disease in the form of a mild upper respiratory illness, rash illness with fever, or neurologic illness (such as aseptic meningitis and encephalitis), EV-D68 has been associated almost exclusively with respiratory disease, which can range from mild to severe. However, other manifestations of illness might also occur.

No data is currently available regarding the numbers of illness, and possibly deaths, from EV-D68 in the U.S. Outbreaks of respiratory illness associated with EV-D68 have been investigated in Asia, Europe and the U.S. during the past few years.

# What are the symptoms of Enterovirus-D68 infection?

EV-D68 appears to primarily cause respiratory illness, which as ranged from relatively mild illness to severe illness requiring hospitalization in an intensive care unit. Specific symptoms have included fever, difficulty breathing, and wheezing or asthma exacerbation.

# How is Enterovirus-D68 infection diagnosed?

An initial test using polymerase chain reaction (PCR) can be used to detect enterovirus/rhinovirus. A health care provider may decide to do this testing or may determine a respiratory virus is responsible and not test any further. To determine specifically whether EV-D68 is responsible for the illnesses, specialized testing is needed at CDC.

#### How is Enterovirus-D68 infection treated?

There are no anti-viral medications currently available to treat EV-D68 infections. Many infections will be mild and self-limited, requiring only symptomatic treatment. Some people with severe respiratory illness caused by EV-D68 may need to be hospitalized and receive intensive supportive therapy.

#### How is EV-D68 transmitted?

EV-D68, like other enteroviruses, appears to spread through close contact with infected people. (See the next question for ways to reduce transmission.)

# What precautions can people take to reduce the risk of acquiring, or transmitting, EV-D68 and other enterovirus infections?

#### Is there a vaccine for EV-D68?

There is no vaccine available.

# Why can't we get the number of cases or the number of locations where this virus is present in Illinois?

There are many viruses that can cause respiratory illness in people. To identify this particular type of enterovirus requires specialized testing locally and at CDC. Therefore, the specific type of virus causing a respiratory infection in the state will most likely NOT be identified. In addition, this particular virus is not reportable in the state. Therefore, it is important to follow the general precautions to reduce the risk of getting any respiratory infection no matter where you live in the state.

# Is EV-D68 a reportable disease in Illinois?

Medical providers are not required to report known or suspected cases of EV-D68 to public health authorities. However, medical providers should report clusters or outbreaks of unexplained respiratory illnesses to the local public health agency.

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# **Fibroids**

#### What are fibroids?

Fibroids are growths on the walls of the uterus. Sometimes, a fibroid is attached to the outside of the uterus by a stalk. Fibroids can be as small as a seed or a pea or as large as an orange or small melon. Although fibroids are called "tumors," they are not cancer. They are smooth muscle growths. About two of every 10 women who have not gone through menopause have fibroids. The technical term for a fibroid tumor is leiomyoma.

## What symptoms do fibroids cause?

Fibroids may cause no symptoms at all, or they may cause pain or bleeding. Fibroids may make it hard to pass urine if they grow large enough to press on the bladder. They also may cause abdominal swelling, pain during intercourse, lower abdominal and pelvic discomfort or pain, and increased uterine cramping before and during menstrual periods. Fibroids also can make it hard for you to get pregnant. Sometimes fibroids can cause problems with pregnancy, labor or delivery, including miscarriage and premature birth.

## How are fibroids diagnosed?

Usually, fibroids are found by abdominal or pelvic examination or pelvic ultrasound. Less frequently, magnetic resonance imaging (MRI) or computerized tomography (CT) scans are used.

# What happens to fibroids after menopause?

Fibroids usually shrink substantially and symptoms may be significantly reduced. Larger fibroids may remain symptomatic if estrogen replacement therapy is used.

#### How are fibroids treated?

If you have fibroids, you may have several treatments from which to choose. The choice depends on how big the fibroids are, where they are, and whether you are pregnant or want to become pregnant.

Watchful waiting may be all the treatment you need if your fibroid is small and you do not have any symptoms. You will need regular visits to your doctor for a pelvic exam to monitor the growth of the fibroid.

Non-surgical treatments for fibroids include hormones and pain relief medicines.

Surgical treatments for fibroids include hysterectomy and myomectomy. Hysterectomy is usually recommended when the fibroids are causing symptoms, when they have grown rapidly or when the fibroids are large (as large as a grapefruit).

Myomectomy is an operation to remove a fibroid tumor without taking out the uterus. The growths may come back after a myomectomy, and repeat surgery may be necessary. If you are considering a myomectomy, be sure to ask the doctor how likely it is that new fibroids might grow after the surgery.

You also should ask your doctor how much experience he or she has in doing this procedure. Not all gynecologists have been trained to perform myomectomies.

Another option is laser surgery, which usually is an outpatient procedure. With laser surgery, the doctor uses a high-intensity light to remove small fibroids. Depending on the location of the fibroid, it may be possible to remove it during a laparoscopy. Or, the doctor may put a thin tube called a hysteroscope with a laser through the vagina and into the uterus. The tube may have a small scraper to scrape away the fibroid from the wall of the uterus.

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# **Fibromyalgia**

## What is fibromyalgia?

The word "fibromyalgia" means pain in the muscles and tissues that connect bones, ligaments and tendons. Fibromyalgia is a condition that causes pain, aching, stiffness, fatigue and tenderness, especially in the neck, back, shoulders and hips. Persons with fibromyalgia often experience sleep disturbances, anxiety and depression, headaches and gastrointestinal problems. While there is no known cure for fibromyalgia, it is not life-threatening and does not cause deformity or damage to the tissues. It can be successfully managed in many cases.

#### What causes it?

The cause of fibromyalgia is unknown. Factors that may contribute to its development include emotional stress, injury or trauma (especially to the neck or upper body), changes in the way muscles work (such as decreased blood flow in the tissues), changes in brain nerve chemical (serotonin) levels and family history of fibromyalgia. Researchers also suspect that infections may play a role, although there is no definite proof.

#### Who is at risk?

Fibromyalgia is a common disease that affects approximately 2 percent of the U.S. population or about 5 million people. It mainly affects women, especially those between the ages of 35 and 55. However, it also may affect men, children and the elderly.

In some families, inherited factors play a role in a person's risk for developing arthritis. If a parent or other close relative has been diagnosed with arthritis, it is important to share this history with a health care provider. Early diagnosis and treatment is the key to successful management of arthritis.

# Can it be prevented?

Because its causes remain unknown, there is currently no way to prevent fibromyalgia.

# How is it diagnosed?

Fibromyalgia is difficult to diagnose. It does not cause inflammation and cannot be diagnosed with X-rays, blood tests or samples of muscle tissue. The diagnosis is based on patient history and examination by a doctor. Blood tests are often done to rule out other causes for a patient's symptoms. According to the American College of Rheumatology guidelines, a person has fibromyalgia if he or she has widespread pain for at least three months and pain in at least 11 of 18 specific tender points on the body. Referral to a rheumatologist (arthritis doctor) may be necessary.

#### How is it treated?

There is no known cure for fibromyalgia. Studies have shown that exercise, including those related to flexibility, aerobics and stretching, may help to reduce muscle pain and tenderness and give an

improved sense of well-being. Medications to lessen pain, relax muscles and improve sleep often are used to treat the symptoms of fibromyalgia. Other treatments include heat, massage, relaxation and stress management.

Successful management of fibromyalgia includes self-management. It is important for patients to learn about their disease and take part in their own care. Working with health care professionals allows a person to share in decision-making and gain a sense of control.

Self-management includes arthritis education, exercise programs, relaxation and stress management, eating well-balanced meals and maintaining proper weight, taking care of joints and using assistive devices to rest joints and relieve pressure.

Research shows that patients who take part in their own care report less pain and make fewer visits to health care professionals, as well as enjoy a better quality of life.

## When should a person get help?

When pain or extreme tiredness interfere with a person's ability to work, sleep or perform normal activities of daily living, a health care professional should be contacted. Learning pain control and ways to handle stress often requires help from health professionals.

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# **Genital Herpes**

## What is genital herpes?

Genital herpes is a sexually transmitted disease (STD) caused by the herpes simplex viruses type 1 (HSV-1) or type 2 (HSV-2).

Genital herpes infection is common in the United States. Nationwide, 16.2 percent, or about one out of six, people aged 14 to 49 years have genital HSV-2 infection. Over the past decade, the percentage of persons with genital herpes infection in the United States has remained stable.

There are two types of HSV and both can cause the symptoms of genital herpes. HSV type 1 most commonly causes sores on the lips (known as fever blisters or cold sores), but it can cause genital infections as well. HSV type 2 most often causes genital sores, but it also can infect the mouth. The virus remains in certain nerve cells of the body for life, causing periodic symptoms in some people. Many people who are infected with HSV never develop any symptoms.

## How is genital herpes transmitted?

The infection is usually acquired by sexual contact with someone who has genital herpes. People with oral herpes can transmit the infection to the genital area of a partner during oral-genital sex. Herpes infections also can be transmitted by a person who is infected with HSV but has no noticeable symptoms. Such asymptomatic shedding of the virus may be fairly common, occurring from 5 percent to 20 percent of the time in infected individuals. HSV-1 can cause sores in the genital area and infections of the mouth and lips, so-called "fever blisters." HSV-1 infection of the genitals is caused by mouth to genital or genital to genital contact with a person who has HSV-1 infection.

Transmission from an infected male to his female partner is more likely than from an infected female to her male partner. Because of this, genital HSV-2 infection is more common in women (approximately one out of five women aged 14 to 49 years) than in men (about one out of nine men aged 14 to 49 years).

# What are the symptoms of genital herpes?

Most individuals infected with HSV-1 or HSV-2 experience either no symptoms or have very mild symptoms that go unnoticed or are mistaken for another skin condition. Because of this, most people infected with HSV-2 are not aware of their infection. When symptoms do occur, they typically appear as one or more blisters on or around the genitals, rectum or mouth. The blisters break and leave painful sores that may take two weeks to four weeks to heal. Experiencing these symptoms is sometimes referred to as having an "outbreak." The first time someone has an outbreak they may experience flu-like symptoms such as fever, body aches and swollen glands.

# Can genital herpes reoccur?

Repeat outbreaks of genital herpes are common, especially during the first year of infection.

After invading the skin or mucous membranes, the virus that causes genital herpes travels to the sensory nerves at the end of the spinal cord. Even after the skin lesions have disappeared, the virus remains inside the nerve cells in a latent state. In most people, the virus reactivates from time to time. When this happens, the virus travels along the nerves to the skin, where it multiplies on the surface at or near the site of the original herpes sores, causing new lesions to erupt. It also can reactivate without any visible sores. At these times, small amounts of the virus may be shed at, or near, sites of the original infection, in genital or oral secretions, or from inapparent lesions. This shedding is infrequent, but it is sufficient to infect a sex partner.

The symptoms of recurrent episodes are usually milder than those of the first episode and typically last about a week. A recurrent outbreak may be signaled by a tingling sensation or itching in the genital area or pain in the buttocks or down the leg. These are called prodromal symptoms and, for some people, they can be the most painful and annoying part of a recurrent episode.

Sometimes no visible sores develop. At other times, blisters appear that may be very small and barely noticeable or may break into open sores that crust over and then disappear. The frequency and severity of the recurrent episodes vary greatly. While some people recognize only one or two recurrences in a lifetime, others may experience several outbreaks a year. The number and pattern of recurrences often change over time for an individual. Scientists do not know what causes the virus to reactivate. Although some people with herpes report that their recurrences are brought on by other illness, stress exposure to sunlight or menstruation, recurrences often are not predictable.

## How is genital herpes diagnosed?

Health care providers can diagnose genital herpes by visual inspection if the outbreak is typical. Providers can take a sample from the sore(s) and test it. Sometimes, HSV infections can be diagnosed between outbreaks with a blood test. A person should discuss such testing options with their health care provider.

During an active herpes episode, whether primary or recurrent, it is important to follow a few simple steps to speed healing and to avoid spreading the infection to other sites of the body or to other people:

# Is there a cure or treatment for herpes?

There is no treatment that can cure herpes. Antiviral medications can, however, prevent or shorten outbreaks during the period of time the person takes the medication. In addition, daily suppressive therapy (i.e., daily use of antiviral medication) for herpes can reduce the likelihood of transmission to partners.

Oral acyclovir markedly shortens the course of a first episode and limits the severity of recurrences if taken within 24 hours of onset of symptoms. People who have very frequent episodes of the disease can take oral acyclovir daily for up to one year to suppress the virus' activity and prevent most recurrences. Acyclovir does not cure herpes, but it interferes with the virus' ability to reproduce itself. Other new drugs – famciclovir and valacyclovir – now work in a similar manner.

# Does genital herpes cause any complications?

Genital herpes can cause painful genital sores in many adults and can be severe in people with suppressed immune systems. If a person with genital herpes touches their sores or the fluids from the sores, they may transfer herpes to another part of the body. This is particularly problematic if it is a sensitive location such as the eyes. This can be avoided by not touching the sores or fluids. If they are touched, immediate and thorough hand-washing make the transfer less likely.

Some people who contract genital herpes have concerns about how it will impact their overall health, sex life, and relationships. It is best to talk to a health care provider about those concerns, but it also is

important to recognize that while herpes is not curable, it is a manageable condition. Since a genital herpes diagnosis may affect perceptions about existing or future sexual relationships, it is important to understand how to talk to sexual partners about STDs. There are also potential complications for a pregnant woman and her unborn child.

## How does genital herpes affect a pregnant woman and her baby?

It is crucial that pregnant women infected with HSV-1 or HSV-2 go to prenatal care visits and tell their doctor if they have ever experienced any symptoms of, been exposed to, or been diagnosed with genital herpes. Sometimes genital herpes infection can lead to miscarriage or premature birth. Herpes infection can be passed from mother to child resulting in a potentially fatal infection (neonatal herpes). It is important that women avoid contracting herpes during pregnancy.

A woman with genital herpes may be offered antiviral medication from 36 weeks gestation through delivery to reduce the risk of an outbreak. At the time of delivery a woman with genital herpes should undergo careful examination. If herpes symptoms are present at delivery, a cesarean delivery (also called a 'C-section') is usually performed.

## What is the link between genital herpes and HIV?

Genital herpes can cause sores or breaks in the skin or mucous membranes (lining of the mouth, vagina, and rectum). The genital sores caused by herpes can bleed easily. When the sores come into contact with the mouth, vagina or rectum during sex, they increase the risk of HIV transmission if either partner is HIV-infected.

## How can genital herpes be prevented?

Correct and consistent use of latex condoms can reduce the risk of genital herpes, because herpes symptoms can occur in both male and female genital areas that are covered or protected by a latex condom. However, outbreaks can occur in areas that are not covered by a condom.

The surest way to avoid transmission of sexually transmitted diseases, including genital herpes, is to abstain from sexual contact, or to be in a long-term mutually monogamous relationship with a partner who has been tested and is known to be uninfected.

Persons with herpes should abstain from sexual activity with partners when sores or other symptoms of herpes are present. It is important to know that even if a person does not have any symptoms, he or she can still infect sex partners. Sex partners of infected persons should be advised that they may become infected and they should use condoms to reduce the risk. Sex partners can seek testing to determine if they are infected with HSV.

Counseling and help for those who have genital herpes is often available from local health departments. The American Social Health Association (ASHA) maintains a HerpesResourceCenter. For information on its programs, send a self-addressed stamped envelope to the center at:

P.O. Box 13827 Research Triangle Park, NC27709

ASHA also has a herpes hotline, 919-361- 8488, that operates Monday through Friday, 8 a.m. to 6 p.m. IDPH HIV/STD Hotline 800-243-2437 (TTY 800-782-0423)

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# **Giardiasis**

Giardiasis, a disease caused by the protozoan parasite Giardia lamblia, is characterized by chronic diarrhea that usually lasts one or more weeks. Diarrhea may be accompanied by one or more of the following symptoms: abdominal cramps, bloating, flatulence, fatigue or weight loss. Stools are often malodorous and have a pale greasy appearance. Infection without symptoms is also common.

The life cycle of G. lamblia involves two stages: trophozoite and cyst. Trophozoites stay in the upper small intestinal tract where they actively feed and reproduce. When trophozoites pass down the bowel, they change into the inactive cyst stage by developing a thick exterior wall that protects the parasite after it is passed in feces.

People become infected either directly by hand-to-mouth transfer of cysts from feces of an infected individual (as in careless diaper changing and poor handwashing technique), or indirectly by drinking feces-contaminated water. The organism does not invade other parts of the body or cause any permanent damage. In infants and small children, however, the severe diarrhea can lead to dehydration and shock if adequate fluid intake is not maintained.

## **Epidemiology**

Giardiasis occurs worldwide. In the United States, G. lamblia is the parasite most commonly identified in stool specimens submitted to state laboratories for parasitologic examination. Other surveys conducted in the United States have demonstrated G. lamblia prevalence rates ranging from 1 percent to 30 percent, depending on the location and ages studied.

Most transmission occurs sporadically by direct person-to-person contact in households where a case has occurred and among neighborhood contacts with infected children. Epidemics resulting from person-to-person transmission most often occur in daycare centers for preschool-age children and institutions for the developmentally disabled. Infants and toddlers in daycare centers are more commonly infected than older children who have been toilet trained.

Infections also occur among backpackers and campers who drink untreated stream water. Less commonly, community epidemics caused by contaminated drinking water occur. In such outbreaks, approximately 11 percent of the residents have become infected. Both human and animal (beaver) fecal contamination of stream water has been implicated as the source of G. lamblia cysts in waterborne outbreaks. Giardia species in dogs and possibly other animals are also considered infectious for humans.

Why some people become ill when infected with G. lamblia and others have no symptoms has not been fully explained. Individual immunity undoubtedly plays a role, but the exact immune mechanisms involved have not been identified. A number of other factors such as number of G. lamblia cysts ingested (dose), varying virulence among G. lamblia strains, human or animal origin of the parasite, etc., may have an influence on the clinical course of infection.

The cyst form of the organism is hardy and may remain viable for a long period of time (approximately two months), particularly in cold water. The ingestion of 10 to 25 cysts may result in giardiasis, with an incubation period from one to four weeks.

## **Diagnosis**

The diagnosis of G. lamblia infection is most commonly made by identifying the causative agent, G. lamblia, in the feces. It is also possible to identify the parasite in digestive juices or biopsy material taken from the small intestine. In patients with watery diarrhea, trophozoites are most commonly found in stools, but a few cysts may also be present. After the acute stage has passed, stools are more often formed and contain the more hardy cyst form of the parasite.

G. lamblia cysts are passed in the feces on an intermittent basis. When infection is suspected by a physician, a minimum of three stool specimens (one every other day) is usually obtained and examined to minimize the chance of missing an infection.

### **Treatment**

Three prescription drugs are available in the United States for the treatment of giardiasis: quinacrine, metronidazole and furazolidone. Quinacrine is considered the drug of choice for adults and older children. Although quinacrine is effective in young children, the drug frequently causes vomiting in this age group. Metronidazole has cure rates similar to quinacrine and is generally well tolerated by both adults and children. With the onset of any of the symptoms preciously mentioned, a physician should be contacted immediately.

#### **Prevention**

Giardiasis epidemics have commonly resulted from contaminated drinking water. The long-term solution to waterborne outbreaks involving municipal water systems requires use of water filtration equipment in the water treatment process. Although most large U.S. cities use proper filtration methods, many towns and small cities rely solely on chlorination to disinfect drinking water; the amount of chlorine used often does not kill G. lamblia cysts.

How to treat drinking water for the removal of G. lamblia has become an important concern over the last few years as outbreaks of giardiasis have occurred. Designs appropriate for small water systems are particularly needed.

Because the cysts of G. lambia resist conventional disinfection, effective filtration must serve as an additional barrier to prevent disease transmission. Studies have shown that diatomaceous earth filtration is an effective process for the removal of G. lamblia cysts. Only diatomaceous earth filters approved by the National Sanitation Foundation for treatment of drinking water should be used.

A properly designed slow sand filtration system is also almost 100 percent effective in removing G. lamblia cysts. However, proper construction operation, and sand size are critical to the efficiency of the slow sand filter. The sand should have an effective size of .25 - .35 mm with an ideal effective size of .30 mm and a uniformity coefficient of 1.4 to 1.8 with an ideal coefficient of 1.6. More detailed operation and construction guidelines are given in the Department's Surface Source Water Treatment Code.

Backpackers and campers should not drink water directly from streams or lakes, no matter how clean the water appears. G. lamblia cysts can survive in the aquatic environment, especially in cold lakes or streams, for months, and are more resistant to disinfection than most other microbial pathogenic agents. Person-to-person transmission of G. lamblia can be prevented by practicing good personal hygiene and maintaining a sanitary environment. Good handwashing and fingernail cleaning should be stressed, especially after using the toilet, handling soiled diapers of infants and before eating. Quick and thorough cleanup of fecal accidents at home or in institutions also reduces the risk of spreading G. lamblia to others.

### **Water Disinfection**

Boiling - Except for water treatment methods that include filtration, boiling is the only technique that can be recommended with complete confidence for elimination of G. lamblia in polluted water. Boiling (at a rolling boil) for five minutes is adequate to kill G. lamblia as well as most other bacteria or other pathogens likely to be acquired from drinking polluted water.

Chemical Disinfection - Disinfection of water with chlorine or iodine is less reliable than boiling for killing G. lamblia.

It is not possible to recommend a concentration of chlorine and a contact time that would be effective under all types of water conditions. Therefore, providing continuous chlorination of the water supply will not assure the destruction of the cysts. Chlorine concentrations ordinarily used to disinfect water supplies are ineffective in killing G. lamblia cysts.

#### **Well Contamination**

This Department or local health department should be contacted for further advice when Giardia is suspected. Normally, Giardia cysts are not found in a ground water supplies. If these cysts are discovered in a ground water supply, immediately discontinue using the water and check the well for proper construction and location. In addition, all possible sources of contamination must be eliminated. It is extremely important to locate the source of the Giardia infiltration into the water supply. A nearby sewage seepage field, buried pump suction pipe or improperly installed well may contribute to well contamination. After all potential problems have been identified and corrected, the system should be thoroughly disinfected and sampled.

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Sexually Transmitted Diseases (STD)

## Gonorrhea

In Illinois, the incidence of gonorrhea has declined significantly since 1975, when 59,000 cases were reported. Yet, almost 17,000 cases of the disease were reported in the state in 2011. It is estimated that another nearly 17,000 cases, mostly among teenagers and young adults, go unreported each year. The approximate annual cost of gonorrhea and its complications in Illinois is more than \$3 million.

United States Centers for DC estimates that, annually, more than 700,000 people in the United States get new gonorrhea infections and less than half of these infections are reported to CDC. In 2010, nearly 322,000 cases of gonorrhea were reported to CDC.

## What is gonorrhea?

Gonorrhea is a sexually transmitted disease (STD) caused by a bacterium, Neisseria gonorrhoeae(gonococcus), that grows and multiplies in moist, warm areas of the reproductive tract, including the cervix (opening to the womb), uterus (womb), and fallopian tubes (egg canals) in women, and in the urethra (urine canal) in women and men. The bacterium can grow in the mouth, throat, eyes and anus. In women, the cervix is the most common site of infection. However, the disease can spread to the uterus and fallopian tubes, resulting in pelvic inflammatory disease. This, in turn, can cause infertility and ectopic pregnancy.

# How common is gonorrhea?

Gonorrhea is a very common infectious disease. CDC estimates that, annually, more than 700,000 people in the United States get new gonorrheal infections, and less than half of these infections are reported to CDC. In 2011, 321,849 cases of gonorrhea were reported to CDC.

# How is gonorrhea spread?

People get gonorrhea by having sex (anal, vaginal or oral) with someone who has the disease. Gonorrhea can still be transmitted via fluids even if a man does not ejaculate. Gonorrhea can be spread from an untreated mother to her baby during childbirth.

People who have had gonorrhea and have been treated may get infected again if they have sexual contact with a person infected with gonorrhea. When the infection occurs in children, it is most commonly due to child abuse.

# Who is at risk for gonorrhea?

Any sexually active person can be infected with gonorrhea. It is a very common STD. In the United States, the highest reported rates of infection are among sexually active teenagers, young adults, and African Americans.

# What are the symptoms of gonorrhea?

Some men with gonorrhea may have no symptoms at all. However, common symptoms in men include a burning sensation when urinating, or a white, yellow or green discharge from the penis that usually

appears one to 14 days after infection. Sometimes men with gonorrhea get painful or swollen testicles.

Most women with gonorrhea do not have any symptoms. Even when a woman has symptoms, they are often mild and can be mistaken for a bladder or vaginal infection. The initial symptoms in women can include a painful or burning sensation when urinating, increased vaginal discharge, or vaginal bleeding between periods. More advanced symptoms, which indicate progression to pelvic inflammatory disease, include abdominal pain, vomiting or fever. Women with gonorrhea are at risk of developing serious complications from the infection, even if symptoms are not present or are mild.

Symptoms of rectal infection in both men and women may include discharge, anal itching, soreness, bleeding, or painful bowel movements. Rectal infections may cause no symptoms. Infections in the throat may cause a sore throat, but usually cause no symptoms.

# What are the complications of gonorrhea?

Untreated gonorrhea can cause serious and permanent health problems in both women and men.

In women, gonorrhea can spread into the uterus (womb) or fallopian tubes (egg canals) and cause pelvic inflammatory disease (PID). The symptoms may be mild or can be very severe and can include abdominal pain and fever. PID can lead to internal abscesses (pus-filled pockets that are hard to cure) and chronic (long-lasting) pelvic pain. PID can damage the fallopian tubes enough that a woman will be unable to have children. It also can increase her risk of ectopic pregnancy. Ectopic pregnancy is a life-threatening condition in which a fertilized egg grows outside the uterus, usually in a fallopian tube.

In men, gonorrhea can cause a painful condition called epididymitis in the tubes attached to the testicles. In rare cases, this may prevent a man from being able to father children.

If not treated, gonorrhea can spread to the blood or joints. This condition can be life-threatening.

## How does gonorrhea affect a pregnant woman and her baby?

If a pregnant woman has gonorrhea, she may give the infection to her baby as the baby passes through the birth canal during delivery. This can cause serious health problems for the baby. Treating gonorrhea as soon as it is detected in pregnant women will make these health outcomes less likely. Pregnant women should consult a health care provider for appropriate examination, testing, and treatment, as necessary.

#### What about Gonorrhea and HIV?

Untreated gonorrhea can increase a person's risk of acquiring or transmitting HIV the virus that causes AIDS.

# Who should be tested for gonorrhea?

Any sexually active person can be infected with gonorrhea. Anyone with genital symptoms such as discharge, burning during urination, unusual sores, or rash should stop having sex and see a health care provider immediately.

Also, anyone with an oral, anal or vaginal sex partner who has been recently diagnosed with an STD should see a health care provider for evaluation.

Some people should be tested for gonorrhea even if they do not have symptoms or know of a sex partner who has gonorrhea. Anyone who is sexually active should discuss his or her risk factors with a health care provider and ask whether he or she should be tested for gonorrhea or other STDs.

People who have gonorrhea should be tested for other STDs.

## How is gonorrhea diagnosed?

Most of the time, a urine test can be used to test for gonorrhea. However, if a person has had oral and/or anal sex, swabs may be used to collect samples from the throat and/or rectum. In some cases, a swab may be used to collect a sample from a man's urethra (urine canal) or a woman's cervix (opening to the womb).

## How is gonorrhea treated?

Gonorrhea can be cured with the right treatment. CDC now recommends dual therapy (i.e. using two drugs) for the treatment of gonorrhea. It is important to take all of the medication prescribed to cure gonorrhea. Medication for gonorrhea should not be shared with anyone. Although medication will stop the infection, it will not repair any permanent damage done by the disease.

Antimicrobial resistance in gonorrhea is of increasing concern, and successful treatment of gonorrhea is becoming more difficult. If a person's symptoms continue for more than a few days after receiving treatment, he or she should return to a health care provider to be reevaluated.

## What about partners?

If a person has been diagnosed and treated for gonorrhea, he or she should tell all recent anal, vaginal or oral sex partners (all sex partners within 60 days before the onset of symptoms or diagnosis) so they can see a health provider and be treated. This will reduce the risk that the sex partners will develop serious complications from gonorrhea and will reduce the person's risk of becoming reinfected. A person with gonorrhea and all of his or her sex partners must avoid having sex until they have completed their treatment for gonorrhea and until they no longer have symptoms. For tips on talking to partners about sex and STD testing see Resources.

# How is gonorrhea prevented?

Not having sex is the best protection against gonorrhea and other STDs. Having sex with only one uninfected partner who only has sex with you is also safe. Latex male condoms, when used consistently and correctly, can reduce the risk of getting or giving gonorrhea. The surest way to avoid gonorrhea is to abstain from vaginal, anal and oral sex or to be in a long-term mutually monogamous relationship with a partner who has been tested and is known to be uninfected.

IDPH HIV/STD Hotline: 800-243-2437 (TTY 800-782-0423)

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## Gout

## What is gout?

Gout is a type of arthritis that causes sudden, severe attacks of pain, swelling, redness, warmth and tenderness in the joints. It usually affects the joint of the big toe but can occur in feet, ankles, knees, hands and wrists. Gout occurs when a substance called uric acid builds up in the body and forms needle-like crystals in the joints. The first symptoms of gout often occur in the middle of the night or upon rising in the morning. Wearing shoes and moving the joint or standing may be difficult and painful. Gout accounts for about 5 percent of all cases of arthritis.

## What causes gout?

Gout is caused by a buildup of uric acid that occurs when the body has difficulty breaking down protein substances called purines which are found naturally in foods. Sometimes this happens because the kidneys are not getting rid of uric acid properly, and sometimes it occurs because the body produces too much uric acid. Eating too much of certain foods such as salmon, liver, herring or sardines and drinking too much alcohol may trigger an episode of gout.

#### Who is at risk?

Gout occurs most often in men over age 40, but it can affect persons of any age. Women are more susceptible after menopause. Gout is more common in people who are overweight. A family history of gout may increase a person's risk of developing the disease. Certain medical conditions, such as untreated high blood pressure, diabetes and high cholesterol, also may increase a person's risk of developing gout. Exposure to lead in the environment also may be a risk factor.

In some families, inherited factors play a role in a person's risk for developing arthritis. If a parent or other close relative has been diagnosed with arthritis, it is important to share this history with a health care provider. Early diagnosis and treatment is the key to successful management of arthritis.

# Can it be prevented?

There is no sure way to prevent gout. However, if diagnosed early, the disabling effects of gout can be prevented with medications, proper diet, weight loss, limiting or avoiding alcohol and drinking plenty of fluids.

# How is it diagnosed?

The diagnosis of gout is based on personal and family history and examination by a physician or other health care professional. Blood tests are used to determine uric acid levels. X-rays may be done to look for abnormal changes in bones and joints. The doctor also may test joint fluid to check for uric acid crystals.

#### How is it treated?

With proper treatment, most people with gout are able to control their symptoms. High doses of non-steroidal anti-inflammatory drugs (NSAIDs) and injections of corticosteroid drugs into the affected joint(s) are the most common treatments. Patients usually improve within a few hours of treatment, and the attack goes away completely within a few days. Colchicine may be used if NSAIDs do not control the symptoms but tends to cause more side effects.

Successfully dealing with arthritis pain and disability requires self-management skills. It is important for patients to learn about their disease and to take part in their own care. Working with health care professionals allows a person to share in decision making and gain a sense of control. Self-management techniques include arthritis education, exercise programs, relaxation and stress management, eating well-balanced meals and maintaining proper weight, taking care of joints and using assistive devices to rest joints and relieve pressure.

Research shows that patients who take part in their own care report less pain and make fewer doctor visits as well as enjoy a better quality of life.

## When should a person get help?

If gout is not treated, other conditions may arise. Tophi (soft tissue swellings caused by uric acid crystals) may form on the toes, fingers, hands or elbows. Permanent changes in the joint may occur, and kidney disease or kidney stones may develop. Seek medical care immediately if a fever is present and a joint is hot and inflamed. This may be a sign of an infection. A doctor should be seen if a person experiences intense, sudden pain in a joint, even if the pain goes away in one or two days.

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# **Group A Streptococcus (GAS) Infections**

# What is group A streptococcus (GAS)?

Group A Streptococcus is a bacterium found in the human throat or on the skin. There are approximately 350 cases of invasive GAS infection reported in Illinois each year.

# What kind of illnesses does GAS infection cause and what are the symptoms?

Some persons with GAS infections experience no signs or symptoms. For those with symptoms, the most common illnesses are "strep throat," a skin infection called impetigo and scarlet fever. Symptoms of these illnesses are described below.

Anyone suspected of having an infection with Group A Streptococcus should immediately seek medical care for testing and treatment. Though common, GAS infections can become very serious if untreated.

## What are the complications of GAS infections?

## **Types of GAS Infections**

GAS infections can sometimes cause invasive disease, including pneumonia, meningitis, infection of the skin and muscle (necrotizing fasciitis) as well as an illness resembling toxic shock syndrome (Streptococcal Toxic Shock Syndrome or STSS). Though relatively uncommon, these invasive infections can progress rapidly and be life threatening.

Persons at higher risk for invasive disease include those with:

It also is believed that infection with certain strains of Group A Streptococcus increases the likelihood of invasive disease.

# What are signs of necrotizing fasciitis and Streptococcal toxic shock syndrome (STSS)?

Necrotizing fasciitis:

STSS:

# How is GAS spread?

GAS can be spread from any individual who harbors the bacteria even if they do not have any symptoms. Persons without symptoms are usually less contagious. The bacteria are transmitted from person to person by direct contact with mucus or secretions (e.g. nasal secretions) from an infected person. Transmission occurs less frequently through contact with articles handled by an infected person. The time from exposure to illness is one to three days.

Untreated individuals can be contagious for 10-21 days or longer. An infected person is typically no longer infectious after the first 12 hours of appropriate treatment.

#### How can GAS be treated?

Group A Streptococcus bacteria can be treated with several different antibiotics. As with any antibiotic use, it is important to complete the entire treatment course as prescribed by your health care provider.

# Is there any way to reduce the chances of getting a GAS infection?

As with most communicable diseases, the spread of group A Streptococcus infections may be reduced by good hygiene. Effective hand washing after coughing or sneezing and before preparing foods or eating is essential (http://www.cdc.gov/handwashing/). Persons with fever and sore throats should be seen by a doctor for testing. If GAS infection is diagnosed, the person should stay home from work, school or day care until fever free and 12 hours or more after taking an appropriate antibiotic.

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Toxicology

# **Haff Disease**

Haff disease is a rare seafood-related illness that affects about one person in the United States each year. There have been three reported incidents of Haff disease in Illinois, with the last case occurring in 2019. The two prior incidents occurred in 2004 and 2014. All Illinois cases of Haff disease were related to consumption of buffalo fish.

#### What is Haff Disease?

Haff disease is a syndrome of unexplained rhabdomyolysis occurring within 24 hours of fish consumption. It is suspected of being caused by an unidentified toxin. Rhabdomyolysis occurs when damaged muscle tissue releases its protein and electrolytes into the blood. Rhabdomyolysis is a serious medical condition that can cause kidney damage, dangerous heart rhythms, seizures, nausea and vomiting, permanent disability, and death.

# What fish are associated with Haff Disease?

In the United States, Haff disease has been linked to the consumption of buffalo fish, crawfish, and salmon. In Illinois, the three observed cases have involved buffalo fish, which are commercially harvested from large rivers and reservoirs. Three species of buffalo fish occur in Illinois (bigmouth, smallmouth, and black buffalo), though it is unknown which species have been associated with the cases of Haff disease due to the species' physical similarities and overlapping habitats.

# What are the potential health effects?

Common symptoms associated with Haff disease include extreme muscle stiffness, muscle pain, chest pain, difficulty breathing, numbness, loss of strength throughout the body, and dark brown urine. Severe symptoms typically resolve within two to three days, though prolonged muscle weakness may remain. Complications of Haff disease include acute kidney failure and abnormal blood clotting. The case fatality rate of Haff disease is about 1%.

# What can I do to lower my risk of Haff Disease?

Other than limiting your consumption of seafood, there are no known measures to lower your risk for Haff disease. You cannot tell if a fish contains the toxin based on its taste, smell, or appearance, and the toxin cannot be destroyed by cooking. It is unknown if the disease is caused by improper packaging or storage of fish or if it is attributed to the fish's environment. Since the majority of incidents in the United States have involved buffalo fish, those who frequently consume buffalo fish should monitor themselves for the symptoms of Haff disease.

# What should I do if I start showing symptoms of Haff Disease?

Seek medical attention immediately if you've recently consumed seafood and are exhibiting symptoms of Haff disease. After you have received medical attention, notify your local health department to document the illness and prevent others from becoming inflicted. If leftover fish is available from the meal, do not throw it out. IDPH or partner agencies may request a fish sample for testing.

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# **Hantaviruses**

#### What are Hantaviruses?

Hantaviruses are a group of viruses found in wild rodents. While they do not produce disease in these rodent hosts, Hantaviruses can cause illness in humans. The viruses are so named because they were first isolated in the laboratory from striped field mice captured near Korea's Hantaan River. For many years, Hantaviruses have been known to cause illnesses in other areas of the world (Europe and Asia). In 1993, a previously unknown species of the virus, which causes an illness different from other known Hantavirus infections, was identified in the southwestern United States. Since that outbreak, the virus has been identified in more than half the states in the U. S. One case and death due to Hantavirus was reported in Illinois 1996 and another case reported in 2005 survived.

# How is a person infected with a hantavirus?

Humans contract a Hantavirus infection by breathing dust contaminated by the urine, saliva or feces of an infected rodent. Infection also may occur if contaminated material or dust gets into broken skin or a mucous membrane, such as the eye. Ingesting food or water tainted by an infected rodent may cause illness, too. Hantaviruses also can be transmitted by the bite of an infected rodent. Person-to-person transmission has not been demonstrated in the United States.

# What are the symptoms?

The most recently identified hantavirus can affect the lungs, so the illness has been named hantavirus pulmonary syndrome, or HPS. Some types of pneumonia and common respiratory viruses (like influenza virus) can mimic the early symptoms of this Hantavirus but, fortunately, HPS is rare. Symptoms, which may develop between five and 42 days after exposure to the virus, include fever, headache, stomach pain, muscle aches, cough, and nausea and/or vomiting. If a person experiences flu-like symptoms followed by shortness of breath, he or she should contact a physician.

# Who is most likely to get HPS?

Cases are most likely to occur in rural areas where the deer mouse, which appears to be the main source of the virus in the United States, primarily lives. Buildings, barns, garages, areas where rubbish or wood piles exist, or similar locations can serve as potential settings of Hantavirus infection if such sites are inhabited by infected rodents and conditions favorable for transmission (dry, dusty areas contaminated with rodent excreta) exist. Keeping homes and buildings rodent-free is a primary prevention measure against this group of viruses.

One death due to Hantavirus was reported in Illinois in 1996.

#### Is there a treatment for HPS?

HPS can be a serious, life-threatening illness. Treatment with ribavirin, a drug used with other Hantaviruses, is being studied but presently it has not been proven to be effective. Supportive care for patients with HPS is given in an intensive care unit where fluids and blood pressure are maintained and

mechanical ventilation with oxygen may be necessary.

# What can I do to prevent rodent infestation in a home or building?

To keep rodents out of a building, you must create an environment that does not attract them. Deny rodents food, water, nesting sites and entry to the building:

Reduce the availability of food and water. Keep your kitchen clean. Store human and pet food in tightly closed containers. Keep food scraps and garbage in rodent-proof metal or thick plastic containers with tight-fitting lids. Store bulk animal food at least 100 feet from the home in containers with tight-fitting lids. Do not allow pet or animal food to sit out. Repair leaky faucets that may provide water to rodents.

Eliminate nesting sites near the building. Keep your lawn mowed; tall grass and weeds make an excellent habitat for rodents. When possible, follow the "100 foot rule": plant gardens and place wood piles, compost heaps, feed bins and trash cans at least 100 feet from the home. Wood piles should be at least 12 inches off the ground. Haul away trash, abandoned vehicles, discarded tires and other items that could serve as rodent nesting sites. Place 3 inches of gravel under the base of mobile homes to discourage burrowing by rodents.

Seal the building. Identify all possible sites of rodent entry. A mouse can fit through a hole slightly larger than 1/4 inch. Use steel screen, sheet metal, galvanized hardware cloth, caulk or weather stripping to seal holes or gaps along the edges of windows and entry doors and garage doors. Check places where pipes and electrical wiring enter the house and seal openings with steel wool.

# If I have a rodent problem in my home, what can I do to eliminate the infestation?

# Should I set out traps?

First, remove the three things required for survival: food, water and places to hide and nest. Second, if rodents are present, set out snap-traps, not cage traps, and be sure to follow the manufacturer's recommendations. (Peanut butter mixed with oats is excellent bait.) Continue trapping for at least two days after the last rodent is trapped. Third, maintain a rodent-free building by correcting conditions that attract rodents. Trapping is useless if the procedures to prevent reinfestation are not followed.

"Building-out" rodents and trapping are the most effective control methods. Rodenticide should be used only to supplement these methods. If one chooses to use a commercially available rodenticide, make sure it is registered with the U.S. Environmental Protection Agency and always follow instructions for product use. If the rodenticide is to be used indoors, be sure it is labeled specifically for interior use. All rodenticide carry warnings that they be placed in tamper-proof bait boxes or in locations not accessible to children, pets and other domestic animals and wildlife. Fleas or mites, which can be a problem if there is a large infestation of rodents, are best controlled with an insecticide appropriately labeled for flea or mite control. If a structure is heavily infested with rodents, however, consult your local or state health department before attempting to control them.

# What should I do if I find a trapped, poisoned or dead rodent in my house or barn?

Always wear intact rubber or plastic gloves when removing dead rodents and when cleaning or disinfecting items or areas contaminated by rodents. Soak or spray dead rodents with a disinfecting solution (see disinfecting information that follows) until thoroughly wet and place in a plastic bag. The bag should then be placed in a second bag and tightly sealed. Dispose of rodents in trash containers with tight-fitting lids or by incineration. After handling rodents, resetting traps and cleaning

contaminated objects or areas, thoroughly wash gloved hands in a general household disinfectant or in soap and hot water. Then remove gloves and thoroughly wash your hands with soap and warm water.

# What type of disinfectant should I use?

The hantavirus is destroyed by detergents and readily available disinfectants such as diluted household bleach or products containing phenol (e.g., Lysol®). Choose an agent that is compatible with the item, object or area to be cleaned and disinfected.

Do not vacuum or sweep rodent-contaminated areas before cleaning, mopping or spraying with a disinfectant. This could cause virus particles in the dust to be spread into the air.

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Toxicology

# **Harmful Algal Blooms (HABs)**

Due to the emergence of harmful algal blooms (HABs) in surface water bodies across the United States, the Illinois Department of Public Health (IDPH) and the Illinois Environmental Protection Agency (IEPA) are conducting surveillance to detect HAB events and associated illnesses.

# What are Harmful Algal Blooms?

Harmful algal blooms result from a rapid growth, or bloom, of blue-green algae (also known as cyanobacteria). Blue-green algae are a natural component of the aquatic environment in Illinois, but excessive blooms can occur in warm-weather months during calm and sunny conditions. Blooms may appear as a thick scum layer or green paint on the surface of the water, and can be a variety of colors such as blue, green, or brown. There may also be a foul odor present during a bloom. In many cases, excessive blooms are associated with fish kills and animal deaths, most notably dogs. Though these warning signs are often good indicators of a potential bloom, water quality testing must be conducted to determine if toxins are present at harmful levels.

# How Can I be Exposed to Harmful Algal Blooms?

Humans are primarily exposed to blooms by incidentally ingesting contaminated water while swimming, wading, or participating in water sports such as canoeing, kayaking, water skiing, or tubing. Exposure can also occur by inhaling water mist while boating or by fishing or eating fish from a contaminated water body. In rare cases, humans can be exposed when untreated surface water is utilized as a drinking water source. You can reduce your exposure to blooms by avoiding waters that are showing signs of a bloom and by washing your body with soap and clean water after swimming in a lake, river, or pond. If your pet has been exposed to a bloom, rinse it with soap and clean water.

# How Can Harmful Algal Blooms Affect my Health?

The production of cyanotoxins is what makes a bloom harmful. The most commonly observed and well-known cyanotoxins include anatoxin, cylindrospermopsin, microcystin, and saxitoxin. Exposure to cyanotoxins can cause a variety of harmful effects within hours of exposure. Incidental exposure from swimming or playing in contaminated water may lead to nausea, diarrhea, lethargy, and irritation of the skin, eyes, and respiratory system. Liver damage and death can occur in pets, livestock, and humans when untreated surface water is used as a drinking water source.

# What Should I do if I See or Have Been Exposed to a Bloom?

If you see a bloom, avoid the water where the bloom is located and notify IEPA via the Illinois EPA HAB Report Form.

If you or your pet have been exposed to a bloom, immediately bathe using soap and clean water and monitor for symptoms associated with exposure. If you become ill, see a doctor or contact the Illinois Poison Center at 1-800-222-1222. If your pet shows exposure symptoms, such as vomiting, fatigue, stumbling and falling, difficulty breathing, trembling, or unusual drooling, call a veterinarian.

Suspected human or animal cases of HAB-related illnesses should be reported to IDPH via the IDPH HAB Human Illness Report Form or the IDPH HAB Animal Illness Report Form.

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# **Head Lice**

# What are the symptoms of a head lice infestation?

The earliest and most common symptom of a head lice infestation is itching, particularly in the area behind the ears and at the nape of the neck. Intense scratching may lead to secondary bacterial infection.

# How are head lice spread?

Head lice can be passed from person to person through direct contact. But they also can be transferred indirectly among clothing items when coats, hats and scarves hang or are stored touching one another (in cloak rooms or when these items are placed against one another on coat hooks or racks). Head lice also can be spread when infested hair brushes or combs are shared or when infested bedding, towels or shower caps are shared. Once present in a home, school or institutional environment, head lice usually spread rapidly.

There are many misconceptions about head lice. They do not transmit communicable diseases. They do not jump or fly; they can only crawl. Head lice depend completely on their host for nourishment; their only source of food is human blood. The prevalence of head lice infestation is no different in individuals with long hair than in those with short hair. Head lice seldom occur on eyebrows or eyelashes. They infest persons from all socioeconomic levels, without regard for age, race, sex or standards of personal hygiene. Animals are not a source of human lice.

# How long do head lice live?

The life span of an adult louse on a host ranges up to 30 days. During this time, the female head louse can deposit about 90 eggs. After incubating for seven to 10 days, the nits hatch and, after another 10 days, mature into adult head lice and the cycle begins again. Off the host, adult head lice can live about two to four days at 74 degrees Fahrenheit (F) and one to two days at 86 degrees. Nits will remain alive off the host for up to 10 days; they will not hatch at or below room temperature (68 degrees F).

# How are head lice infestations treated?

Both prescription and over-the-counter remedies are effective in treating head lice. But it is important that pregnant women and infants be treated under the direction of a physician because of concerns about potentially adverse effects. Be careful not to use topical preparations more frequently and over longer periods of time than directed. Overuse of these preparations may cause dermatitis or result in absorption of potentially toxic quantities of the drug. Since agents that kill lice may not kill nits completely even when used according to directions the U. S. Centers for Disease Control and Prevention (CDC) recommends that infested patients be treated twice. The interval between treatments should approximate the incubation period for nits (seven to 10 days) so the second application will kill any newly hatched parasites. Waiting longer than 10 days to apply a second treatment may allow some parasites to mature and lay more eggs. All persons who have head lice in a household should be treated. To treat an infested person--

Special fine-tooth combs (nit combs) are readily available and can be used to scrape nits and lice off the hair shaft. Combing out nits and lice after proper treatment is not necessary to eliminate infestation, but it may be used for cosmetic reasons or may be required by school "nit-free" policies or by health authorities. Parents and guardians should check treated children for lice and nits daily for two or three weeks after treatment.

# Should objects (e.g., clothing, furniture, etc.) be treated?

Objects that are able to harbor head lice and serve as vehicles of transmission should be treated.

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# **Headaches**

# What are the different types of headaches?

A headache is pain or discomfort in the head, scalp or neck. Headaches are not created equal. The severity, symptoms and causes vary. The different types include tension, migraine, cluster, organic, rebound and chronic daily headaches, as well as many others. Headaches can plague anyone and can stop the strongest and bravest in their tracks. Despite the toll headaches still take on millions of people, enormous progress has been made in treating them. New medications, combined with non-drug therapies, are preventing, stopping or managing some of the toughest headaches around.

#### **Tension**

Tension headaches are often related to stress, depression or anxiety. Approximately 90 percent of all headaches are classified as tension-type headache. The pain is typically generalized all over the head. There appears to be a slightly higher incidence of this type of headache among women, because more females than males seek treatment.

#### Cluster

There are an estimated one million cluster headache sufferers in the United States, of whom 10 percent are afflicted with chronic cluster. Cluster headaches are sharp, extremely painful headaches that tend to occur several times per day for months and then go away for a similar period of time.

# Hormone (Menstrual Migraine)

Women suffer migraines three times more frequently than do men, and, menstrual migraines affect 70 percent of these women. They occur before, during or immediately after the period, or during ovulation. Menstrual migraines are primarily caused by estrogen, the female sex hormone that specifically regulates the menstrual cycle fluctuations throughout the cycle. When the levels of estrogen and progesterone change, women will be more vulnerable to headaches. Because oral contraceptives influence estrogen levels, women on birth control pills may experience more menstrual migraines.

#### Migraine

More than just a "bad headache," a migraine is a legitimate biological disease affecting nearly 30 million Americans; one in every four United States households has a migraine sufferer. Migraine is more common than asthma, diabetes and coronary heart disease combined.

# What are some ways to treat headaches?

Most people with headaches can feel better by making lifestyle changes, learning ways to relax, and occasionally by taking medications. There are two goals when treating any type of headache: prevent future attacks and abort or relieve current pain. Prevention includes taking prescribed medications, avoiding or minimizing the causes, and learning self-help measures, such as biofeedback or relaxation exercises. If your doctor suggests medications, you should realize that they may take several weeks to become effective and they can have side effects. Thus, you must be patient and cooperate with your

health care provider to find the optimal treatment.

# What is a migraine?

Although the exact cause is not known, many experts consider migraine to be an inherited condition where the brain and its serotonin-controlled blood vessels are involved. These headaches can often be triggered by many factors, including stress, certain foods, glaring lights, physical exercise and changes in hormone levels. Migraine headaches usually occur on one side of the head, have a pulsating or throbbing quality, are moderate to severe in intensity and are worsened by physical activity.

# What are the symptoms of a migraine?

Migraine is a characterized by throbbing head pain, which usually begins on one side of the head, although the pain may spread to both sides. These types of headaches are often accompanied by nausea and sensitivity to light and/or sound. The combination of disabling pain and associated symptoms often prevents sufferers from performing daily activities. Symptoms, incidence and severity vary by individual.

# What causes migraines and what can be done to treat them?

While there are not definite answers to the causes of migraine, health care professionals are gaining an understanding of what happens when a migraine attack is in progress. Many things may trigger a migraine. Triggers are not the same for everyone and what causes a migraine in one person may relieve it in another. Triggers may include one or more of the following categories: diet, activity, environment, emotions, medications and hormones, irregular sleep cycles and skipping or delaying meals.

Migraine can be effectively managed. With the help of a healthcare provider, patients can identify and alleviate their symptoms with an appropriate treatment regime. Medications generally fall into two categories:

Health care providers have many options available for the treatment of migraine, so if the first treatment plan is not effective, the next plan probably will be. The chances are very good that migraine attacks can eventually be greatly reduced or even eliminated entirely.

Migraine headaches are misdiagnosed as frequently as they are diagnosed correctly. They are often confused with tension-type or sinus headaches. To aid in the diagnosis, keep a headache diary and record when the headache began and how long it lasted, possible triggers, the location and character of the pain, and what you did to make it stop.

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Heart & Stroke

# **Heart Disease**

There are many types of heart disease and blood vessel diseases. Heart disease is the leading cause of death for men, women, and people of most racial and ethnic groups in the United States. In 2021, about 695,000 people in the United States died from heart disease – that is 1 in every 5 deaths. Coronary heart disease is the most common type of heart disease – killing 375,476 in 2021. Approximately, 5%, or 1 in 20 adults aged 20 and older, have coronary artery disease. Every year, approximately 805,000 people in the United States have a heart attack. Below are brief summaries of the leading diseases of the heart and blood vessels:

Atherosclerosis (hardening of the arteries) occurs when deposits of lipid (fat) material accumulate on the walls of large to medium-sized arteries. Eventually, these plaque deposits will thicken the artery walls, making them hard, brittle and prone to breaking. Blood flow becomes restricted and many times clots will form around these blocked areas. This can cause heart attacks and strokes.

Hypertension (high blood pressure) is the diagnosis when the pressure of the blood moving through your arteries is consistently above the normal range. High blood pressure is dangerous because it makes the heart work too hard and contributes to atherosclerosis. Blood pressure numbers that are less than 120 systolic and less than 80 diastolic are considered within the normal range. Individuals who experience elevated blood pressure readings that are consistently in the range of 120-129 systolic and less than 80 diastolic, are more likely to develop high blood pressure unless steps are taken to control the condition. Hypertension Stage 1 is when an individual's blood pressure is consistently 130 to 139 systolic and 80 to 89 diastolic. At this stage your health care professional will prescribe lifestyle changes and may consider adding blood pressure medications based on other risk factors. Hypertension Stage 2 is when your blood pressure is consistently 140 systolic and 90 diastolic or higher. If your blood pressure is in Hypertension Stage 2, most health care professionals will likely prescribe a combination of blood pressure medications and lifestyle changes. Blood pressures that exceed 180 systolic and 120 diastolic, are considered a hypertensive crisis. If your blood pressure is 180/120, wait five minutes and test your blood pressure again. If readings continue to be high, contact your health care professional. If your blood pressure is more than 180/120 and you are experiencing chest pain, shortness of breath, back pain, numbness, weakness, change in vision, and or difficulty speaking, call 911.

Most people cannot tell they have high blood pressure because there are no signs or symptoms. That is why it is important to see a physician health care professional every year. There are a number of lifestyle changes and medications that can help you control hypertension.

Heart attacks occur when blood flow to part of the heart is blocked, often by a blood clot. If the clot completely cuts off the blood flow, the part of the heart muscle supplied by that artery begins to die.

Heart failure is a general term that means your heart is not pumping blood as well as it should be. This results in the body not getting the oxygen and nutrients it needs. See your health care provider if you notice swelling in feet, ankles and legs (called edema) or if fluid builds up in the lungs (called pulmonary congestion).

Coronary heart disease (CHD) is the most common form of heart disease. It is characterized by a reduction in the blood supply to the heart muscle caused by narrowing or blockage of the coronary arteries. It can present as myocardial infarction (heart attack), angina pectoris (chest pain) or atherosclerosis in the coronary arteries.

#### **Heart Disease Risk Factors**

Risk factors are behaviors or conditions that increase a person's chances of developing a disease. Many of the risk factors for heart disease are within a person's control.

#### High blood pressure

High blood pressure is a major risk factor for heart disease. Work with your health care professional to reach your optimal blood pressure.

# High cholesterol

Cholesterol is a natural substance found in all living tissue. When too much of it builds up in arteries, however, it can be dangerous.

#### Tobacco use

Tobacco use is the No. 1 preventable cause of heart disease.

# Physical inactivity

Physical activity can help you to control blood pressure and to reduce cholesterol levels. It also aids in controlling and maintaining a healthy weight.

#### **Poor nutrition**

Children and adults need to control the amount of fat, particularly saturated fat, in their diets. They also should increase the number of servings of fruits and vegetables they eat each day.

# Overweight/Obesity

The combination of physical inactivity and poor nutrition has given rise to an alarming increase in the obesity rate in Illinois and the rest of the United States. In addition to heart disease, being overweight can cause a number of other health problems.

#### **Diabetes**

This disease affects the body's ability to produce and/or use insulin, a hormone that allows cells to absorb glucose, the body's main source of fuel. If too little (or no) insulin is produced, glucose builds up in the blood and can reach dangerous levels. Diabetes can seriously harm blood vessels throughout the body, including those in the heart, which increases the risks of heart disease. High blood glucose levels cause hardening of the arteries (atherosclerosis), thicken capillary walls and make blood stickier—all significant risk factors for heart disease.

# Who is at risk of developing heart disease?

People at an increased risk are those who:

Other risk factors are a diet high in saturated fats and sodium (salt), weight (overweight and obesity), stress, gender, age, and certain races and ethnicities.

# How can I reduce my risk of developing heart disease?

There are a number of changes you can make in your daily life that will help to reduce your risk of heart disease:

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Heart & Stroke

# **Heart Disease & Stroke**

# Diseases of the Heart and Stroke: Illinois' Leading Killers

#### What Do the Numbers Tell Us?

Heart disease and stroke are the first and fifth leading cause of death, respectively, and also a major cause of disability in Illinois. In 2021, there were 26,280 deaths in Illinois due to heart disease and 6,768 deaths due to stroke. Deaths due to heart disease and stroke combined (33,048) represented almost 27% of all deaths in Illinois in 2021 (125,102).

#### Fast Facts

#### Prevention and Disease Management

Prevention efforts coupled with effective disease management can reduce the incidence of heart disease and strokes, cut the number of deaths from these diseases, and relieve some of the disability suffered by heart disease and stroke survivors.

In 2023, the Illinois Department of Public Health's (IDPH) Cardiovascular Health Program was awarded funding from the Center for Disease Control and Prevention (CDC) to address cardiovascular disease through the mitigation of social barriers.

Evidence links non-medical factors, including systemic racism and the lack of economic opportunities, with poor health outcomes and increased mortality rates, all of which are preventable. Factors such as poverty, inadequate housing, poor health care or lack of access to health care, and social conditions, known as social determinants of health, contribute to long-standing disparities and health inequities. These social conditions contribute to the increased prevalence of cardiovascular disease in the United States and in Illinois. In Illinois, the populations with the greatest social vulnerability are often those with the highest burden of cardiovascular disease. In Illinois it is the non-Hispanic Black population and the rural population (all races and ethnicities) where these social vulnerabilities and cardiovascular burdens are the greatest.

To combat these social conditions, IDPH aims to implement evidence-based strategies contributing to the prevention and management of cardiovascular disease in populations disproportionately at risk. Given the importance of health equity, these activities will also address social and economic factors to help communities and health systems respond to social determinants present in Illinois communities and to offer those at risk or burdened with cardiovascular disease the best health outcomes possible.

To address social conditions to prevent and to treat cardiovascular disease, IDPH collaborates with its partner agencies, colleagues, health systems, local health departments, and social services providers to:

IDPH is working to develop and to implement the Better Together: Illinois Department of Public Health – Cardiovascular Health Learning Collaborative. This learning collaborative will bring together public health systems, health care providers, and community leaders to implement evidence-based practices for cardiovascular disease prevention, detection, control, and management among priority populations. The learning collaborative is expected to facilitate communication and the exchange of ideas to

address social barriers and to improve cardiovascular health.

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**Diseases & Conditions** 

# Helicobacter Pylori

# What is Helicobacter pylori?

Helicobacter pylori (H. pylori) is a spiral shaped bacterium that lives in or on the lining of the stomach. It causes more than 90 percent of ulcers, which are sores in the lining of the stomach or the duodenum (the first part of the small intestine). Before 1982, when this bacterium was discovered, spicy food, acid, stress and lifestyle were considered the major causes of ulcers. Since it is now known that most ulcers are caused by an infection with H. pylori, they can be cured with appropriate antibiotics.

# How common is H. pylori?

About two-thirds of the world's population is infected with H. pylori. In the United States, H. pylori is found more often in older adults, African Americans, Hispanics and lower socioeconomic groups.

# What illness can H. pylori cause?

Most persons who are infected with H. pylori never have any symptoms or problems related to this infection; however, H. pylori can cause gastritis (inflammation of the lining of the stomach) or ulcers of the stomach or duodenum. About 25 million Americans suffer from ulcers.

# What are the symptoms of ulcers?

The most common ulcer symptom is gnawing or burning pain in the abdomen between the breastbone and the navel. Commonly, the pain occurs when the stomach is empty — between meals and in the early morning hours — but it also can occur at other times of the day. It may last from minutes to hours and may be relieved by eating or taking antacids. Less common symptoms include nausea, vomiting and loss of appetite. Sometimes ulcers may bleed; if bleeding continues for a long time, it may lead to anemia with weakness and fatigue. If bleeding is heavy, blood may appear in vomit or stool. Stool containing blood may appear tarry or black.

# How is the infection diagnosed?

Physicians have several methods to test for H. pylori infection. Blood tests can determine if a person has been infected by measuring specific H. pylori antibodies. A breath test can determine if H. pylori is in the patient's stomach. In this test, the patient is given a harmless substance — urea with carbon — to drink. H. pylori breaks down this urea, and the carbon is absorbed into the bloodstream and lungs and then exhaled in the breath. By collecting this breath, the health care provider can measure the carbon and determine whether the bacteria are present.

A physician also can perform endoscopy, in which a small flexible instrument with a camera inside is inserted through the mouth into the esophagus, stomach and duodenum to look for ulcers. During endoscopy, biopsy specimens (tissue samples) of the stomach lining can be obtained. Several tests can be performed on these tissue samples to determine if the patient is infected with H. pylori.

# Should H. pylori be treated?

Persons with stomach or duodenal ulcers should be tested for H. pylori and, if found to be infected, be treated with an antibiotic. Antibiotics are the new cure for ulcers; therapy consists of one to two weeks of one or two antibiotics and a medicine that will reduce the acid in the stomach. This treatment is a dramatic medical advance because eliminating H. pylori with antibiotics means that there is a greater than 90 percent chance the ulcer can be cured for good.

# How do people get infected with H. pylori?

It is not known how the bacteria get into the body or why some people with H. pylori become ill while others do not. The bacteria most likely spread from person to person through the fecal-oral route (when infected fecal matter comes in contact with hands, food or water) or the oral-oral route (when infected saliva or vomit comes in contact with hands, food or water).

# What can people do to prevent infection?

Since the source of H. pylori is not yet known, recommendations for avoiding infection have not been made. In general, it is always wise to eat food that has been properly prepared and to drink water from a source that is known to be clean and safe.

# Are there any long-term consequences of H. pylori infection?

Recent studies have shown an association between long-term infection with H. pyloriand the development of gastric (stomach) cancer. Gastric cancer is the second most common cancer worldwide; it is most common in countries such as Colombia and China, where H. pylori infects more than half the population in early childhood. In the United States, where H. pylori is less common in young people, gastric cancer rates have decreased since the 1930s.

# How can I learn more about H. pylori?

Consult your physician if you are concerned about H. pylori. Although knowledge about the bacteria is incomplete, scientists are working to find out how persons become infected, why some people develop symptoms and what the best treatments are.

(This HealthBeat was adapted from a fact sheet developed by the U.S. Centers for Disease Control and Prevention.)

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Viral Hepatitis

# Viral Hepatitis

Hepatitis is defined as an inflammation of the liver. Hepatitis is commonly caused by a virus. The most common types are Hepatitis A, Hepatitis B, and Hepatitis C. There are two other types, Hepatitis D and Hepatitis E, which are more common in other countries. To learn more about Hepatitis, see the Resources section. For data and statistics specific to Hepatitis, see IQuery and/or data.illinois.gov under the RESOURCES section. Viral hepatitis is the leading cause of liver cancer and the most common reason for liver transplantation. An estimated 4.4 million Americans are living with chronic hepatitis but most do not know that they are infected.

There are vaccines available for Hepatitis A and Hepatitis B. For more information about and to learn if you should be vaccinated, use the Hepatitis Risk Assessment tool under the Resources section.

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Heart & Stroke

# **High Blood Pressure**

# What is high blood pressure?

Blood pressure is the force of blood as it moves through the blood vessels. If blood cannot flow easily through the vessels, the force increases. If the force is too great, you have high blood pressure.

High blood pressure is a serious disease. It increases the workload on the heart and blood vessels and can lead to heart disease, stroke, kidney problems and even blindness.

The medical term for high blood pressure is hypertension. High blood pressure is dangerous because it makes the heart work too hard and contributes to atherosclerosis (hardening of the arteries). It increases the risk of heart disease and stroke, the first and third leading causes of death among Americans.

# How can I tell if I have high blood pressure?

High blood pressure usually has no symptoms. In fact, many people have high blood pressure for years without knowing it. That's why it's called the "silent killer". In 90-95 percent of cases, the cause of high blood pressure is unknown.

A single elevated blood pressure reading doesn't mean you have high blood pressure, but it's a sign that further observation is required. The only way to find out if you have high blood pressure is to have your blood pressure checked.

#### Who is affected?

High blood pressure affects approximately 48% of American adults. It is especially common among non-Hispanic Black adults, who tend to develop it earlier and more often than Whites. Also, many Americans tend to develop high blood pressure as they get older; however, hypertension is not a part of healthy aging. About 63 percent of Americans 60 years of age and older have high blood pressure.

Others at high risk of developing hypertension are persons who are overweight, not physically active, consume a high sodium diet, drink too much alcohol, and have a family history of high blood pressure.

Others at high risk of developing hypertension are persons who are overweight, those with a family history of high blood pressure, and those with a high-normal blood pressure.

# Does smoking tobacco cause high blood pressure?

Smoking tobacco can temporarily raise blood pressure, and it does increase the risk of heart and blood vessel diseases.

Smoking injures blood vessel walls and accelerates the process of hardening of the arteries. If you smoke, it is best to quit. Your risk of having a heart attack is reduced after the first year.

Smoking injures blood vessel walls and speeds up the process of hardening of the arteries. If you smoke, quit. Your risk of having a heart attack is reduced after the first year.

# What do blood pressure numbers indicate?

The higher (systolic) number represents the pressure while the heart is beating.

The lower (diastolic) number represents the pressure when the heart is resting between beats.

The systolic pressure is always stated first and the diastolic pressure second. For example; if a person's blood pressure is 122/76 (122 over 76), the systolic pressure is 122 and the diastolic pressure is 76.

# Categories for blood pressure levels in adults\*

Normal

LESS THAN 120

and

LESS THAN 80

Elevated

120 - 129

and

LESS THAN 80

High Blood Pressure (Hypertension) Stage 1

130 - 139

or

80 - 89

High Blood Pressure (Hypertension) Stage 2

140 OR HIGHER

or

90 OR HIGHER

Hypertensive Crisis (consult your doctor immediately)

HIGHER THAN 180

and/or

**HIGHER THAN 120** 

# How often should I have my blood pressure checked?

If you do not have high blood pressure then you should have your pressure checked at least every two years. If you have high blood pressure consult with your health care provider.

# What are Factors that contribute to high blood pressure?

Below are of several factors that can put you at higher risk for developing high blood pressure, and heart attack, and stroke.

#### Controllable risk factors?

# What are uncontrollable risk factors?

\*BMI (body mass index) is used to define nutritional status and is derived from the following formula: BMI = 703 x Body Weight (in pounds) divided by (Height x Height) (in inches) The standards are the same for men and women. A BMI of 25 to 29.9 is considered overweight.

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# **Histoplasmosis**

# What is histoplasmosis?

Histoplasmosis is an infection caused by a fungus, Histoplasma capsulatum. The principal habitat for this fungus is soil enriched by the buildup of bird or bat droppings, and in fresh bat droppings. Fresh bird droppings have not been shown to present a health risk for Histoplasma capsulatum. In the U.S., the fungus is found most often along the Mississippi and Ohio River Valleys, but it can be found in other parts of the U.S. In people, this uncommon disease affects the lungs and may occasionally affect other parts of the body. Dogs, cats, rats, skunks, opossum, foxes, and other animals also can get histoplasmosis.

# Who gets histoplasmosis?

Anyone can get histoplasmosis. In some areas where the fungus is common, 80 percent or more of the population has been exposed to the fungus by breathing in airborne spores. The initial infection often occurs without causing symptoms, and most persons usually will not develop disease unless the exposure was great. Elevated risk of exposure to the histoplasmosis fungus include:

Long-term smokers and those with preexisting lung disease may be at higher risk for developing the disease. People with severely compromised immune systems — such as those with AIDS or leukemia, persons on steroid therapy, those on chemotherapy, and recent transplant recipients — are vulnerable to a very serious disease known as progressive disseminated histoplasmosis.

# What are the symptoms of histoplasmosis?

The majority of infected persons have no symptoms. When symptoms occur, they vary widely, depending on the form of disease. Acute pulmonary histoplasmosis is a flu-like illness characterized by respiratory symptoms, general malaise, fever, chest pains, and a dry or nonproductive cough. If you have been in contact with bird or bat droppings and have these symptoms, contact your health care provider. Distinct patterns can be seen on chest X-rays. Chronic pulmonary histoplasmosis is characterized by fever, fatigue, decreased appetite, and a productive cough. It progresses over months or years. Progressive disseminated histoplasmosis, the form that can be seen in people with weakened immune systems, can affect multiple organ systems and is usually fatal unless treated.

# How soon after exposure do symptoms appear?

Most people do not experience symptoms. If symptoms occur, they will usually appear within three to 17 days after exposure; the average is 10 days; however, disease onset could occur sooner if exposure is great.

# How is the histoplasmosis fungus spread?

The fungus is found throughout the world and grows in soil that has been enriched with bat or bird droppings or in bat droppings themselves. For example, the fungus is common around old chicken houses, in caves and other areas harboring bats, and around starling and blackbird roosts. The fungus

produces spores that can become airborne if the soil is disturbed. Inhalation of these spores may cause infection. The disease is not spread from person to person. It is not acquired from animals that have the disease.

# What can be done to prevent the spread of histoplasmosis?

The following steps can be taken to reduce exposure to Histoplasma capsulatum:

Large accumulations of bird or bat droppings should be removed by a professional cleanup and restoration firm experienced with hazardous waste disposal. For more information, see the Centers for Disease Control and Prevention document Histoplasmosis, Protecting Workers at Risk at https://www.cdc.gov/niosh/docs/2005-109/pdfs/2005-109.pdf

# Does past infection with histoplasmosis make a person immune?

No. You should always take steps to limit exposure to the histoplasmosis fungus, even if you have had histoplasmosis in the past.

# How is histoplasmosis treated?

Mild disease usually resolves without treatment. Severe cases of acute histoplasmosis and all cases of chronic and disseminated disease are treated with specific antifungal medications.

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HIV/AIDS

# **HIV/AIDS**

HIV remains a serious infectious disease in the world and here in Illinois. The good news is that there has been a great advance in knowledge and the development of effective tools to prevent infections and to prolong and improve quality of life for persons living with HIV. These next few pages provide information that begins with HIV education, testing, care, and support services and where they can be obtained easily throughout Illinois.

Our IL Integrated HIV Prevention and Care Plan 2017–2021; A Roadmap for Collective Action in Illinois outlines the state's approach to combating HIV/AIDS. HIV infection is confirmed by a diagnostic test, either as a simple blood draw or a rapid finger stick procedure. HIV testing is available in many locations throughout Illinois. It is free and includes education and risk reduction counseling, along with condom distribution. Call the HIV/STD Hotline to learn the HIV testing location near you please call 800-243-2437.

If you are a person living with HIV and need medical care and/or supportive services, there are programs available to help meet these needs. HIV Care Connect is the statewide Ryan White care and services program in Illinois. See Resources in the right-hand column for a link to HIV Care Connect. Click on the HIV Care Connect link for the interactive map to find the service location and contact information near you. If you are a pregnant woman living with HIV, specialized care and support services are available to assure a healthy outcome for you and your infant. The Illinois 24/7 Perinatal HIV Hotline is accessible and confidential. See Resources in the right-hand column for the HIV Pregnancy Hotline website link. For more information please call 800-439-4079. In addition to abstinence, proper use of condoms and sterile drug use equipment are part of HIV prevention tactics. Also, there are 2 important biomedical intervention programs you should know about that are highly effective in preventing HIV infection. One program is Pre Exposure Prophylaxis (PrEP). To learn more, see Resources in the right-hand column and click on the PrEP link. Persons who are not HIV positive, but at high risk of infection through sex or injection drug use can take 1 pill a day that includes 2 medications (tenofovir and emtricitabine, brand name Truvada), which prevents the establishment of permanent HIV infection. The other program is Post Exposure Prophylaxis (PEP). To learn more, see Resources in the right-hand column and click on the PEP link. PEP is an effective prevention intervention for persons who have been occupationally (medical personnel or emergency first responders) or non-occupationally exposed to HIV (unprotected sex or sharing drug use equipment with an HIV positive individual). Taking HIV medications within 72 hours of exposure can significantly reduce a person's chance of becoming HIV positive. More information can be obtained about PrEP and PEP medications by contacting your medical provider and/or calling the Illinois HIV/STD Hotline at 800-243-2437. The HIV/AIDS Section is committed to the elimination of stigma and discrimination against persons living with HIV as well as concurring homophobia, transphobia, racism, and gender inequality, all of which fuels the world wide and domestic HIV pandemic. Web pages in this section will provide information on initiatives and actions to address these issues. Illinois HIV/AIDS epidemiological data; harm reduction and condom campaign information; and community engagement and planning, along with announcements of periodic funding opportunities for HIV programs and more can be found within the HIV/AIDS Section's web pages. We invite you to review and use all the information shared, and your feedback will be appreciated.

HIV/AIDS is and remains a serious life-threatening disease; however, a united effort between public health and communities can be victorious in significantly reducing new infections and improving the

quality and dignity of life for persons living with HIV. We invite you to join us—together we can win.

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**Environmental Health Protection** 

# Hot Weather: Understanding and Preventing Heat-Related Illnesses

Hot weather can cause heat-related illness which ranges in severity from relatively mild heat cramps to life-threatening heat stroke. Among weather-related events, periods of extremely hot weather, known as heat waves, are a leading cause of death. Illinois experienced this first-hand in July, 1995 when a heat wave contributed to more than 700 deaths in the Chicago area. Here we address commonly asked questions about hot weather, heat-related illnesses and provide information on how to safely cope with these conditions.

# How do high temperatures affect the body?

Normally, the body cools itself by sweating. If temperatures are extremely high, sweating is not enough to maintain the body's normal temperature. When this happens, blood chemistry can change and internal organs — including the brain and kidneys — can be damaged. Heat can be more stressful if the temperature changes suddenly, since it usually takes several days for the body to adjust to heat.

#### What are some of the most common heat-related conditions?

The most common heat-related conditions are heatstroke, heat exhaustion, heat cramps, sunburn and heat rash. Heatstroke and heat exhaustion are the most serious conditions.

#### What is heatstroke?

Heatstroke occurs when the body becomes unable to control its temperature: the body's temperature rises rapidly, the sweating mechanism fails and the body is unable to cool down. Heatstroke can result from prolonged exposure to high temperature. It can cause death or permanent disability if emergency treatment is not given.

# What are the symptoms of heatstroke?

Symptoms of heatstroke include an extremely high body temperature (above 103°F, orally); red, hot and dry skin; rapid pulse; throbbing headache; dizziness; nausea; confusion; and unconsciousness.

#### How is heatstroke treated?

If symptoms of heatstroke are present, seek medical attention immediately. Find a cool place, preferably an air-conditioned indoor setting. If outside, find a spot in the shade. Put the person in a semi-sitting position. Loosen clothing and bathe the head and body with COLD water. Do not give fluids.

#### What is heat exhaustion?

Heat exhaustion can result when too much time is spent in a very warm environment, resulting in excessive sweating without adequate fluid and electrolyte (salt and minerals) replacement. This can

occur either indoors or outdoors, with or without exercise.

# What are the symptoms of heat exhaustion?

Symptoms of heat exhaustion may include dizziness, headache, nausea, abdominal cramps, shallow breathing, cool and clammy skin, muscle tremors and heavy perspiration. Body temperature will be near normal.

#### How is heat exhaustion treated?

A person suffering from heat exhaustion should be moved to an air-conditioned environment if possible. If outside, move the person to a shady spot. Loosen the person's clothing and encourage him or her to drink cool, non- alcoholic, decaffeinated beverages. It may be necessary to seek medical attention if symptoms worsen or last longer than one hour or if the person has heart problems or high blood pressure. If left untreated, heat exhaustion may progress to heatstroke.

# How can I avoid heat exhaustion and heatstroke?

Try to keep cool during extremely hot weather. Stay in a cool environment (preferably air conditioned), avoid exercising outdoors, drink plenty of fluids — such as water, fruit juices or fruit drinks — and use common sense. Heat injury may develop with or without feelings of discomfort.

# What if I do not have an air conditioner?

Seek out the nearest facility that is air conditioned, such as a designated cooling center. Even short periods of time in a cool environment will lessen the risk of heat injury. Fans alone will not effectively cool an overheated person when air temperatures are above 90° F.

In the wake of the 1995 heat wave in Chicago, many older persons reported being afraid to open windows or to venture out of their homes to go to cooling centers. In these situations, people may want to contact the local police, their church or a community group about being escorted to the nearest cooling center.

# What is "plenty of fluids"?

"Plenty of fluids" means at least 1½ to 2 quarts of fluids daily. Since aging can cause a decreased thirst sensation, older adults should drink at regular intervals, even if they do not feel thirsty. Avoid alcoholic beverages and those containing caffeine. Salt tablets are not substitutes for fluids.

# Who is most at risk for heat-related problems?

Anyone can develop heat-related illnesses. However, certain groups of people are at increased risk during extremely hot weather. These include people who work outside, elderly persons living alone, people with chronic medical conditions, and persons taking certain medications.

# What kinds of medications cause special heat-related problems?

A number of different kinds of medications can pose problems during periods of extremely hot weather. These include diuretics (water pills), many heart medicines, diabetes medicines (tablets and insulin), psychoactive drugs (antidepressants and mood altering drugs), antihistamines (hay fever and allergy medicine) and antihypertensive (high blood pressure) drugs. Do not change or discontinue prescribed medications without advice from your physician.

# What about children? Can they get sick from the heat?

Yes. Young children, particularly infants, are extremely sensitive to heat and can easily become dehydrated (lose more body fluids than usual) from high air temperatures. To help avoid dehydration during extremely hot weather, children should drink plenty of fluids. Young children should be kept out of direct sunlight.

Do you have any recommendations for schools during hot weather?

What are some good tips on how to avoid heat-related illnesses?

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# **Human Papillomavirus**

#### What is Genital HPV Infection?

Genital human papillomavirus (also called HPV) is the most common sexually transmitted infection (STI). There are more than 40 HPV types that can infect the genital areas of males and females. These HPV types can infect the mouth and throat. Most people who become infected with HPV do not even know they have it.

HPV is not the same as herpes or HIV (the virus that causes AIDS). These are all viruses that can be passed on during sex, but they cause different symptoms and health problems. Some of these viruses are called "high-risk" types, and may cause abnormal Pap tests. They may lead to cancer of the cervix, vulva, vagina, anus, or penis. Others are called "low-risk" types, and they may cause mild Pap test abnormalities or genital warts. Genital warts are single or multiple growths or bumps that appear in the genital area, and sometimes are cauliflower shaped. By age 50, at least 80 percent of women will have acquired genital HPV infection.

# How common is HPV?

# HPV (the virus)

Approximately 20 million Americans are currently infected with HPV. Another 6 million people become newly infected each year. HPV is so common that at least 50 percent of sexually active men and women get it at some point in their lives.

#### Genital Warts

About 1 percent of sexually active adults in the United States have genital warts at any one time.

#### Cervical Cancer

Each year, about 12,000 women get cervical cancer in the United States almost all of these cancers are HPV-associated

#### Other cancers that can be caused by HPV

These are less common than cervical cancer. Each year in the United States, there are about:

Certain populations are at higher risk for some HPV-related health problems. This includes gay and bisexual men, and people with weak immune systems (including those who have HIV/AIDS).

# How do people get genital HPV infections?

HPV is passed on through genital contact, most often during vaginal and anal sex. HPV may be passed on during oral sex and genital-to-genital contact. HPV can be passed on between straight and same-sex partners even when the infected partner has no signs or symptoms.

A person can have HPV even if years have passed since he or she had sexual contact with an infected person. Most infected persons do not realize they are infected or that they are passing the virus on to a sex partner. It is also possible to get more than one type of HPV.

Rarely, a pregnant woman with genital HPV can pass HPV to her baby during delivery. Very rarely, the child can develop juvenile-onset recurrent respiratory papillomatosis (JORRP).

# What are the signs and symptoms of genital HPV infection?

#### **Genital Warts**

Usually appear as a small bump or group of bumps in the genital area. They can be small or large, raised or flat, or shaped like a cauliflower. Health care providers can diagnose warts by looking at the genital area during an office visit. Warts can appear within weeks or months after sexual contact with an infected partner even if the infected partner has no signs of genital warts. If left untreated, genital warts might go away, remain unchanged, or increase in size or number. They will not turn into cancer.

#### **Cervical Cancer**

Usually does not have symptoms until it is quite advanced. For this reason, it is important for women to get regular screening for cervical cancer. Screening tests can find early signs of disease so that problems can be treated early, before they ever turn into cancer.

#### Other HPV-related Cancers

Might not have signs or symptoms until they are advanced and hard to treat. These include cancers of the vulva, vagina, penis, anus, and oropharynx (back of throat including base of tongue and tonsils). For signs and symptoms of these cancers, see www.cancer.gov.

# How does HPV cause genital warts and cancer?

HPV can cause normal cells on infected skin to turn abnormal. Most of the time, you cannot see or feel these cell changes. In most cases, the body fights off HPV naturally and the infected cells then go back to normal. But in cases when the body does not fight off HPV, HPV can cause visible changes in the form of genital warts or cancer. Warts can appear within weeks or months after getting HPV. Cancer often takes years to develop after getting HPV.

# How is genital HPV infection diagnosed?

Most women are diagnosed with HPV on the basis of abnormal Pap tests. A Pap test is the primary cancer-screening tool for cervical cancer or pre-cancerous changes in the cervix, many of which are related to HPV. Also, a specific test is available to detect HPV DNA in women. The test may be used in women with mild Pap test abnormalities, or in women older than 30 years of age at the time of Pap testing. The results of HPV DNA testing can help health care providers decide if further tests or treatment are necessary.

The HPV tests on the market are only used to help screen women at certain ages and with certain Pap test findings, for cervical cancer. There is no general test for men or women to check one's overall "HPV status," nor is there an approved HPV test to find HPV on the genitals or in the mouth or throat.

#### Is there a cure for HPV?

There is no "cure" for HPV infection, although in most women the infection goes away on its own. The treatments provided are directed to the changes in the skin or mucous membrane caused by HPV

infection, such as warts and pre-cancerous changes in the cervix.

#### Is there a treatment for HPV or related diseases?

# There is no treatment for the virus itself, but there are treatments for the diseases that HPV can cause

Visible genital warts can be removed by the patient with prescribed medications. The warts can also be treated by a health care provider. Some people choose not to treat warts, but to see if they disappear on their own. No one treatment is better than another.

Cervical cancer is most treatable when it is diagnosed and treated early. But women who get routine Pap tests and follow up as needed can identify problems before cancer develops. Prevention is always better than treatment.

# There is a way to prevent and try to stop the progression of HPV and the precancerous areas and cancers it can cause

The HPV vaccine is safe and effective in preventing the common infection and is recommended for teenagers and adults who were not vaccinated as children.

#### What is the connection between HPV infection and cervical cancer?

All types of HPV can cause mild Pap test abnormalities which do not have serious consequences. Approximately 10 of the 30 identified genital HPV types can lead, in rare cases, to development of cervical cancer. Research has shown that for most women (90 percent), cervical HPV infection becomes undetectable within two years. Although only a small proportion of women have persistent infection, persistent infection with "high-risk" types of HPV is the main risk factor for cervical cancer.

A Pap test can detect pre-cancerous and cancerous cells on the cervix. Regular Pap testing and careful medical follow-up, with treatment if necessary, can help ensure that pre-cancerous changes in the cervix caused by HPV infection do not develop into life threatening cervical cancer. The Pap test used in U.S. cervical cancer screening programs is responsible for greatly reducing deaths from cervical cancer. For 2004, the American Cancer Society estimates that about 10,520 women will develop invasive cervical cancer and about 3,900 women will die from this disease. Most women who develop invasive cervical cancer have not had regular cervical cancer screening.

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# **Human Metapneumovirus**

# What is human metapneumovirus?

Human metapneumovirus (hMPV) is a recently identified member of a family of viruses that also includes respiratory syncytial virus and parainfluenza virus. Although identified in 2001 by investigators from the Netherlands, data suggest this is a common virus that has been responsible for respiratory illnesses for at least 50 years worldwide. Human metapneumovirus can cause upper and lower respiratory tract infections in patients of all ages but respiratory illnesses most often occur in young children or older adults.

# How is human metapneumovirus transmitted?

Spread of the virus is most likely to occur by direct or close contact with the respiratory secretions of infected persons or by contact with objects and surfaces contaminated by their secretions.

# What are the symptoms of human metapneumovirus?

Most persons with hMPV infection have mild symptoms including cough, runny nose or nasal congestion, sore throat and fever. More severe illness, with wheezing, difficulty breathing, hoarseness, cough, pneumonia, and in adults, aggravation of asthma, also has been reported. In children younger than 1 year of age, the elderly and persons who have weak immune systems, hMPV can cause more serious respiratory illness.

# When is human metapneumovirus most common?

It is most common in late winter and early spring in the United States, however, one summer outbreak of hMPV respiratory illnesses in residents and staff of a long-term care facility in the United States has been reported.

# What is the incubation period for human metapneumovirus?

It is believed most persons who develop illness will do so three to five days after being exposed to this virus.

# Is there immunity to human metapneumovirus?

Limited data suggests that reinfection with hMPV can occur. It is believed most children become infected early in life and adult infections represent persons becoming infected with hMPV again. Repeated infection appears to result in milder illness although serious disease is a risk for patients who are immunocompromised.

# How is human metapneumovirus diagnosed?

Human metapneumovirus testing is not readily available. At this time, research laboratories and a limited number of commercial laboratories perform testing for this virus.

# Can human metapneumovirus be treated?

Supportive treatment for patients varies with the severity of the illness but generally treatment consists of fever reducers, antihistamines, breathing treatments and other means of providing comfort to the patient until the illness resolves.

# How can human metapneumovirus be prevented?

Control measures used for other respiratory illnesses should be emphasized: covering the mouth and nose with a tissue when coughing or sneezing, or, coughing or sneezing into the upper sleeve rather than the hands, prompt disposal of used tissues and proper handwashing.

# Can any other species become infected?

Non-human primates can become infected with human metapneumovirus; humans are their likely source of infection.

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# Incontinence

#### What is incontinence?

Incontinence is a problem of the urinary system, which is composed of two kidneys, two ureters, a bladder, and a urethra. The kidneys remove waste products from the blood and continuously produce urine. The muscular, tube-like ureters move urine from the kidneys to the bladder, where it is stored until it flows out of the body through the tube-like urethra. A circular muscle, called the sphincter, controls the activity of the urethra. It is not a part of the urinary system but can play a role in incontinence.

Normally, the bladder stores the urine that is continually produced by the kidneys until it is convenient to urinate, but when any part of the urinary system malfunctions, incontinence can result.

# What are the different types of incontinence?

# Who is affected by incontinence?

Approximately 13 million Americans are incontinent; 85 percent of who are women. Incontinence is most common among the elderly. Fifty percent or more of elderly persons living at home or in long-term care facilities are incontinent. Sufferers may experience emotional as well as physical discomfort. Many people affected by loss of bladder or bowel control isolate themselves for fear of ridicule and lose self-esteem. Adults often find employment impossible.

# How is incontinence diagnosed?

Approximately 80 percent of those affected by urinary incontinence can be cured or improved. Diagnosis includes a medical history and a thorough physical examination. Tests such as X-rays, cystoscopic examinations, blood chemistries, urine analysis, and special tests to determine bladder capacity, sphincter condition, urethral pressure, and the amount of urine left in the bladder after voiding may be required.

#### How is incontinence treated?

Because incontinence is a symptom and not a disease, the method of treatment depends on diagnostic results. Sometimes simple changes in diet or the elimination of medications such as diuretics can cure incontinence. More frequently, treatment involves a combination of medicine, behavioral modification, pelvic muscle re-education, collection devices, and absorbent products.

Despite the high success rates in treating incontinence, only one out of every 12 people affected seeks help. The three major categories of treatment are: behavioral, pharmacological and surgical.

Behavioral techniques sometimes include the following:

Pharmacologic therapy (medications or drugs) is another common treatment for incontinence. Physicians can prescribe medications to help control incontinence, and sometimes they will take a person off a drug that is causing or contributing to incontinence. Of course, only your healthcare

professional should tell you to stop using a drug he/she has prescribed.

Surgical treatment should be performed only after receiving a thorough diagnosis from a healthcare professional. All appropriate nonsurgical treatments should be tried before deciding on surgery. There are many different surgical procedures that may be used to treat incontinence. The type of operation recommended depends on the type and cause of your incontinence. Some of the more common procedures performed to treat urinary incontinence include: bladder neck suspension or sling procedures, periurethral bulking injections (collagen injections around the urethra), or implantation of an artificial urinary sphincter or sacral nerve stimulator. Your healthcare professional will thoroughly discuss any procedure you might need.

For those people whose incontinence cannot be cured or for those who are awaiting treatment, there are other devices or products to help manage incontinence. These include catheters, pelvic organ support devices, urethral inserts (plugs), external collection systems, penile compression devices, and absorbent products.

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Influenza (Flu)

# Influenza (Flu)

#### Influenza Viruses

Influenza viruses are divided into three types, designated A, B, and C. Influenza types A and B are responsible for epidemics of respiratory illness that occur almost every winter and are often associated with increased rates for hospitalization and death. Influenza type C differs from types A and B in some important ways. Type C infection usually causes either a very mild respiratory illness or no symptoms at all. It does not cause epidemics and does not have the severe public health impact that influenza types A and B do. Efforts to control the impact of influenza are aimed at types A and B.

While there are many different flu viruses, each season a flu vaccine protects against the 3 or 4 viruses that research suggests will be most common. Three kinds of flu viruses commonly circulate among people today: Influenza A (H1N1) viruses, influenza A (H3N2) viruses, and influenza B viruses.

The 2023-2024 influenza vaccine is made to protect against the following:

All vaccines for the 2023-2024 season are quadrivalent.

#### If You Get Sick

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. Symptoms of flu include:

\*It is important to note that not everyone with the flu will have a fever.

While getting a flu vaccine each year is the best way to protect against flu, influenza antiviral drugs can fight against influenza, offering a second line of defense.

## **Antiviral Drugs**

Antiviral drugs are an important second line of defense against the flu.

There are four FDA-approved antiviral drugs recommended by the Centers for Disease Control and Prevention (CDC) to treat flu this season.

Antiviral drugs differ in terms of who can take them, how they are given, their dose (which can vary depending on a person's age or medical conditions), and side effects.

For more information, see CDC Influenza Antiviral Medications: Summary for Clinicians or consult the package insert for each drug. Your doctor can help decide whether you should take an antiviral drug this flu season and which one you should use.

#### If You Get Sick

Most healthy people recover from the flu without complications. If you get the flu:

## **Emergency Warning Signs**

In children, emergency warning signs that need urgent medical attention include

In adults, emergency warning signs that need urgent medical attention include

Seek emergency medical care if you or someone you know is experiencing any of the signs above.

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# **Kidney Cancer**

#### What is Kidney Cancer?

Renal cell carcinoma is the most common type of kidney cancer and accounts for more than 90 percent of malignant kidney tumors. Like all cancers, renal cell carcinoma begins small and grows larger over time. Although renal cell carcinoma usually grows as a single mass within the kidney, a kidney may contain more than one tumor. Sometimes tumors may be found in both kidneys at the same time.

Some renal cell carcinomas are noticed only after they have become quite large. Most are found before spreading to other organs through the bloodstream or lymph system. Like most cancers, renal cell carcinoma is difficult to treat once it has spread.

Facts: According to the Illinois State Cancer Registry, in 2008, about 2,050 new cases of kidney and renal pelvic cancer will be diagnosed in Illinois. Of these, about 1,230 will be in men and about 820 will be in women. About 570 Illinoisans are expected to die of kidney and renal pelvic cancer in 2008. Most renal cell carcinomas occur in adults between the ages of 50 and 70 years. They rarely develop in children and young adults.

## What are the Causes and Risk Factors of Kidney Cancer?

Researchers have found several important risk factors for renal cell carcinoma, and are beginning to understand how these risk factors can alter the DNA of kidney cells and cause these cells to become cancerous.

#### The common risk factors include:

Smoking: Cigarette smoking is a major risk factor. It increases the risk of developing renal cell carcinoma by about 40 percent. Gender: Renal cell carcinoma is about twice as common in men. Obesity: People who are obese have an increased risk of kidney cancer. Physical activity: Several studies have found that inactive people are more likely to develop kidney cancer than people who exercise regularly. Chemicals: Many studies suggest that workplace exposure to certain chemicals and substances increases the risk for renal cell carcinoma. Some of these are asbestos, cadmium (a type of metal), some herbicides, benzene, and organic solvents, particularly trichloroethylene. Family history: People with a close family history of renal cell cancer, particularly in a brother or sister, have a much greater chance of developing this cancer. Blood pressure: High blood pressure increases the risk of kidney cancer. People with both high blood pressure and obesity may have a risk that is three times greater than normal. Kidney dialysis: Long-term kidney dialysis is a risk factor for kidney cancer.

## What are the Symptoms of Kidney Cancer?

#### Common symptoms of kidney cancer include:

An infection, cyst or other problems also can cause the same symptoms. It is important to report any of these symptoms to a doctor.

# **How to Prevent Kidney Cancer**

Many cases of renal cell carcinoma can be prevented. To lower your risk:

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Lead Poisoning Prevention

# **Lead Poisoning Prevention**

Lead poisoning, the number one environmental illness of children, is caused primarily by lead-based paint in older homes. While Illinois has made great progress in recent years, we maintain one of the highest rates in the nation for the number of children with elevated blood lead levels. The most common exposure to lead by children is through the ingestion of paint chips and contaminated dust from deteriorated or disturbed lead-based paint in homes built before 1978. About 75 percent of Illinois homes built before 1978 contain some lead-based paint. Other exposures may be from imported goods or food containing lead.

## The Illinois Lead Program's Goals and Responsibilities

The primary objective of the Illinois Lead Program is to eliminate the incidence of childhood lead poisoning. Program funding is provided through a federal grant by the U.S. Centers for Disease Control and Prevention. The program conducts management responsibilities, nursing consultations, education, data compilation, and also licenses lead professionals. The role of lead prevention and intervention activities are delegated to local health departments and health districts that provide services under a grant agreement.

The goal of the Program is to provide assistance for case management services, education and outreach through training and community interventions. Also, the program compiles data and produces surveillance reports for program evaluation.

The program partners with numerous agencies and organizations throughout the state whose common interest is to alleviate lead exposure and assist in promoting a healthy environment. A diverse 40 member team, the Illinois Lead Poisoning Elimination Advisory Council, provides program guidance and oversight for carrying out the goals of the Strategic Plan for the Elimination of Childhood Lead Poisoning.

The program's responsibilities include three key areas for prevention and intervention activities assisting families;

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# Leptospirosis

#### What is leptospirosis?

Leptospirosis is a disease caused by a bacterium, Leptospira. Human disease is associated with contact with wild and domestic animal urine. It is extremely rare, with only about one human case reported annually in Illinois.

## How does a person get leptospirosis?

Leptospirosis is spread mainly by contact with water or soil contaminated by the urine of infected animals. Persons can get the disease by swimming or wading in fresh unchlorinated water contaminated with animal urine or by coming into contact with wet soil or plants contaminated with animal urine. Chlorinated water, such as that in swimming pools or municipal drinking water, has not been shown to transmit leptospirosis. The disease also can be transmitted through direct contact with urine, blood or tissue from an infected animal. The bacteria can enter through broken skin or through the soft tissues on the inside of the mouth, nose or eyes. It is generally not transmitted from person to person.

## What are the symptoms of leptospirosis?

Symptoms of leptospirosis include high fever, headache, chills, muscle aches, conjunctivitis (red eyes), diarrhea, vomiting, and kidney or liver problems (which may include jaundice), anemia and, sometimes, rash. Symptoms may last from a few days to several weeks. Although deaths have occurred, they are rare. In some persons, the infection can be mild and without obvious symptoms.

## How soon after exposure do symptoms appear?

The incubation period is usually 10 days but can range from 2 to 21 days.

## How is leptospirosis diagnosed?

Leptospirosis is diagnosed using a specific antibody test available through public health laboratories and by culture.

## 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 include penicillin, streptomycin, tetracycline or 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, meningitis, liver failure and respiratory distress. In rare cases, death may occur.

How can leptospirosis be prevented?

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## Leukemia

## What is Leukemia (Blood Cancer)?

Leukemia starts in the soft, inner part of the bones (bone marrow), but often moves quickly into the blood. It can then spread to other parts of the body, such as the lymph nodes, spleen, liver, central nervous system and other organs. Both children and adults can get leukemia, which is a complex disease with many different types and subtypes.

Bone marrow is the soft, spongy, inner part of bones. All of the different types of blood cells are made in the bone marrow. Bone marrow includes blood-forming cells, fat cells and tissues that aid the growth of blood cells. Early blood cells are called stem cells which grow in an orderly process to produce red blood cells, white blood cells and platelets. There are three main types of white blood cells - granulocytes, monocytes and lymphocytes.

Any of the blood-forming or lymphoid cells can turn into a leukemic cell. Once that happens, the cell reproduces to form many new cancer cells. Eventually, these cells can overwhelm the bone marrow, spill out into the bloodstream and spread to other organs.

There are four common types of leukemia based on how quickly the disease develops and the type of white blood cell that is affected. In acute leukemia blood cells are very abnormal, increase rapidly and worsen quickly. In chronic leukemia the abnormal blood cells can still do their work early in the disease but slowly get worse.

#### The four common types of leukemia are:

Chronic Lymphocytic Leukemia (most often occurs in those older than age 55 and almost never in children); Chronic Myeloid Leukemia (affects mainly adults); Acute Lymphocytic Leukemia (most common type of leukemia in young children but also may affect adults); and Acute Myeloid Leukemia (occurs in both adults and children).

Facts: According to the Illinois State Cancer Registry, in 2008, about 1,720 new cases of leukemia will be diagnosed in Illinois. Of these, about 950 will be in men and about 770 will be in women. About 1000 Illinoisans will die of leukemia in 2008.

#### What are the Causes and Risk Factors of Leukemia?

The exact cause of leukemia is not known. Studies have found the following risk factors for leukemia.

Radiation: People exposed to very high levels of radiation are much more likely to develop leukemia. These high levels of radiation may have been caused by atomic bomb explosions, nuclear power plant accidents and medical treatment using radiation. Exposure to chemicals: Exposure to high levels of chemicals in the work place, including benzene and formaldehyde, can cause leukemia. Smoking: Smoking is a proven risk factor for acute myeloid leukemia. Drugs: Drugs with alkylating agents, commonly used in chemotherapy, are associated with the development of leukemia after long-term therapy. Genetic disorders: Certain genetic disorders like Down syndrome may increase the risk of developing leukemia.

## What are the Symptoms of Leukemia?

Depending on the number of abnormal cells and where these cells collect, patients with leukemia may have a number of symptoms.

#### Common symptoms of leukemia may include:

An infection or another problem also could cause these symptoms. It is important to report any of these symptoms to a doctor.

#### **How to Prevent Leukemia**

Most people who develop leukemia do not have any of the risk factors. The cause of leukemia is unknown. Therefore, preventing most cases of leukemia is not possible. There is one important exception: smoking. About 20 percent of adult acute myeloid leukemia cases are linked to smoking.

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## Listeriosis

#### What is listeriosis?

Listeriosis, which is caused by eating food contaminated by the bacteria Listeria monocytogenes, can be a serious disease. In the United States, an estimated 1,850 persons become seriously ill with listeriosis each year. In Illinois, approximately 20 cases of listeriosis are reported annually; about 25 percent of the cases die.

#### Who is at risk for listeriosis?

While anyone can become ill from eating food contaminated by the bacteria, pregnant women, newborns and adults with weakened immune systems are most at risk. Pregnant women are about 20 times more likely than other healthy adults to get listeriosis. About one-third of all reported cases happen during pregnancy. Infection during pregnancy may result in spontaneous abortion during the second and third trimesters or stillbirth.

Those with weakened immune systems (for example, the elderly and persons with cancer, diabetes or kidney disease or HIV/AIDS) are more likely to get listeriosis than people with normal immune systems.

## How does a person get listeriosis?

You get listeriosis from eating food contaminated by the bacteria. Babies can be born with the disease if their mothers ate contaminated food during pregnancy. Although healthy adults and children may consume contaminated food without becoming ill, those who are at increased risk can probably get the disease after consuming even a few bacteria.

## How does Listeria get into food?

Listeria monocytogenes is found in soil and water. Vegetables can become contaminated from the soil or from manure used as fertilizer. Animals can carry the bacteria without appearing ill and meat or dairy products from these animals can be contaminated. The bacteria also have been found in a variety of raw foods, such as uncooked meats and vegetables, as well as in processed food, that become contaminated after processing, such as cheese and cold cuts at the deli counter. Unpasteurized (raw) milk or foods made from raw milk may contain the bacteria.

# How do you know if you have listeriosis?

A person with listeriosis usually develop fever, muscle aches and, sometimes, gastrointestinal symptoms such as nausea and diarrhea. If infection spreads to the nervous system, symptoms such as headache, stiff neck, and confusion, loss of balance or convulsions can occur.

Infected pregnant women may experience only a mild, flu-like illness. However, infection during pregnancy can lead to premature delivery, infection of the newborn or even stillbirth.

There is no routine screening test for susceptibility to listeriosis during pregnancy, as there is for rubella or some other congenital infections. If you have symptoms such as fever or stiff neck, you should

consult your physician. A blood or spinal fluid test (to cultivate the bacteria) will show if you have listeriosis. During pregnancy, a blood test is the most reliable way to find out if symptoms are due to listeriosis.

#### How can you reduce your risk for listeriosis?

As with other foodborne illnesses, there are several guidelines that will help to reduce the risk of infection with Listeria monocytogenes:

Persons who are at high risk — pregnant women and persons with weakened immune systems — should follow these additional recommendations:

#### How is listeriosis treated?

When infection occurs during pregnancy, antibiotics given promptly to the pregnant woman can often prevent infection of the fetus or the newborn. Babies with listeriosis receive the same antibiotics as adults.

Even with prompt treatment, however, some infections result in death. This is particularly likely in the elderly and in persons with other serious medical problems.

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## **Liver Cancer**

#### What is Liver Cancer?

The liver is the largest internal organ in the body. It lies under the right ribs, just beneath the right lung and diaphragm (the membrane below the lungs that moves up and down as you breathe). The liver performs several vital functions. It processes and stores many of the nutrients absorbed from the intestine, makes some of the clotting factors needed to stop bleeding from a cut or injury, and secretes bile into the intestine to help absorb nutrients.

The liver also plays an important part in removing toxic wastes from the body. Because the liver is made up of several different types of cells, several types of tumors can form in the liver. Some of these are cancerous and some are benign (not cancerous).

Most of the time when cancer is found in the liver it spreads to the liver from a cancer that began somewhere else in the body. These tumors are named after the place where they began (primary site) and are further described as metastatic.

Facts: According to the Illinois State Cancer Registry, in 2008, about 650 new cases of liver cancer will be diagnosed in Illinois. Of these, about 460 will be in men and about 190 will be in women. About 520 Illinoisans are expected to die of liver cancer in 2008. Liver cancer occurs more often in people older than age 60.

#### What are the Causes and Risk Factors of Liver Cancer?

The exact cause of liver cancer is not known. Scientists have found that people with certain risk factors are more likely than others to develop liver cancer. Common risk factors include:

Gender: Men are twice as likely as women to get liver cancer. Obesity: Obesity increases the risk of developing liver cancer. Family history: People who have family members with liver cancer may be more likely to get the disease. Viral infection: The most important risk factor for liver cancer is a chronic infection (on-going) with the hepatitis B or the hepatitis C virus. These viruses can be passed from person to person through blood (such as sharing needles) or sexual contact. An infant may catch these viruses from an infected mother. Liver cancer can develop after many years of infection with the viruses. Cirrhosis: Cirrhosis is a disease that develops when liver cells are damaged and replaced with scar tissue. It may be caused by alcohol abuse, certain drugs or chemicals and certain viruses or parasites. About 5 percent of people with cirrhosis develop liver cancer. Smoking and alcohol: There is a link between smoking and liver cancer. The risk may be even greater for people who also abuse alcohol. Aflatoxin: Liver cancer can be caused by aflatoxin, a harmful substance made by certain types of fungus that can contaminate peanuts, wheat, soybeans, ground nuts, corn and rice. Long-term exposure to aflatoxins increases the risk of liver cancer.

## What are the Symptoms of Liver Cancer?

Most of the time liver cancer in the early stages does not cause symptoms. If symptoms are present, they may include:

The above symptoms could be caused by liver cancer, but they also can be caused by other cancers or conditions. It is important to report any of these symptoms to a doctor.

#### **How to Prevent Liver Cancer**

Measures that reduce exposure to risk factors can help prevent most liver cancer.

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# **Lung Cancer**

Lung cancer is the leading cause of cancer death. In Illinois, between 1973 and 1992, the death rate from lung cancer rose more than the rate for all other cancers combined, including breast, prostate and colorectal cancers. In Illinois, projections for 2001 indicate that there will be more than 8,540 new cases of invasive lung cancer and more than 7,000 people will die. Experts predict that in the next four years, twice as many women will die from lung cancer as from breast cancer.

The lungs are large and cancer can grow in them for a long time, often for as long as 10 years or more, before symptoms occur. For this reason, by the time many people find out they have lung cancer, it has already become advanced and spread to other parts of the body.

Lung cancer is largely preventable by avoiding its risk factors.

## **Causes of Lung Cancer**

Cigarette smoking is the direct cause of about 85 percent of all lung cancers. Other causes are exposure to secondhand smoke, radon, certain industrial substances such as asbestos and occupational radiation. Additionally, medical and environmental sources, air pollution, and tuberculosis or other lung diseases can also cause lung cancer.

About 20 percent of people who die from lung cancer have never smoked. People who quit smoking may still get lung cancer.

#### Who is at Risk

Persons who have smoked cigarettes have the largest risk of getting lung cancer. Pipe and cigar smokers have a higher risk of lung cancer than nonsmokers. The number of years a person smokes, the amount smoked per day and how deeply the person inhales all affect risk of developing lung cancer. Others at risk include those exposed to secondhand smoke, individuals who have had tuberculosis or other lung diseases such as emphysema, and people exposed to substances such as asbestos, chromium, radon and other industrial or environmental chemicals.

## **Symptoms**

Early diagnosis of lung cancer is difficult because a lung tumor big enough to cause symptoms is usually advanced. Occasionally, lung cancer is detected as a shadow on a routine chest X-ray. If present the following symptoms should be discussed with a doctor.

#### What To Do

If you smoke, quit. Stopping smoking, or never starting, greatly reduces a person's risk for developing lung cancer. Stay away from second-hand smoke.

Eliminate radon if it is present in your home. A kit available at most hardware stores allows homeowners to measure radon levels in their homes. The home radon test is easy to use and inexpensive. Once a radon problem is corrected, the hazard is gone for good.

Protect your lungs from inhaled particles that can lodge in the lungs, damage cells and increase the risk for lung cancer. Workers should use protective equipment, such as masks, and follow recommended work practices and safety procedures. Avoid asbestos exposure.

#### How common is lung cancer in women?

Lung cancer is the largest single cause of cancer deaths in Illinois women. For years, men were at higher risk for lung cancer because of their higher smoking rates. However, with the rising number of women who smoke, lung cancer surpassed breast cancer as the leading cause of cancer deaths among women. From 1975 to 1995, the number of Illinois women who died of lung cancer increased almost 180 percent compared to an increase of about 22 percent in Illinois men.

#### If I do not smoke, can I develop lung cancer?

Smoking causes 87 percent of lung cancer, but what about the other 13 percent? There is evidence that exposure to tobacco smoke in the home, usually from a smoking spouse, may increase the risk of lung cancer in non-smoking women. Nearly nine out of 10 non-smoking Americans are exposed to "second-hand" smoke, as measured by levels of nicotine in their blood. The best scientific studies show that restrictions on second hand smoke reduce the risk of death and injury to non-smokers, including the hundreds of thousands of children with asthma and other respiratory illness. The U.S. Food and Drug Administration (FDA) has classified second-hand smoke as a group A carcinogen (known to cause cancer in humans). More studies are needed to determine how much exposure might be harmful in any of these settings.

#### What is the current treatment for lung cancer?

The best way to avoid death from lung cancer is never to smoke, or to stop smoking. Once lung cancer is diagnosed, there are several treatment options, including radiation, various chemotherapies and surgery. Survival rates have improved for non-small cell lung cancer because of advances in combination radiation/chemotherapy treatment. However, small cell lung cancer is still very difficult to treat. Small cell is the most aggressive of lung cancers, and many patients have advanced disease at the time of diagnosis. Small cell lung cancer is responsive to both chemotherapy and radiation, yet nearly all these patients eventually relapse and need additional treatment.

There is a clear need for more effective treatments for lung cancer. New advances in research have recently led to new drugs that can protect normal cells from being destroyed from chemotherapy.

Early detection remains the key to successful therapy. If you have a history of chronic coughing, coughing up blood, chest pain or fever, you should be evaluated by your physician as soon as possible.

Lung cancer is not the only smoking- related cause of death in women. The World Health Organization states that at least 25 percent of women smokers will die of smoking-related disease such as cardiovascular disease and chronic obstructive pulmonary disease (COPD).

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# Lupus

#### What is SLE?

Systemic lupus erythematosus (SLE), often simply called "lupus," is a type of arthritis that affects the joints, muscles and other parts of the body. Lupus involves swelling that may affect many parts of the body including the heart, lungs, skin, joints, kidneys, nervous system and blood-forming organs. Symptoms of lupus may include the following:

#### What causes SLE?

The cause of systemic lupus erythematosus is unknown. The immune system of a person with lupus does not work as it should and attacks healthy cells and tissue. There may be a combination of genetic, environmental and possibly hormonal factors that work together to cause the disease.

#### Who is at risk?

Women are at higher risk of getting lupus than men. Lupus usually occurs during a woman's child-bearing years. Lupus is more common among African-American, Native American, Chinese, Hispanic and Filipino populations.

In some families, inherited factors play a role in a person's risk for developing arthritis. If a parent or other close relative has been diagnosed with arthritis, it is important to share this history with a health care provider. Early diagnosis and treatment is the key to successful management of arthritis.

## How is it diagnosed?

Lupus may be difficult to diagnose because there are many different symptoms. Diagnosis of lupus is based on medical history, physical examination and medical tests. A blood test called an ANA, a urinalysis, X-rays and other blood tests may be done to help the doctor diagnose lupus.

#### How is it treated?

There is no cure for lupus, but proper medical treatment can help persons with lupus live long, active lives. Treatment with non-steroidal anti-inflammatory drugs (NSAIDs) can help control joint pain and swelling and reduce fever as well as reduce swelling of the lung and heart linings. Corticosteroids such as prednisone also can help reduce swelling in the joints, kidneys and other organs. Antimalarial drugs can be useful to reduce joint pain and swelling, skin and mouth sores and sun sensitivity. They also may prevent flare-ups of the disease. Because the immune system is overactive in persons with lupus, drugs that suppress the immune system, such as methotrexate, often are used. Many of the drugs used to treat lupus have potentially severe side effects, and patients should be monitored closely.

Successfully dealing with lupus requires self-management skills. It is important for patients to learn about the disease and to take part in their own care. Working with health care professionals allows a person to share in decision making and gain a sense of control. Getting adequate rest and regular exercise, limiting alcohol use and eating a balanced diet can improve immune system function.

Because ultraviolet light can trigger a flare-up of lupus, it is important to use sunscreen with a sun protection factor (SPF) of 15 or higher and to avoid tanning beds.

Research shows that patients who take part in their own care report less pain and make fewer doctor visits, as well as enjoy a better quality of life.

#### When should a person get help?

A person with an unexplained rash, fever or extreme fatigue should see a doctor. Once the diagnosis of lupus has been made, it is important to receive regular medical care to allow the doctor to note changes and possibly predict flare-ups. If symptoms are identified early, treatment may be more effective. Lupus poses an increased risk of miscarriage and complications during pregnancy. Women diagnosed with lupus who are considering pregnancy should seek medical advice to determine what steps can be taken to ensure the safest possible pregnancy and reduce risks to the baby.

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Tickborne Illnesses

# Lyme Disease

#### What is Lyme disease?

Lyme disease is a bacterial disease transmitted by infected ticks. It was first recognized in the United States in 1975 after a mysterious outbreak of arthritis near Old Lyme, Connecticut. Since then, reports of Lyme disease have increased dramatically, and the disease has become an important public health problem.

## How does a person get Lyme disease?

Lyme disease is transmitted by the bite of an infected deer tick, which also is known as the black-legged tick. (Not all ticks carry the bacterium, and a bite does not always result in the development of Lyme disease. However, since it is impossible to tell by sight which ticks are infected, it is important to avoid tick bites whenever possible.) Immature deer ticks can be very small, about the size of the head of a pin; adult deer ticks are slightly larger. Both can be infected with and transmit Lyme disease. Deer ticks acquire the bacteria by feeding primarily on small mammals infected with the bacteria, particularly the white-footed mouse. (Domestic animals can become infected with the Lyme disease bacteria and some may develop arthritis, e.g., dogs, cattle and horses.) Deer ticks infected with the bacteria that cause Lyme disease have been found in Illinois. Areas in the United States where deer ticks are most frequently infected with Lyme disease are the northeastern United States (from Massachusetts to Maryland), northern California, and north central states, especially Minnesota and Wisconsin. However, Lyme disease has been reported in almost all states in the United States as well as in many countries throughout the world.

## What are the symptoms of Lyme disease?

Signs and symptoms can vary greatly from one person to another. Symptoms also vary with the length of time a person has been infected. A ring-like red rash occurs in about 70 - 80 percent of cases and begins three days to 32 days after the bite of an infected tick. The red rash at the bite site is circular and grows larger over a few days or a few weeks. In the center, the rash usually clears and has been described as resembling a bull's-eye. Generally, the rash is not painful. Often this rash is accompanied by one or more nonspecific symptoms: fatigue, chills and fever, headache, swollen lymph nodes, and joint and muscle pain. An allergic reaction to tick saliva can often occur at the site of the tick bite. Such allergic reactions, which are not a sign of Lyme disease, usually occur within 72 hours after the tick bite, usually do not expand beyond 2 inches in diameter like the Lyme rash and disappear within a few days.

Some people are not diagnosed with Lyme disease in its initial stages because early symptoms are similar to those of more common diseases, such as a flu-like illness without a cough or mononucleosis, and many infected persons do not recall a tick bite. Day, weeks, months or years later other symptoms can develop if the disease is not diagnosed and treated. These include fever, severe headache and stiff neck, certain heart irregularities, temporary paralysis of facial muscles, pain with numbness or weakness in the arms or legs, loss of concentration or memory problems, and, most commonly, Lyme arthritis.

#### When should I seek a physician's care after a tick bite?

If you experience a rash or any unexplained illness accompanied by fever following a tick bite, you should consult your physician and explain that you were bitten by a tick.

## Can Lyme disease be treated?

Yes. People treated with appropriate antibiotics in the early stages of Lyme disease usually recover rapidly and completely. Antibiotics commonly used for oral treatment include doxycycline, amoxicillin, or cefuroxime axetil. People with certain neurological or cardiac forms of illness may require intravenous treatment with antibiotics such as ceftriaxone or penicillin. For additional information, please consult the CDC webpage at https://www.cdc.gov/lyme/treatment/index.html.

## How do I avoid getting bitten by a tick?

The best way to protect you against Lyme disease and other tickborne illnesses is to avoid tick bites. This includes avoiding tick-infested areas. However, if you live in or visit wooded areas or areas with tall grass and weeds, follow these precautions against Lyme disease and other tickborne diseases like Rocky Mountain spotted fever, ehrlichiosis and tularemia:

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# Lymphogranuloma Venereum (LGV)

#### What is LGV?

Lymphogranuloma venereum (LGV) is caused by C. trachomatis. The most common clinical manifestation of LGV among heterosexuals is tender inguinal and/or femoral lymphadenopathy that is typically unilateral. A self-limited genital ulcer or papule sometimes occurs at the site of inoculation. However, by the time patients seek care, the lesions have often disappeared. Rectal exposure in women or men who have sex with men (MSM) can result in proctocolitis, including mucoid and/or hemorrhagic rectal discharge, anal pain, constipation, fever, and/or tenesmus. LGV is an invasive, systemic infection, and if it is not treated early, LGV proctocolitis can lead to chronic, colorectal fistulas and strictures. Genital and colorectal LGV lesions can also develop secondary bacterial infection or can be coinfected with other sexually and nonsexually transmitted pathogens.

Genital and lymph node specimens (i.e., lesion swab or bubo aspirate) can be tested for C. Trachomatis. In the absence of specific LGV diagnostic testing, patients with a clinical syndrome consistent with LGV, including proctocolitis or genital ulcer disease with lymphadenopathy, should be treated for LGV as described in this report.

#### How do people get LGV?

LGV can be transmitted during vaginal and anal sex.

## What are the symptoms of LGV?

Early symptoms of LGV infection include a small, painless ulcer on the genitals or anus occurring three to thirty days following exposure. More common symptoms include tender lymph nodes in the groin area that may be swollen and inflamed with genital exposure, and/or rectal bleeding and drainage from the rectum with receptive anal exposure.

## What complications can result form untreated LGV?

Lymph nodes in the groin area can swell and rupture causing permanent scarring and severe pain. Patients with rectal infections can have pain around the anus, drainage from the rectum, and rectal bleeding. If left untreated, infection can lead to rectal scarring and permanent narrowing (stricture) of the rectum.

## How is LGV diagnosed?

The diagnosis of LGV is suspected in a person with typical symptoms and in whom other diagnoses, such as chancroid, herpes and syphilis have been excluded. The diagnosis is usually made by a blood test that detects specific antibodies to chlamydia, which are produced as part of the body's immune response to becoming infected with LGV. Additional tests may be available through your doctor.

#### What is the treatment for LGV?

Treatment cures infection and prevents ongoing tissue damage, although tissue reaction to the infection can result in scarring. Buboes might require aspiration through intact skin or incision and drainage to prevent the formation of inguinal/femoral ulcerations. Doxycycline is the preferred treatment 100 mg orally twice a day for 21 days. If Doxycycline cannot be used, Erythromycin 500 mg orally four times a day for 21 days can be substituted.

#### **Followup**

Patients should be followed clinically until signs and symptoms have resolved.

#### Management of Sex Partners

Persons who have had sexual contact with a patient who has LGV within the 60 days before onset of the patient's symptoms should be examined, tested for urethral or cervical chlamydial infection, and treated with a chlamydia regimen (azithromycin 1 gm orally single dose or doxycycline 100 mg orally twice a day for seven days).

#### Special Considerations

Pregnancy Pregnant and lactating women should be treated with erythromycin. Azithromycin might prove useful for treatment of LGV in pregnancy, but no published data are available regarding its safety and efficacy. Doxycycline is contraindicated in pregnant women.

HIV Infection Persons with both LGV and HIV infection should receive the same regimens as those who are HIV negative. Prolonged therapy might be required, and delay in resolution of symptoms might occur.

## How can LGV be prevented?

#### How can LGV be prevented?

There are a number of ways to prevent or reduce the risk of acquiring or transmitting LGV:

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## **Measles**

#### **Measles Case Counts**

#### Number of Cases per Year

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#### 2024 Cases per County

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Last Updated: 4/25/2024

\*Current case count for 2024. Subject to change.

## Measles Cases in Illinois (1917-2024)

#### Table Data for 1917-2024

#### What is measles?

Measles is a serious, highly contagious disease caused by a virus. The virus is spread easily through the air when an infected person coughs or sneezes or by direct contact with infected nose or throat secretions.

#### How common is measles?

Prior to widespread immunization, measles was common in childhood. In fact, almost everyone born before 1957 has already had measles. Currently, measles usually occurs in preschool-age children who have not had their measles vaccine or in school-age children and young adults who have had only one shot of measles vaccine. Measles occurs primarily in the late winter and early spring.

With effective childhood immunization programs, measles cases in the United States, Canada and other countries have dropped by 99 percent. However, there was a marked increase in measles cases in the United States during 1989-1991. The majority of these cases occurred in non-immunized children, including almost 25 percent of cases in babies younger than 15 months of age. Low immunization rates among inner-city preschool children were a major contributing factor in this epidemic.

## What are the signs and symptoms of measles?

Symptoms of measles include a rash that starts on the face and neck and then spreads, a high fever, runny nose, cough and red, watery eyes. The fever starts about 10 days (range seven to 18 days) after exposure. The rash appears about 14 days after exposure. Infants and adults usually are sicker than children and teenagers.

In the United States, death from measles has occurred at a rate of about two to three per 1,000 cases in recent years. These deaths occur mainly in children younger than 5 years of age, primarily from pneumonia and occasionally from encephalitis. Other complications include ear problems, diarrhea and brain damage.

#### Should a person with measles stay home?

Measles is very contagious, so stay away from work, school and social activities from the time when symptoms are first noticed until five days after the rash appears.

#### What is the treatment for measles?

Treatment includes bed rest, lots of fluids and medicine for fever and headache. Antibiotics do not help – either to cure measles or to prevent it. There are no anti-viral drugs for treating measles.

#### Can measles be prevented?

Measles can be prevented with measles vaccine. The vaccine is recommended for children at 12 months of age. This shot is given as measles, mumps, rubella (MMR) vaccine. A second shot of measles vaccine, usually MMR, is now required in Illinois for all children kindergarten through 12th grade. Anyone born after January 15, 1957, who has not had at least one dose of measles vaccine after 12 months of age or who has not had the measles should be immunized. All persons working in health care settings should receive two doses of measles vaccine (MMR) unless they have had the disease and, therefore, are immune. Anyone planning to travel internationally, should make sure they are protected against measles and other dangerous diseases before they go abroad. Women should not get the vaccine if they are already pregnant or if they plan to get pregnant within three months after getting the vaccine. Acquired immunity after illness is permanent.

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# **Meningitis**

#### What is meningitis?

Meningitis is an inflammation of the membranes that cover the brain and spinal cord. It can be caused by a number of infectious agents including viruses and bacteria. The type of meningitis and its cause can only be determined by conducting laboratory tests.

Viral meningitis (also called aseptic meningitis) is the most common type of meningitis and is less severe than bacterial meningitis. In Illinois, an average of 600 cases of aseptic meningitis is reported annually, with most occurring in late summer and early autumn. The majority of cases of aseptic meningitis are due to viruses called enteroviruses that can infect the stomach and small intestine. A small number of cases are caused by different viruses, which can be transmitted by infected mosquitoes; these are called arboviruses. Fatal cases of viral meningitis are rare and complete recovery is the rule.

Bacterial meningitis is often more severe than aseptic meningitis, particularly in infants and the elderly. Before antibiotics were widely used, 70 percent or more of bacterial meningitis cases were fatal; with antibiotic treatment, the fatality rate has dropped to 15 percent or less. Bacterial meningitis is most common in the winter and spring. Three bacteria cause the majority of cases: Haemophilus influenzae, Neisseria meningitidis or Streptococcus pneumoniae.

## How is it spread?

Meningitis is not highly contagious. Both viral meningitis and bacterial meningitis can be spread through direct contact with nose and throat secretions. Healthy persons, who have no signs of illness, can have these bacteria in their nose or throat and spread them to others. Sharing a glass, cup or eating utensil, coughing or sneezing into the face of another person, or sharing a cigarette are examples of how contact with another person's respiratory secretions might occur.

Viral meningitis can be transmitted by fecal contamination (in addition to respiratory secretions) when an infected person sheds or excretes virus in his/her stool.

## What are the symptoms of meningitis?

Meningitis can produce mild symptoms — such as headache, low-grade fever and tiredness lasting two to three days — in some patients. In other patients, the symptoms can be severe and begin suddenly with fever, headache and stiff neck accompanied by some combination of other symptoms: decreased appetite, nausea, vomiting, and sensitivity to bright light, confusion and sleepiness.

In newborns and infants, the classic findings of fever, headache and stiff neck may or may not be present. An infant may have no other symptoms than being listless, irritable and sleepy, having little interest in feeding and possibly vomiting. Also, a purplish red rash may appear with meningococcal meningitis.

# How is meningitis diagnosed?

Cerebrospinal fluid can be tested to determine the type of meningitis causing the symptoms. Such identification is important in selecting effective antibiotics for treating bacterial meningitis cases.

#### How is meningitis treated?

Treatment for persons who have viral (or aseptic) meningitis usually consists of reducing fever and making sure they take plenty of liquids. All three forms of bacterial meningitis, however, require the immediate medical attention of a physician and can be treated with a number of antibiotics. Appropriate antibiotic treatment of the most common types of bacterial meningitis should reduce the fatality rate to approximately 10 percent though the fatality rate is higher in infants, the elderly and persons with certain underlying medical conditions.

#### How is meningitis prevented?

Transmission of viral and bacterial meningitis can be prevented by raising the level of hygiene among persons at risk of infection and among those who might be spreading the disease. Of primary importance is proper hand washing technique: Wet hands with soap and warm water. Rub hands for 10 to 20 seconds, making sure you clean under fingernails. Rinse under warm running water. Dry hands on a clean towel or paper towel. When paper towels are available, use a paper towel to turn off the water faucet and throw the towel away.

Persons should cover their noses and mouths when sneezing or coughing and discard used tissues promptly. Wash hands thoroughly following exposure to respiratory secretions, including handling of soiled tissues and handkerchiefs. Persons should not share straws, cups, glasses, water bottles used during sports or recreation, eating utensils, cigarettes, etc. Eating and drinking utensils should not be shared and should be used by others only after they have been washed. Discouraging persons from kissing an infant, toddler or child on the mouth also can help prevent the spread of illness.

Preventing viral meningitis also requires proper hand washing to remove fecal contamination after toileting, changing diapers, assisting toddlers with toileting and so forth.

For meningococcal meningitis, household contacts and others who have had close personal contact with infected persons are recommended to receive a preventive antibiotic, often rifampin, which kills bacteria living in nose and throat secretions. For contacts to certain cases of Haemophilus influenzae meningitis, rifampin also may be recommended. Illness seldom occurs in close contacts to Streptococcus pneumoniae meningitis. Since the recommendations for use of rifampin and other preventive antibiotics vary according to the specific situation, it is best to consult with a physician or local health department for recommendations. Even if rifampin or another preventive antibiotic is taken, close contacts should be observed for any signs of disease and should be promptly evaluated by a physician if symptoms occur.

The American Academy of Pediatrics and the Advisory Committee on Immunizations Practices both recommend vaccination against Hib for all infants beginning at 2 months of age. Neisseria meningitidis can attack persons of any age but it is relatively uncommon in the United States. Meningococcal vaccine is generally recommended only for persons traveling to other countries where epidemics are in progress, for military recruits and, rarely, in other circumstances. A vaccine against the pneumococcus is recommended for certain children and adults with chronic or specified medical conditions and for persons 65 years of age or older.

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# **Meningococcal Disease**

#### What is meningococcal disease?

Meningococcal disease is a bacterial infection. It occurs commonly in two forms: inflammation of the membranes covering the brain and spinal cord (meningococcal meningitis) or a severe blood infection (meningococcemia).

The bacterium that causes meningococcal disease, Neisseria meningitidis, first infects the mucous membranes of the nose and throat, usually without any symptoms. In fact, 5 percent to 10 percent of the population may carry the bacteria at any given time without becoming ill. In a small proportion of infected persons, the bacterium passes through the mucous membrane and reaches the blood stream, causing meningococcal meningitis or meningococcemia. When illness occurs, it does so within four days of exposure, but can develop as long as 10 days later. The disease is most common during winter and spring.

## How is meningococcal disease spread?

Meningococcal infection is not highly contagious. Transmission from person to person occurs through direct contact with nose and throat secretions. An infected person can transmit the disease by coughing or sneezing directly into the face of others, kissing a person on the mouth, or sharing a glass or cup. Because it is possible to harbor the bacteria in the nose and throats yet not develop symptoms, healthy persons as well as persons who are ill may spread the bacteria to others. The bacteria is not transmitted by casual contact, such as sitting in the same room as an infected person or passing an infected person in a hallway or on a sidewalk.

## What are the symptoms of meningococcal disease?

Meningococcal disease usually starts with a sudden onset of fever and headache. A stiff neck may be present and later a red rash often develops. Nausea and vomiting also can occur but alone are not sufficient to suggest meningococcal disease. In newborns and small infants, the classic findings of fever, headache and neck stiffness may be absent or difficult to detect, and the infant may show only extreme listlessness, irritability, poor feeding and sometimes vomiting. In severe cases, as the disease progresses, both infants and older patients may have seizures and decreased alertness advancing to coma.

## Who is most susceptible to meningococcal disease?

Meningococcal disease is primarily a disease of young children. About 50 percent of cases occur in infants and children younger than 4 years of age. Adults at increased risk of meningococcal disease include those who have recently been brought together as a group and housed under crowded living conditions, such as in barracks or institutions. College freshmen, particularly those living in dormitories, are at modestly increased risk. Household contacts of cases, which are at greatest risk of meningococcal disease, have only about 3 to 10 chances in 1,000 of developing the disease. Most persons are not susceptible to meningococcal disease because they have had prior exposure and have become immune.

In Illinois, the five-year median (2002-2006) for meningococcal disease is approximately 46 cases a year. Fewer than 10 percent of all meningococcal disease cases are fatal. Death occurs more often in meningococcemia (as high as 17 percent) than in meningococcal meningitis (approximately 7 percent).

#### How is meningococcal disease treated?

Cases of meningococcal disease require immediate medical treatment by a physician. The diagnosis is usually made by growing bacteria from a sample of blood or spinal fluid. The spinal fluid is obtained by performing a spinal tap, in which a needle is inserted into an area in the lower back where fluid in the spinal canal is readily accessible. Intravenous penicillin or other antibiotics are used to treat infected persons.

#### How can meningococcal disease be prevented?

Risk of transmission of meningococcal infection can be reduced by practicing good hygiene. Persons should cover their noses and mouths when sneezing or coughing and discard used tissues promptly. Wash hands thoroughly following exposure to respiratory secretions. To avoid exposure, persons should not share cigarettes, straws, cups, glasses, toothbrushes or eating utensils. Eating and drinking utensils can be used by others only after they have been washed.

It is recommended that household contacts and others who have had close personal contact with infected persons receive a short course of certain antibiotics, which kill bacteria living in throat secretions. Since the recommendations for use of preventive antibiotics vary according to the specific situation, it is best to consult a physician or local health department for advice. Even if an antibiotic is taken, close contacts should be observed and any sign of disease promptly evaluated by a physician. Meningococcal vaccine is effective on certain types of Neisseria meningitidis but is only recommended when there is a high incidence of cases in a limited geographic area and for persons traveling to countries where epidemics are in progress.

It is recommended that health care providers routinely vaccinate person's age 11 to 18 years with meningococcal vaccine to improve vaccination coverage in this age group. College freshmen living in dormitories are at increased risk for meningococcal disease and, if not previously vaccinated, they should be vaccinated before entering college.

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# **Methyl Parathion**

#### What is methyl parathion?

Methyl parathion, sometimes called "cotton poison," is a chemical pesticide that should be used only in open fields to control insects. Most commonly, it is used on cotton, soybean and vegetable fields. Methyl parathion is not meant to be used inside buildings or homes. Such use is illegal. Methyl parathion is a brownish liquid that turns milky white when mixed with water. It can leave a yellow stain on areas where it has been sprayed and smells like rotten eggs.

## Why can methyl parathion only be used outside?

In the open air, sunlight and rain change methyl parathion into harmless byproducts. However, even outside, workers are told to stay out of fields that have been sprayed for 48 hours. Inside buildings or homes, methyl parathion does not break down quickly, particularly when it is sprayed in high concentrations. Also, people are more likely to come in contact with the chemical in their homes than when it is sprayed on a field.

## How can a person be exposed to methyl parathion?

Before any chemical can affect your health, it has to get into your body. Although you might have methyl parathion in your home, you might not have been exposed. Contact with methyl parathion usually occurs by touching surfaces that were sprayed with the chemical. This would include areas such as baseboards, kitchen counters, under the sink and any area with yellow stains. A person also can be exposed to methyl parathion by breathing contaminated air—especially right after the chemical is sprayed—or by eating or drinking contaminated food or water.

## What kinds of health problems does methyl parathion cause?

In small amounts, methyl parathion can cause headaches, nausea, vomiting, diarrhea and dizziness. Higher levels of exposure can cause tremors, blurred vision or difficult breathing. If you or anyone else in your home has these symptoms, contact your family physician. You also can call the Illinois Poison Center at 800-942-5969.

Not everyone with methyl parathion in their homes will have symptoms. When small amounts of the chemical are in the home or if a person has very limited contact with the pesticide, the person may have no symptoms.

A single small exposure from which a person recovers quickly is not likely to cause delayed or long-term health effects. After a serious exposure, a person might feel ill for several weeks. Long-term human health effects related to methyl parathion exposure have not been demonstrated or reported.

# If people think their homes have been sprayed with methyl parathion, what should they do?

Call the U.S. Environmental Protection Agency at 312-353-2192 or the Illinois Department of Public Health at 217-782-5830. If you are having symptoms, contact your physician. Keep children and pets away from areas likely to have been sprayed or where there are visible yellow stains. Do not try to clean any areas you suspect to have been sprayed since that could increase exposure to you and others in the home.

# What should I do if the exterminator left any pesticide behind or if I purchased any of it?

Do not use any methyl parathion you have in your home. Do not dispose of it yourself. Keep the container away from children, pets, food and water until it can be picked up. Be sure to wash your hands thoroughly with hot water and soap if you have to move the container to a safe place.

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# **Molluscum Contagiosum**

#### What is molluscum contagiosum?

Molluscum contagiosum is a common skin disease that is caused by a virus. The disease is generally mild and should not be a reason for concern or worry. Molluscum infection causes small white, pink, or flesh-colored bumps or growths with a dimple or pit in the center. The bumps are usually smooth and firm and can appear anywhere on the body.

They may become sore, red, and swollen but are usually painless. The bumps normally disappear within six months to twelve months without treatment and without leaving scars. In people with weakened immune systems, molluscum growths may grow very large, spread more easily to other parts of the body and may be harder to cure.

#### How do people get molluscum contagiosum?

People with this skin disease can cause the bumps to spread to different parts of their body. This is called autoinoculation. Such spread can occur by touching or scratching a bump and then touching another part of the body.

The virus can be spread from person to person. This can happen if the growths on one person are touched by another person. It can happen if the virus gets on an object that is touched by other people. Examples of such objects are towels, clothing and toys. Molluscum can also be spread from one person to another by sexual contact. Anyone who develops bumps in the genital area (on or near the penis, vulva, vagina or anus) should see a health care provider. Bumps in these areas sometimes mean that molluscum or some other disease was spread through sexual contact.

## How to Prevent the Spread of Molluscum

#### Wash Your Hands

There are ways to prevent the spread of molluscum contagiosum. The best way is to follow good hygiene (cleanliness) habits. Keeping your hands clean is the best way to avoid molluscum infection, as well as many other infections. Hand washing removes germs that may have been picked up from other people or from surfaces that have germs on them. See the Clean Hands Saves Lives site under RESOURCES in the right-hand column.

## Do not Scratch or Pick at Molluscum Bumps

It is important not to touch, pick or scratch skin that has bumps or blisters. Picking and scratching can spread the virus to other parts of the body and makes it easier to spread the disease to other people, too.

#### Keep Molluscum Bumps Covered

It is important to keep the area with molluscum growths clean and covered with clothing or a bandage so that others do not touch the bumps and become infected with molluscum. Do remember to keep the

affected skin clean and dry.

However, when there is no risk of others coming into contact with your skin, such as at night when you sleep, uncover the bumps to help keep your skin healthy.

#### Sports and Activities to Avoid or Be Careful With When You Have Molluscum

To prevent spread of the infection to other people, people with molluscum should not take part in contact sports unless all growths can be covered by clothing or bandages. Wrestling, basketball and football are examples of contact sports.

Activities that use shared gear should be avoided unless all bumps can be covered. Helmets, baseball gloves and balls are examples of shared gear.

Swimming should be avoided unless all growths can be covered by watertight bandages. Personal items (such as towels, goggles and swimsuits) should not be shared. Other items and equipment (such as kick boards and water toys) should be used only when all bumps are covered by clothing or watertight bandages.

#### Other Ways to Avoid Sharing Your Infection

#### How long does it take before the lesions or bumps appear?

The period of time averages two months to three months and may range from one week to six months.

## **How Long are You Infectious?**

This is not known for certain, but researchers assume that if the virus is present, it may be transmitted.

## What are the symptoms of molluscum contagiosum?

## How is molluscum contagiosum diagnosed?

Diagnosis is usually made by the characteristic appearance of the lesion. MCV may be diagnosed by collecting a specimen from the lesion, placing it onto a slide and staining with a Gram stain which shows changes in infected cells. Diagnosis may be made by collecting a specimen from the lesion and viewing it under an electron microscope.

## How is molluscum contagiosum treated?

Some treatments exist for molluscum that may prevent spread of the infection to other parts of the body and to other people. A health care provider can remove the growths with surgery or laser therapy. A health care provider may prescribe a cream to apply on the bumps or a medicine to take by mouth.

However, treatment is not usually required because the bumps disappear on their own within six months. However, they may not go away completely for up to four years. In addition, not all treatments are successful for all people. For example, it is more difficult to treat persons who have a weak immune system. This includes people who are infected with HIV or who are receiving drugs to treat cancer.

Some molluscum treatments that are advertised on the Internet are not effective and may even be harmful! Therefore, always discuss any therapy with a health care provider before using it.

## What about complications from molluscum contagiosum?

In people with HIV infection, molluscum contagiosum is often a progressive disease.

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Mpox

# **Mpox**

Data Last Updated # #, ####

Data is updated once a week. Data is not updated on weekends or holidays.

#### **Illinois Mpox Cases**

#### #

Illinois mpox (formerly known as monkeypox) cases include all probable and confirmed cases. The Centers for Disease Control and Prevention (CDC) numbers may not match due to differences in reporting timeframes.

All numbers displayed are provisional and subject to change.

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## **Mpox Cases in Illinois**

For more information regarding mpox, visit the CDC website or the World Health Organization.

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# **MRSA (Pet Owners)**

#### What is MRSA?

MRSA is a type of bacteria that is resistant to some antibiotics. Although MRSA is primarily found in people, animals also can carry or be infected with the organism.

#### How is MRSA transmitted to people and animals?

Direct skin-to-skin contact is the most common way MRSA is transmitted, but it also can be transmitted by contaminated objects such as bandages from a MRSA-infected wound.

## What are the symptoms of MRSA in animals?

MRSA can cause skin or wound infections.

#### What are the symptoms of MRSA in people?

Most infections caused by staph are skin infections, such as pimples or boils. Staph skin infections can be red, painful, swollen, or have pus or other drainage. More serious staph infections can also cause pneumonia and infections of the blood and joints.

## Can a pet or person have MRSA and not be sick?

Yes, people and pets can be carriers. They may carry MRSA on their skin or in their nose and have no outward signs of illness. This is called colonization with MRSA.

## How is MRSA diagnosed?

A swab is taken from the affected area and is submitted to a laboratory for culture.

## Do I need to get rid of my pet if it tests positive for MRSA?

It is usually not necessary to get rid of a pet if it tests positive for MRSA. It is important, however, to be aware that dogs and other pets living in close contact with persons who are MRSA-infected or colonized also can become colonized with MRSA and this could result in recurrent MRSA colonization or infection in humans. Most MRSA skin infections can be prevented with proper hygiene. Healthy people rarely develop serious infections such as pneumonia, bloodstream infections, or bone infections.

#### **How is MRSA treated?**

Treatment varies from case to case. If the person or pet is colonized, no treatment may be needed. Persons with signs and symptoms of skin infections (e.g., redness, swelling, warmth, pain, tenderness) should consult with a health care provider. Pets with these symptoms should be taken to their

veterinarian. Purulent skin infections may undergo incision and drainage. More serious infections may require antibiotic treatment. The choice of antibiotics should depend on culture-based antimicrobial susceptibility tests.

# If my pet has a MRSA infection, what can I do to avoid getting infected?

# Is MRSA in animals reportable?

No, MRSA in animals is not reportable. If a cluster of animal cases occurs which may have public health implications please report these to your local health department.

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### **MRSA**

# What is Staphylococcus aureus (staph)?

Staphylococcus aureus (Staf-lo-coc-cus aw-ree-us) is a bacterium that is commonly carried in the nose and on the skin of healthy people. The bacterium is often referred to as "staph." It is estimated that 30 percent of the population carries staph on the skin or in the nose. Methicillin or penicillin and cephalosporins are generally used to treat staph infections. About 1 percent of persons have a type of staph resistant to these antibiotics called methicillin- resistant staph aureus, which is often referred to as MRSA. Other antibiotics must be used to treat MRSA infections. The drug Vancomycin has proven to be the most effective and reliable in these cases, but it is used intravenously and is not effective against MRSA when taken by mouth. Over the past 20 years, MRSA infections have occurred among patients in hospitals or long-term care facilities. However, MRSA infections are becoming more common in otherwise healthy persons who have not had contact with health care personnel or patients. These infections are known as "community- associated MRSA" or CA-MRSA infections.

# What does a staph infection look like?

Most infections caused by staph are skin infections, such as pimples or boils. Staph skin infections can be red, painful, swollen, or have pus or other drainage. More serious staph infections can also cause pneumonia and infections of the blood and joints.

# How is staph spread?

Staph can be easily spread by contaminated hands that have not been properly washed. It also can be transmitted by contact with secretions from infected skin lesions, wounds and nasal discharge, and objects and surfaces contaminated with staph. MRSA is not spread easier, but it is more difficult to treat.

Close skin-to-skin contact; openings in the skin, such as abrasions or cuts; contaminated items or surfaces; and crowded living conditions are some factors linked to the spread of staph or MRSA skin infections among athletes, children, military recruits and correctional facility inmates.

# If I have staph, or MRSA skin infection, what can I do to prevent others from getting infected?

# What to do to prevent staph skin infections

Additional recommendations are available for the control of staph or MRSA skin infections when multiple cases occur in a group or school setting. Contact your local public health department or the Illinois Department of Public Health at 217-782-2016 for more information.

Adapted from MRSA information published by the U.S. Centers for Disease Control and Prevention.

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# **Multiple Myeloma**

### What is Multiple Myeloma?

Multiple myeloma is a type of cancer formed by cancerous plasma cells in the blood. Normal plasma cells are an important part of the body's immune system. The immune system is made up of several types of cells that work together to fight infections. Lymph cells (called "lymphocytes") are the main type of cell in the immune system. There are two types of lymph cells: T cells and B cells.

When B cells respond to an infection, they change into plasma cells. The plasma cells are mainly in the bone marrow—the soft, inner part of some bones. The plasma cells make proteins called antibodies that attack and help kill germs.

When plasma cells grow out of control, they can form a tumor, usually in the bone marrow. This type of tumor is called a myeloma, and if there are many of them they are called multiple myeloma. Having too many plasma cells can cause problems in the bone marrow where blood cells are made. The bone marrow may not be able to make enough red blood cells, platelets or normal white blood cells.

The myeloma cells do not protect the body from infections. They make antibodies just as normal plasma cells, but these antibodies do not attack germs.

Facts: According to the Illinois State Cancer Registry, in 2008, about 740 new cases of multiple myeloma will be diagnosed in Illinois. Of these, about 390 will be in men and about 350 will be in women. About 470 Illinoisans are expected to die of multiple myeloma in 2008.

# What are the Causes and Risk Factors of Multiple Myeloma?

While the exact cause of multiple myeloma is not known, scientists are learning how changes in DNA can cause plasma cells to become cancerous. DNA is the substance that tells our cells how to behave. Cancer can be caused by changes (mutations) in the DNA that controls cell growth.

Scientists have identified a few risk factors that make a person more likely to develop multiple myeloma. But most people with these risk factors never get the disease. Most people with multiple myeloma have no known risk factors besides age.

Age: Age is the largest risk factor for multiple myeloma. Half of the people found to have this cancer are older than 71 years of age. Only 1 percent of cases are in people younger than 40. Gender: Men are more likely to get this cancer than women. Race: Multiple myeloma is about twice as common in African Americans and the reason is not known. Radiation exposure: Being exposed to radioactivity has been suggested as a risk factor, but this would account for only a very small number of cases. Exposure on the job: Some studies suggest that workers in some oil-related industries may be at a higher risk. Weight: A recent study by the American Cancer Society found that being overweight increases a person's risk of developing myeloma. Other plasma cell diseases: Many people with other plasma cell diseases will later develop multiple myeloma.

# What are the Symptoms of Multiple Myeloma?

Common symptoms of multiple myeloma include:

Most often, these symptoms are not due to cancer. Other health problems can cause the same symptoms. It is important to report any of these symptoms to a doctor.

# **How to Prevent Multiple Myeloma**

With multiple myeloma, there are no risk factors you can avoid to prevent the disease. There is no known way to prevent the disease in those who have other plasma cell diseases.

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# **Mumps**

Mumps is an acute infectious viral disease that can cause swelling and tenderness of the salivary glands in the cheeks and jaw.

One dose of mumps vaccine, given in combination with measles and rubella (called MMR), is recommended for all children at 12 to 15 months and a second dose at 4 to 6 years of age. The vaccine usually produces life-long immunity.

In addition, persons who are ill with mumps should limit their contact with others in the community for up to five days after their onset of symptoms when they are most likely to easily transmit the virus to others through their saliva.

# What is mumps?

Mumps is an acute infectious viral disease that can cause swelling and tenderness of the salivary glands in the cheeks and jaw.

# Who gets mumps?

Mumps can affect any person of any age who has not had the disease or been vaccinated against it. Mumps usually occurs in children, although older people may contract the disease. The greatest risk of infection occurs among older children. Mumps is more common during winter and spring. Mumps can occasionally occur in persons who have been appropriately vaccinated.

# How is mumps spread?

The virus is spread from person to person by coughing and sneezing and by direct contact with saliva and discharges from the nose and throat of infected individuals. Individuals can also be infected through contact with surfaces that have been contaminated with the virus. Mumps is contagious two days prior to and five days after the onset of symptoms.

# What are the symptoms of mumps?

Symptoms of mumps usually appear 14 days to 18 days, but sometimes up to 25 days after exposure. Symptoms include fever, headache, and swelling and tenderness of one or more of the salivary glands, usually the parotid gland (located just below the front of the ear at the angle of the jaw). In mild cases the swelling may only last for three days to four days, but it may go on up to a week or more. Approximately one-third of infected people do not exhibit symptoms.

# What is the treatment for mumps?

There is no specific treatment for mumps. Analgesics and regular rinsing of the mouth are recommended to relieve symptoms.

# What complications have been associated with mumps?

Most complications are rare but may arise and involve other organs. Mumps can cause pain and swelling of the testicles, deafness and arthritis. It 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 inflammation of the pancreas and breasts.

### How can mumps be prevented?

One dose of mumps vaccine, given in combination with measles and rubella (called MMR), is recommended for all children at 12 to 15 months and a second dose at 4 to 6 years of age. The vaccine usually produces life-long immunity.

In addition, persons who are ill with mumps should limit their contact with others in the community for up to five days after their onset of symptoms when they are most likely to easily transmit the virus to others through their saliva. Practicing good personal hygiene, e.g., proper hand washing, disposal of used tissues, and not sharing eating or drinking utensils can also help.

### Does past infection with mumps make a person immune?

Yes. Immunity acquired after contracting the disease is usually life-long.

# Is vaccination for mumps required for attendance in day care and schools?

Yes, children 2 years of age and older entering a kindergarten through 12th grade or a child care facility, a school operated program below the kindergarten level or a Head Start center in Illinois are required to show proof of immunity to mumps. Immunity can be documented by date of vaccinations, date of disease as verified by a health care provider, or laboratory evidence of mumps immunity (detectable IgG antibody).

# Do outbreaks of mumps occur?

Recently, in the U.S. outbreaks of mumps have occurred most commonly on college or university campuses.

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# Naegleria Fowleri

### What is primary amebic meningoencephalitis?

Primary amebic meningoencephalitis (PAM) is a rare but nearly always fatal disease caused by infection with an ameba (single-celled living organism) called Naegleria fowleri.

# How does infection with Naegleria fowleri occur?

Naegleria fowleri enters the body through the nose and travels to the brain, where it destroys brain tissue and causes swelling and death. Naegleria fowleri typically enters the nose when people go swimming or diving in bodies of warm freshwater, such as ponds, lakes and rivers. Very rarely, people can become infected by submerging their heads during religious practices or irrigating their sinuses (nose) using contaminated tap water.

No one has reported a Naegleria fowleri infection due to drinking contaminated water, or swimming in a properly cleaned, disinfected and maintained pool.

### Where is Naegleria fowleri found?

Naegleria fowleri has been identified in freshwater specimens worldwide. Naegleria fowleri is not found in salt water. In the United States, the majority of Naegleria fowleri infections have occurred after swimming in freshwater located in southern states. In 2012, infection with Naegleria fowleri occurred in a child after swimming in a Minnesota lake. The Illinois Department of Public Health has not received any reports of Naegleria fowleri infection.

### Naegleria fowleri can be found in:

# How common is Naegleria fowleri in the environment?

Previous water testing has shown that Naegleria fowleri is commonly found in warm freshwater venues. Therefore, recreational water users should assume a low level of risk when entering all warm freshwater.

# Who gets primary amebic meningoencephalitis?

People with PAM usually have a recent history of recreational activity in lakes, ponds or inadequately chlorinated swimming pools. In most situations, the affected individuals have been previously healthy children or young adults.

# How common is primary amebic meningoencephalitis?

PAM is an extremely rare disease. From 2002 to 2011, 32 infections were reported in the United States. Infections are more likely to occur during the summer months (July, August, and September) when water temperatures are high and water levels may be low.

### What are the symptoms of primary amebic meningoencephalitis?

The initial symptoms of PAM may include headache, fever, nausea, vomiting and stiff neck. Later, infection may result in confusion, loss of balance, seizures, hallucinations and coma.

# How soon do symptoms appear?

Initial symptoms of PAM typically begin one to seven days after infection. After the start of symptoms, the disease progresses rapidly and death usually occurs within 5 days (range 1 to 12 days).

# Can PAM be spread from person to person?

No, PAM cannot be spread from person to person.

### What is the treatment for primary amebic meningoencephalitis?

It is unclear whether PAM can be successfully treated. Several drugs have been effective against Naegleria fowleri in the laboratory. However, almost all reported cases of PAM have been fatal in humans, even when treated with similar drug combinations.

### How can primary amebic meningoencephalitis be prevented?

The only certain way of preventing PAM is to avoid water-related activities in warm, untreated or poorly treated water. It is likely that a low risk of contracting PAM will exist with recreational use of warm freshwater ponds, lakes, rivers, and hot springs.

# How is primary amebic meningoencephalitis diagnosed?

PAM can be difficult to diagnose. The disease progresses quickly, but it can take weeks to identify the ameba in the laboratory. Current diagnostic tools include evaluating cerebrospinal fluid, brain imaging, and culture in the laboratory. New detection tests are under development.

When taking part in water-related activities, you can take actions to reduce the risk of water going up the nose and lowering the chances that Naegleria fowleri may be in the water. These actions could include:

Adapted from the U.S. Centers for Disease Control and Prevention website.

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# **Neonatal Abstinence Syndrome**

Neonatal Abstinence Syndrome (NAS) is a drug withdrawal syndrome that occurs among opioid-exposed infants shortly after birth. NAS is associated with poor fetal growth and preterm birth, and can cause symptoms such as seizures, excessive irritability, poor feeding, and dehydration.

# **Definition and Impact of NAS**

Neonatal abstinence syndrome refers to the collection of signs and symptoms that occur when a newborn prenatally exposed to prescribed, diverted, or illicit opiates experiences opioid withdrawal. Symptoms of NAS include: irritability, tremors, feeding problems, vomiting, diarrhea, sweating, and, in some cases, seizures.

In addition to the direct symptoms of NAS, infants with NAS are more likely to experience other adverse outcomes and complications at birth, including: low birth weight, respiratory problems, jaundice, feeding difficulties, seizures, and sepsis.

Infants born in Illinois with NAS have longer hospital stays and higher hospital charges than infants without NAS.

# **Relationship to Maternal Opioid Use**

Several studies from Tennessee provide information demonstrating the link between maternal opioid use and NAS.

#### **Data**

There was a 52% increase in the Illinois NAS rate between 2011 and 2016.

The rise in NAS rates is different across geography of the state. Between 2011-2016, NAS rates increased by: 27% in the Collar counties, 137% in urban counties outside the Chicago area, and 223% in rural counties. In comparison, the NAS rates decreased by 9% in Chicago and increased by only 2% in suburban Cook County during this time period.

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# **Non-Gonococcal Urethritis (NGU)**

#### What is NGU?

NGU (Non-Gonococcal Urethritis) is an infection of the urethra caused by pathogens (germs) other than gonorrhea.

### How common is NGU?

Several types of germs cause NGU, the most common and serious is chlamydia. Chlamydia is very common in both males and females. The diagnosis of NGU is more commonly made in males than in females, mainly due to the anatomical differences. Germs that can cause NGU include but are not limited to:

### How can I get NGU?

Sexually: Most germs that cause NGU can be passed during sex (vaginal, anal or oral) that involves direct mucous membrane contact with an infected person.

Nonsexual: These causes of NGU may include: urinary tract infections, an inflamed prostate gland due to bacteria (bacterial prostatitis), a narrowing or closing of the tube in the penis (urethral stricture), a tightening of the foreskin so that it cannot be pulled back from the head of the penis (phimosa), the result of a process such as inserting a tube into the penis (catheterization).

Perinatal: During birth, infants may be exposed to the germs causing NGU in passage through the birth canal. This may cause the baby to have infections in the eyes (conjunctivitis), ears and lungs (pneumonia).

# What are the signs or symptoms of NGU?

In men, urethral infection, symptoms may include the following:

Symptoms of NGU in women can include:

Anal or oral infections may occur in both men and women. Anal infections may result in rectal itching, discharge or pain during a bowel movement. Oral infections may occur but most (90 percent) of these infections are asymptomatic. Some people might have a sore throat.

#### How can I find out if I have NGU?

An NGU diagnosis is made when a person has urethritis (inflammation of the urethra), but gonorrhea is ruled out because they have a negative test result.

# What can I do to reduce my risk of getting NGU?

# What is the treatment and follow up for NGU?

The main treatments for NGU are the antibiotics azithromycin and doxycycline. Alternative antibiotics are erythromycin and ofloxacin. A woman who is pregnant, or thinks she might be, should tell her doctor. This will ensure that a medicine will be used that will not harm the baby. Take all medications, even if you start to feel better before you finish the bottle. Inform all partners. Abstain from sex until all partners are treated. Return for evaluation by a health care provider if symptoms persist or if symptoms recur after taking all the prescribed medicine.

### Why should I worry about NGU?

Left untreated, the germs that cause NGU, especially chlamydia, can lead to serious complications. For men, complications may include:

In women:

For men or women, infections caused by anal sex may lead to severe proctitis (inflamed rectum). Infants exposed to the germs causing NGU during passage through the birth canal may develop conjunctivitis (eye infection) and/or pneumonia.

### Do I need to talk to my partner about NGU?

Yes. If you have been told that you have NGU, talk to your partner(s), and let them know so they can be tested and treated. The most common cause of NGU is chlamydia, and it is easy to pass from an infected partner to one who is not infected. A man who is diagnosed with NGU should tell his female sex partner(s) and ask her to get tested. He can prevent serious damage to her body by telling her right away. All sex partners of someone diagnosed with NGU should be treated because:

Remember: Do not have sex until your partner(s) have been tested and treated.

# Should I talk to my health care provider about NGU?

If you are sexually active with more than one person and do not use latex condoms, then you should talk to your health care provider about being tested for STDs and NGU. Not all STDs cause symptoms, and you may have one and not know it.

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### **Noroviruses**

#### What are noroviruses?

Noroviruses are a group of related viruses that affect the intestinal tract causing gastroenteritis illness. This group of viruses has been also referred to as caliciviruses and Norwalk-like viruses. These viruses are an important cause of gastrointestinal illness throughout the United States, including Illinois.

### What are the symptoms of noroviruses?

Many of the noroviruses cause similar symptoms that usually occur between 24 hours and 48 hours after exposure. They include nausea, vomiting, diarrhea, abdominal pain, body aches, headache, tiredness and low-grade fever. Symptoms typically last 24 hours to 60 hours and subside on their own. There are no known long-term effects after recovery from this infection.

#### How common is norovirus infection?

The U.S. Centers for Disease Control and Prevention estimates that at least half of all foodborne outbreaks of gastroenteritis can be attributed to noroviruses. Some studies indicate that more than 60 percent of the U.S. population is exposed to one or more of these viruses by the age of 50. Noroviruses are highly contagious and can spread easily from person to person.

# How do people come in contact with these viruses?

Humans are the only source for these viruses. These viruses do not multiply outside the human body. The viruses are present in the feces of infected persons and can be transmitted to others when hands are not thoroughly washed after having a bowel movement. If an infected person who did not wash their hands after toileting handles food that is not later cooked, others that consume the food can become infected. Heating foods to cooking temperatures kills these viruses. People also can be infected by drinking water contaminated by sewage containing one of these viruses or by consuming ice made from contaminated water. Unless thoroughly cooked, shellfish (such as oysters) harvested from waters containing sewage can transmit the viruses. These viruses also are transmitted readily from person to person when hands are not properly washed after toileting. There is some evidence that the viruses can be transmitted by aerosolized vomitus or contact with objects contaminated with fecal material.

# How are these infections diagnosed?

Standard hospital laboratories and commercial laboratories usually are not equipped to detect noroviruses. The specialized laboratories that can detect these viruses perform tests on stool specimens from an infected person to detect the virus. In Illinois, only Illinois Department of Public Health laboratories have the capability to confirm a diagnosis of one of these viruses. This laboratory service is reserved for testing a small number of people associated with recognized outbreaks and is not available for testing individual cases of gastrointestinal illness.

# If I have had a norovirus infection in the past, can I get it again?

Yes. It appears that immunity following norovirus infection varies from person to person. It is possible some persons achieve immunity but more studies are needed to better understand susceptibility to reinfection.

### How can these infections be prevented?

Food handlers should practice careful hand washing after toileting and before food preparation. Food handlers should not have bare hand contact with ice. Persons involved in food preparation who have symptoms of gastroenteritis should be restricted from work until they no longer have diarrhea. Water supplies should be protected from the risk of contamination by sewage. Plumbing in dwellings and business establishments should be constructed with no cross-connections to prevent sewage from entering the drinking water supply.

All persons can decrease their chance of becoming infected with noroviruses by following these preventive steps:

Outbreaks of norovirus in long-term care facilities are not uncommon and are frequently transmitted from person to person (including residents, staff, visitors and volunteers). Strict compliance with good hygiene practices is important to prevent the spread of norovirus in this population.

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# **Norwalk Virus**

#### What are Norwalk and Norwalk-like viruses?

These viruses, also known as small round structured viruses or caliciviruses, are an important cause of gastrointestinal illness throughout the United States, including Illinois. Members of this category of viruses, subsequently referred to as Norwalk-like viruses, are typically named for the location in which they were first identified, for example, Hawaii, Snow Mountain, Montgomery County and Oklahoma. The Norwalk virus is the prototype for this group of viruses – there are at least 11 other related viruses – hence the name "Norwalk-like virus."

# What are the symptoms of Norwalk-like viruses?

The signs and symptoms of Norwalk-like viruses are similar and usually occur between 24 hours and 48 hours after exposure. They include nausea, vomiting, diarrhea, abdominal pain, muscle aches, headache, tiredness and low-grade fever. Symptoms typically last 24 hours to 48 hours and subside on their own. There are no known long- term effects after recovery from this infection.

#### How common is Norwalk-like virus infection?

The U.S. Centers for Disease Control and Prevention estimates that more than 180,000 cases of Norwalk-like virus infections occur annually in the United States. Some studies indicate that more than 60 percent of the U.S. population is exposed to one or more of these viruses by the age of 50. When these viruses are recognized to cause illness, they usually are associated with an outbreak of gastrointestinal illness.

# How do people come in contact with these viruses?

Humans are the only source for these viruses. These viruses do not multiply outside the human body. The viruses are present in the feces of infected persons and can be transmitted to others when hands are not thoroughly washed after having a bowel movement. When food that is not later cooked is handled by an infected person who did not wash hands after toileting, others who eat the food can become infected. Heating foods to cooking temperatures kills these viruses. People also can be infected by drinking water contaminated by sewage containing one of these viruses or by consuming ice made from contaminated water. Unless thoroughly cooked, shellfish (such as oysters) harvested from waters containing sewage can transmit the viruses. These viruses also are transmitted readily from person to person when hands are not washed after toileting. There is some evidence that the viruses can be transmitted by aerosolized vomitus.

# How are these infections diagnosed?

Standard hospital laboratories and commercial laboratories usually are not equipped to detect Norwalk-like viruses. The specialized laboratories that can detect these viruses perform tests on stool specimens from an infected person and, in some cases, can identify evidence of infection by testing blood for antibody. In Illinois, only Illinois Department of Public Health laboratories have the capability to

confirm a diagnosis with one of these viruses. This laboratory service is reserved for testing a small number of people associated with recognized outbreaks and is not available for testing individual cases of gastrointestinal illness.

# If I have had a Norwalk-like virus infection in the past, can I get it again?

Yes. Immunity is believed to last around 14 weeks, but long-term immunity may not occur. Detecting antibody against these viruses in the blood does not assure a person is immune.

# How can these infections be prevented?

Food handlers should practice careful hand washing after toileting, especially when handling food that will not be cooked later. Water supplies should be protected from the risk of contamination by sewage. Plumbing in dwellings and business establishments should be constructed with no cross-connections to prevent sewage from entering the drinking water supply.

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### **Oral Cancer**

#### What is Oral Cancer?

Oral cancer starts in the mouth (oral cavity) and can interfere with the ability to breath, talk, eat, chew or swallow. The oral cavity is easy to examine. When found early, treatment of oral cancer is likely to be successful.

According to the Illinois State Cancer Registry, about 1,480 new cases of oral and pharyngeal cancer will be diagnosed in Illinois in 2008. Of these, about 1,040 will be in men and about 440 will be in women. About 350 Illinoisans are expected to die of oral and pharyngeal cancer in 2008. Oral cancer is the fourth leading cause of cancer in African-American men.

#### What are the Causes and Risk Factors of Oral Cancer?

Some people with oral cancer do not have any known risk factors and others with several risk factors never develop the disease. Important risk factors are listed below.

#### Tobacco

About 90 percent of people with oral cancer use tobacco. The risk of developing these cancers increases with the amount smoked or chewed and the duration of the habit. Smokers are six times more likely than nonsmokers to develop these cancers. Smokeless tobacco ("snuff" or chewing tobacco) is associated with cancers of the cheek, gums and inner surface of the lips. Smokeless tobacco increases the risk of these cancers by about 50 times.

#### **Alcohol**

Drinking alcohol greatly increases a smoker's risk of developing oral cancer. About 75 percent to 80 percent of all patients with oral cancer drink alcohol. People who drink alcohol but don't smoke have a higher risk of cancer, if they are heavy drinkers. The combination of tobacco and alcohol is deadly.

#### Ultraviolet light

More than 30 percent of patients with cancers of the lip have outdoor occupations associated with prolonged exposure to sunlight.

#### **Poor nutrition**

A diet low in fruits and vegetables is associated with an increased risk of developing oral cancer.

### Human papillomavirus (HPV) infection

The current studies indicate HPV may contribute to the development of oral cavity and oropharyngeal cancers in around 20 percent of people.

#### Age

The likelihood of developing oral and pharyngeal cancer increases with age. Half of all cases are in persons older than age 65; 90 percent are older than age 45.

# What are the Symptoms of Oral Cancer?

The common symptoms of oral cancer include:

These symptoms can be caused by many other conditions. It is important to report any of these symptoms (lasting more than two weeks) to a dentist or physician.

#### **How to Prevent Oral Cancer:**

Most oral cancers can be prevented by avoiding risk factors whenever possible.

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### **Ovarian Cancer**

#### What is ovarian cancer?

The ovaries are the part of the female reproductive system that produce eggs every month during a woman's reproductive years. They are located on either side of the lower abdomen. Ovarian cancer occurs when cells in the ovary grow and divide uncontrollably. The cells may form a tumor on the ovary, or they can also break off from the main tumor and spread to other parts of the body. Although ovarian cancer can spread throughout the entire body, in most cases it stays in the abdomen and affects organs such as the intestines, liver and stomach. There are many different types of ovarian cancer. However, most cancers of the ovary (85 percent-90 percent) come from the cells that make up the outer lining of the organ, and are called epithelial ovarian cancers.

### What are the symptoms of ovarian cancer?

There are usually no obvious symptoms of ovarian cancer. Women complain about vague symptoms including abdominal swelling or bloating, generalized abdominal discomfort, fullness after meals, lack of appetite, upset stomach, malaise, urinary frequency or weight change (either gain or loss). Women may develop unexplained fluid in the abdominal cavity that contributes to the abdominal discomfort. Because these symptoms are not unique to ovarian cancer, the disease can be difficult to identify and diagnose.

# How is ovarian cancer diagnosed?

A definitive diagnosis of ovarian cancer requires surgery. The initial surgery has two aims. First, to remove any cancer that exists (or as much as possible), including removing the ovaries and the uterus. Second, to sample tissues and surrounding nodes to determine where the tumor has spread (to determine the stage of the disease). The best results for survival occur when all the cancer can be removed.

# What are the treatment options for ovarian cancer?

After the initial diagnosis has been established at surgery, additional therapy will depend on several factors, including the cell type, the stage, the extent of spread of the cancer and the amount of tumor remaining at the end of the initial surgery. Treatment includes chemotherapy or radiation.

#### What are the risk factors for ovarian cancer?

The following may increase your chances of getting ovarian cancer: a high-fat diet, never having children or not having children until late in life, infertility, using fertility drugs but not becoming pregnant, starting your periods at a young age or going through menopause at an older than average age, use of talcum powder on the genital area, belonging to the Caucasian race or being of Jewish descent, and having a family history of ovarian or breast cancer. Of these risk factors, the most significant is a family history of breast and/or ovarian cancer. Having one close relative with ovarian cancer increases a woman's risk of developing ovarian cancer by nearly three times. There also are a number of factors

that are associated with a lower risk of ovarian cancer, including use of birth control pills, having multiple children, breast feeding, tubal ligation and having the ovaries removed. Even with significant risk factors such as family history, the overall chances of getting ovarian cancer are still small.

### Is ovarian cancer hereditary?

Most ovarian cancers are not inherited. However, about 5 percent to 10 percent of ovarian cancers do run in families. Generally, the risk of developing ovarian cancer increases as the number of family members affected by ovarian cancer increases. Having a first-degree relative affected by ovarian cancer (for example, a mother or a sister) increases a woman's lifetime risk from 1.4 percent to 3.1 percent. Sometimes ovarian, breast and other cancers seem to run in families. Talk to your doctor about genetic tests that can tell you more about your chances of getting ovarian cancer.

### What can I do to prevent ovarian cancer?

There are no known ways to guarantee prevention of ovarian cancer. Women who are diagnosed in an early stage, however, have a higher survival rate. Unfortunately, ovarian cancer is usually not diagnosed at an early stage. Currently, no effective methods for diagnosing ovarian cancer early exist.

# Can I get ovarian cancer if I have my ovaries removed?

Women at a very high risk of developing ovarian cancer can consider removal of the ovaries. This appears to lower the risk of developing ovarian cancer, but does not eliminate the risk. In general, women found to be carriers of an ovarian or breast cancer gene or who have a strong family history may be appropriate candidates for removal of the ovaries.

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# **Pancreatic Cancer**

#### What is Pancreatic Cancer?

The pancreas is a gland located deep in the abdomen between the stomach and the spine (back bone). It is about 6 inches long and less than 2 inches wide. It extends across the abdomen.

The pancreas is really two separate glands inside the same organ. The exocrine gland makes enzymes to break down fats and proteins in foods so the body can use them. Most of the cells in the pancreas are part of the exocrine system.

A smaller number of cells in the pancreas are endocrine cells. These cells are arranged in clusters called islets (or islets of Langerhans) and make hormones (such as insulin) that help balance the amount of sugar in the blood.

Both the exocrine and endocrine cells of the pancreas can form tumors. Those formed by the exocrine pancreas are much more common. Tumors in the exocrine part of the gland are likely to be cancer. Tumors of the endocrine cells are much less common.

Facts: According to the Illinois State Cancer Registry, about 1,620 new cases of pancreatic cancer will be diagnosed in Illinois and about 1,510 Illinoisans will die of the disease in 2008.

### What are the Causes and Risk Factors of Pancreatic Cancer?

The causes of most cases of pancreatic cancer are unknown. Several risk factors have been linked to the disease, including the following:

Age: The risk of this cancer increases with age with almost all cases in persons older than 50 years. Gender: Men have this cancer more often than women. Race: African Americans are more likely to have this cancer than whites. Smoking: The risk of this cancer is higher among smokers. Heavy smoking increases the risk two to three times. Diet and obesity: A diet high in meats and fat and being obese also may increase the risk. Diabetes: Pancreatic cancer is more common in people with diabetes. Chronic pancreatitis: This is a long-term inflammation of the pancreas and is linked with a slightly higher risk of pancreatic cancer. Work exposure: Some chemicals such as certain bug sprays, dyes or gasoline products may increase the risk of this cancer. Family history: Cancer of the pancreas seems to run in some families. Changes in DNA that increase the risk for certain other cancers also increase the risk of this cancer. Stomach problems: Having too much stomach acid or having bacteria called Helicobacter pylori in the stomach may increase the risk of pancreatic cancer.

# What are the Symptoms of Pancreatic Cancer?

The following can be symptoms of pancreatic cancer:

It is important to report any of these symptoms to a doctor.

#### **How to Prevent Pancreatic Cancer**

There is no sure way to prevent cancer of the pancreas at this time. Common preventive measures include:

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# **Parkinson's Disease**

#### What is Parkinson's Disease?

Parkinson's disease (PD) belongs to a group of conditions called motor system disorders, which are the result of the loss of dopamine-producing brain cells. Parkinson's disease is a brain disorder that leads to shaking, stiffness, and difficulty with walking, balance, and coordination. Symptoms generally develop slowly over years. Parkinson's symptoms usually begin gradually and get worse over time.

### What are the symptoms/warning signs of Parkinson's Disease?

Parkinson's disease (PD) belongs to a group of conditions called motor system disorders, which are the result of the loss of dopamine-producing brain cells. The four primary symptoms of PD are tremor, or trembling in hands, arms, legs, jaw, and face; rigidity, or stiffness of the limbs and trunk; bradykinesia, or slowness of movement; and postural instability, or impaired balance and coordination. As these symptoms become more pronounced, patients may have difficulty walking, talking, or completing other simple tasks. PD usually affects people over the age of 60. Early symptoms of PD are subtle and occur gradually. In some people the disease progresses more quickly than in others.

As the disease progresses, the shaking, or tremor, which affects most people with PD, may begin to interfere with daily activities including difficulty walking and talking. They may also have mental and behavioral changes, sleep problems, depression, memory difficulties, and fatigue.

One clear risk factor for Parkinson's is age. Although most people with Parkinson's first develop the disease at about age 60, about 5 to 10 percent of people with Parkinson's have "early-onset" disease, which begins before the age of 50. Early-onset forms of Parkinson's are often, but not always, inherited, and some forms have been linked to specific gene mutations.

# How is Parkinson's Disease diagnosed?

There is no "one way" to diagnose Parkinson's Disease (PD). Several disorders can cause symptoms like those of Parkinson's disease. People with Parkinson's-like symptoms that result from other causes are sometimes said to have parkinsonism. While these disorders initially may be misdiagnosed as Parkinson's, certain medical tests, as well as response to drug treatment, may help to distinguish them from Parkinson's. Since many other diseases have similar features but require different treatments, it is important to make an exact diagnosis as soon as possible.

There are currently no blood or laboratory tests to diagnose nongenetic cases of Parkinson's disease. Diagnosis is based on a person's medical history and a neurological examination. Persons experiencing symptoms resembling those of PD should consider making an appointment with a neurologist with experience and specific training in the assessment and treatment of PD – referred to as a movement disorder specialist.

# How many persons are affected by Parkinson's Disease?

Although estimates vary, about 50,000 people are diagnosed with PD in the U.S. each year and about half a million people have the disease. It is anticipated that nearly one million persons will be living with

PD in the U.S. by 2020. Both men and women can have Parkinson's disease. However, the disease affects about 50 percent more men than women. Because the rate of PD increases in older adults, the burden will increase unless prevention and treatment improve.

#### Is there treatment for Parkinson's Disease?

At present, there is no cure for PD, but a variety of medications provide dramatic relief from the symptoms. Usually, affected individuals are given levodopa combined with carbidopa. Carbidopa delays the conversion of levodopa into dopamine until it reaches the brain. Nerve cells can use levodopa to make dopamine and replenish the brain's dwindling supply. Although levodopa helps at least three-quarters of parkinsonian cases, not all symptoms respond equally to the drug. Bradykinesia and rigidity respond best, while tremor may be only marginally reduced. Problems with balance and other symptoms may not be alleviated at all. Anticholinergics may help control tremor and rigidity. Other drugs, such as bromocriptine, pramipexole, and ropinirole, mimic the role of dopamine in the brain, causing the neurons to react as they would to dopamine. An antiviral drug, amantadine, also appears to reduce symptoms. In May 2006, the FDA approved rasagiline to be used along with levodopa for patients with advanced PD or as a single-drug treatment for early PD. In March 2017, the FDA approved safinamide tablets as an add-on treatment for individuals with PD how are currently taking levodopa/carbidopa and experiencing "off" episodes (when the person's medications are not working well, causing an increase in PD symptoms).

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# **Pelvic Inflammatory Disease (PID)**

#### What is PID?

Pelvic inflammatory disease (PID) refers to infection of the uterus (womb), fallopian tubes (tubes that carry eggs from the ovaries to the uterus) and other reproductive organs that causes symptoms such as lower abdominal pain. It is a serious complication of some sexually transmitted diseases (STDs), especially chlamydia and gonorrhea. PID can damage the fallopian tubes and tissues in and near the uterus and ovaries. PID can lead to serious consequences including infertility, ectopic pregnancy (a pregnancy in the fallopian tube or elsewhere outside of the womb), abscess formation, and chronic pelvic pain.

#### How common is PID?

Each year in the United States, it is estimated that more than 750,000 women experience an episode of acute PID. As many as 15 percent of these women may become infertile as a result of PID. A large proportion of the ectopic pregnancies occurring every year are due to the consequences of PID.

# How can I get PID?

PID occurs when bacteria move upward from a woman's vagina or cervix (opening to the uterus) into her reproductive organs. Many different organisms can cause PID, but many cases are associated with gonorrhea and chlamydia, two very common bacterial STDs. A prior episode of PID increases the risk of another episode because the reproductive organs may be damaged during the initial bout of infection.

Sexually active women in their childbearing years are most at risk, and those younger than age 25 are more likely to develop PID than those older than 25. This is partly because the cervix of teenage girls and young women is not fully matured, increasing their susceptibility to the STDs that are linked to PID. The more sex partners a woman has, the greater her risk of developing PID. Also, a woman whose partner has more than one sex partner is at greater risk of developing PID, because of the potential for more exposure to infectious agents.

Women who douche may have a higher risk of developing PID compared with women who do not douche. Research has shown that douching changes the vaginal flora (organisms that live in the vagina) in harmful ways, and can force bacteria into the upper reproductive organs from the vagina.

Women who have an intrauterine device (IUD) inserted may have a slightly increased risk of PID near the time of insertion compared with women using other contraceptives or no contraceptive at all. However, this risk is greatly reduced if a woman is tested and, if necessary, treated for STDs before an IUD is inserted.

What can cause an infection to spread into the upper genital tract?

What are the symptoms of PID?

### What are the complications of PID?

Prompt and appropriate treatment can help prevent complications of PID, including permanent damage to the female reproductive organs. Infection-causing bacteria can silently invade the fallopian tubes, causing normal tissue to turn into scar tissue. This scar tissue blocks or interrupts the normal movement of eggs into the uterus. If the fallopian tubes are totally blocked by scar tissue, sperm cannot fertilize an egg, and the woman becomes infertile. Infertility also can occur if the fallopian tubes are partially blocked or even slightly damaged. As many as 15 percent of women with PID may become infertile, and if a woman has multiple episodes of PID, her chances of becoming infertile increase.

In addition, a partially blocked or slightly damaged fallopian tube may cause a fertilized egg to remain in the fallopian tube. If this fertilized egg begins to grow in the tube as if it were in the uterus, it is called an ectopic pregnancy. As it grows, an ectopic pregnancy can rupture the fallopian tube causing severe pain, internal bleeding, and even death. Scarring in the fallopian tubes and other pelvic structures can cause chronic pelvic pain (pain that lasts for months or even years). Women with repeated episodes of PID are more likely to suffer infertility, ectopic pregnancy, or chronic pelvic pain.

#### How can I find out if I have PID?

The diagnosis of PID can be made when all three of the following symptoms are found during a pelvic exam:

PID is difficult to diagnose because the symptoms are often subtle and mild. Many episodes of PID go undetected because the woman or her health care provider fails to recognize the implications of mild or nonspecific symptoms. Because there are no precise tests for PID, a diagnosis is usually based on clinical findings. If symptoms such as lower abdominal pain are present, a health care provider should perform a physical examination to determine the nature and location of the pain and to check for fever, abnormal vaginal or cervical discharge, and for evidence of gonorrheal or chlamydial infection. If the findings suggest PID, treatment is necessary.

The health care provider may order tests to identify the infection-causing organism (e.g., chlamydial or gonorrheal infection) or to distinguish between PID and other problems with similar symptoms. A pelvic ultrasound is a helpful procedure for diagnosing PID. An ultrasound can view the pelvic area to see whether the fallopian tubes are enlarged or whether an abscess is present. In some cases, a laparoscopy may be necessary to confirm the diagnosis. A laparoscopy is a surgical procedure in which a thin, rigid tube with a lighted end and camera (laparoscope) is inserted through a small incision in the abdomen. This procedure enables the doctor to view the internal pelvic organs and to take specimens for laboratory studies, if needed.

# What is the treatment and followup for PID?

Treatment may include antibiotics used to treat gonorrhea, chlamydia, streptococci and other gram-negative bacteria.

Aggressive treatment of PID is recommended for women with HIV who may be more likely to require surgical intervention.

PID can be cured with several types of antibiotics. A health care provider will determine and prescribe the best therapy. However, antibiotic treatment does not reverse any damage that has already occurred to the reproductive organs. If a woman has pelvic pain and other symptoms of PID, it is critical that she seek care immediately. Prompt antibiotic treatment can prevent severe damage to reproductive organs. The longer a woman delays treatment for PID, the more likely she is to become infertile or to have a future ectopic pregnancy because of damage to the fallopian tubes.

Because of the difficulty in identifying organisms infecting the internal reproductive organs and because more than one organism may be responsible for an episode of PID, PID is usually treated with at least

two antibiotics that are effective against a wide range of infectious agents. These antibiotics can be given by mouth or by injection. The symptoms may go away before the infection is cured. Even if symptoms go away, the woman should finish taking all of the prescribed medicine. This will help prevent the infection from returning. Women being treated for PID should be re-evaluated by their health care provider three days after starting treatment to be sure the antibiotics are working to cure the infection. In addition, a woman's sex partner(s) should be treated to decrease the risk of re-infection, even if the partner(s) has no symptoms. Although sex partners may have no symptoms, they may still be infected with the organisms that can cause PID.

Hospitalization to treat PID may be recommended if the woman (1) is severely ill (e.g., nausea, vomiting, and high fever); (2) is pregnant; (3) does not respond to or cannot take oral medication and needs intravenous antibiotics; (4) has an abscess in the fallopian tube or ovary (tubo-ovarian abscess); or (5) needs to be monitored to be sure that her symptoms are not due to another condition that would require emergency surgery (e.g., appendicitis). If symptoms continue or if an abscess does not go away, surgery may be needed. Complications of PID, such as chronic pelvic pain and scarring are difficult to treat, but sometimes they improve with surgery.

# Sex partners of patients who have PID should be examined and treated promptly.

#### Follow-up:

However, antibiotic treatment does not reverse any damage that has already occurred to the reproductive organs.

### What can I do to reduce my risk of getting PID?

Women can protect themselves from PID by taking action to prevent STDs or by getting early treatment if they do get an STD.

The surest way to avoid transmission of STDs is to abstain from sexual intercourse, or to be in a long-term mutually monogamous relationship with a partner who has been tested and is known to be uninfected.

Latex male condoms, when used consistently and correctly, can reduce the risk of transmission of chlamydia and gonorrhea.

CDC recommends yearly chlamydia testing of all sexually active women age 25 or younger, older women with risk factors for chlamydial infections (those who have a new sex partner or multiple sex partners), and all pregnant women. An appropriate sexual risk assessment by a health care provider should always be conducted and may indicate more frequent screening for some women.

Any genital symptoms such as an unusual sore, discharge with odor, burning during urination, or bleeding between menstrual cycles could mean an STD infection. If a woman has any of these symptoms, she should stop having sex and consult a health care provider immediately. Treating STDs early can prevent PID. Women who are told they have an STD and are treated for it should notify all of their recent sex partners so they can see a health care provider and be evaluated for STDs. Sexual activity should not resume until all sex partners have been examined and, if necessary, treated.

# Why worry about PID?

Untreated PID infections may lead to:

Hospitalization to treat PID may be recommended if the woman (1) is severely ill, e.g., nausea, vomiting, and high fever); (2) pregnant; (3) does not respond to or cannot take oral medications and

needs intravenous antibiotics; (4) or has an abscess in the fallopian tube or ovary. If symptoms continue or if an abscess does not go away, surgery may be needed.

### Do I need to talk to my partner about PID?

Yes. Telling a partner can be hard, but keep in mind that most people with an STD don't know they have it. It's important that you talk to your partner as soon as possible so she or he can get treatment. Men are more likely than women to have symptoms of chlamydia or gonorrhea (two STDs that cause PID). It is possible to pass STDs back and forth, so if you get treated and your partner does not, you may get infected again.

# Should I talk to my health care provider about PID?

Yes. Because STDs which can cause PID often do not have symptoms, you may need to talk to your doctor or nurse about whether or not you should be tested. If you are having unprotected sex or discover that your partner is having unprotected sex with another person, you may want to ask your doctor or nurse about being tested.

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# **Pertussis**

### What is pertussis?

Pertussis, more commonly known as whooping cough, is caused by a bacterium (germ), Bordetella pertussis, that lives in the mouth, nose and throat. The germ is highly contagious and is easily spread from person-to-person.

### How is pertussis spread?

The bacteria are shed in discharges from the nose and throat and spread to others through coughing and sneezing. An infected person is contagious from just before onset of symptoms until up to three weeks after symptoms start. Treatment with appropriate antibiotics shortens the contagious period to about five days.

### Who is susceptible to contracting pertussis?

Despite the effectiveness of vaccination, pertussis continues to occur in the United States among all age groups. Anyone who has not had pertussis previously or who has not received the pertussis vaccine can get the disease. Immunity following disease or vaccination is not lifelong. Older children, adolescents and adults can become susceptible to pertussis five-to 10-years after their last dose of pertussis-containing vaccine. Older children and adults can carry the germ and spread it even though their cold-like symptoms may be so mild they might not seek medical care.

Since 2000, about a quarter of the cases reported have occurred in children younger than 1 year of age and this group has the highest rates for complications and death. Older children and adolescents have accounted for more than half the reported cases, and adults 20 years of age and older comprise the remaining 25 percent of reported cases.

# What are the symptoms of pertussis?

Symptoms usually appear five-to 10-days after exposure, but can take as long as 21 days. The first symptoms are similar to those of a common cold - a runny nose, sneezing, low-grade fever and a mild, occasional cough. The cough gradually becomes severe and, after one to two weeks, the patient has spasmodic bursts of numerous, rapid coughs. The characteristic high-pitched "whoop," which is more common in children, comes from breathing in after a coughing episode. During such an attack, the patient may turn blue, vomit and become exhausted. Between coughing attacks, the patient usually appears normal.

Coughing attacks occur more frequently at night. The attacks increase in frequency for a couple of weeks, remain at the same level for two-to three-weeks, and then gradually decrease. Coughing may last as long as 100 days. Cough medicines usually do not help eliminate this cough. Recovery is gradual, but coughing episodes can recur for months after the onset of pertussis.

# Can there be complications?

Although most people recover, complications of pertussis can be severe. It can be a critical illness in children younger than 1 year of age, especially in premature babies or those with lung disease. Nationally, there were 27 deaths reported among infants with pertussis in 2004. Less serious complications include ear infections, loss of appetite and dehydration. Although infrequent, complications affecting the brain, such as convulsions and inflammation, may occur, especially in infants, and can have long-term effects or cause death.

### How is pertussis treated?

Pertussis is usually treated with a multi-day course of appropriate antibiotics, such as azythromycin, erythromycin or clarithromycin, or an acceptable alternative. Some children may need to be hospitalized. People in close contact with children or adults with pertussis usually need to be treated with antibiotics and efforts should be taken to minimize an infant's exposure to children and adults with cough illnesses.

# Can pertussis be prevented?

Every child should get pertussis vaccine at 2, 4, 6 and 15 months of age and another dose at 4 to 6 years of age. This vaccine is given in the same shot with diphtheria and tetanus vaccines. Immunization is required for child care and school attendance.

New booster vaccines became available in 2005 that offer continued protection against pertussis, diphtheria and tetanus for adolescents and adults. These vaccines have been added to the recommended schedule of vaccinations for adolescents. Adults with routine contact with infants less than 12 months of age should receive a booster dose.

### Are there side effects to the vaccine?

Local reactions, such as redness, pain and swelling, are common. Occasionally, a lump can be felt at the injection site for several weeks. Reactions such as fever, drowsiness, fretfulness and loss of appetite occur frequently. Most of these problems resolve by themselves. Less frequently, high fever, persistent inconsolable crying lasting more than three hours, fainting or an unresponsive collapsed-like state, and convulsions can occur. Very rarely, severe nervous system problems have been reported.

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# **Plague**

### What is plague?

Plague is a disease that affects animals and humans. It is caused by the bacterium Yersinia pestis which is found in rodents and their fleas. Plague is found in many areas of the world. It is not common in the United States.

There are three forms of plague:

# How can someone come into contact with plague?

Plague can be spread from person to person.

### Plague as a weapon

As a weapon, the plague bacteria can be aerosolized and released into the air. Scattering infected fleas into the air is another way plague can be used as a weapon.

Please note: Just because you come into contact with plague, or a person sick from plague, does not mean you will get sick from it.

# What happens if someone gets sick from plague?

Bubonic plague

Pneumonic plague

Septicemic plague

# How likely is someone to die from plague?

About 14 percent (1 in 7) of all plague cases in the United States are deadly.

# What is the treatment for plague?

Treatment is different for a person who comes into contact with plague, but is not yet displaying symptoms. Early treatment of plague is important.

#### Prevention of illness after contact

Antibiotic treatment for seven days will protect people who have had direct, close contact with infected patients. Health care providers can prescribe antibiotics that can be taken at home. Antibiotics to prevent infection usually are taken for seven days or until the patient gets better.

#### Treatment of illness

If a person is showing signs of plague infection, the person needs to go to the hospital. To reduce the chance of death, antibiotics must be given within 24 hours of first symptoms. Treatment is usually a 10-day course of antibiotics.

People who are sick from plague need to be isolated. Wearing a close-fitting surgical mask over the nose and mouth also protects against spreading the infection.

### Is there a vaccine for plague?

No, a plague vaccine is not currently available for use in the United States.

### What should be done if someone comes into contact with plague?

If you think that you or someone you know may have come into contact with plague bacteria, contact the local county health department right away.

If you or someone you know is showing symptoms of plague, call your health care provider or the Illinois Poison Center right away. The toll-free number for the poison center is 1-800-222-1222.

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# **Pneumococcal Disease**

### What is pneumococcal disease?

Pneumococcal disease is caused by Streptococcus pneumonia, bacteria that can attack different parts of the body. The bacteria can cause serious infections of the lungs (pneumonia), the bloodstream (bacteremia) and the covering of the brain (meningitis).

Pneumococcal pneumonia is a serious illness, accounting for 10 percent to 25 percent annually of all pneumonias. Nationally, about 40,000 persons die as a result of pneumococcal pneumonia each year, but the illness is particularly dangerous for the very young, the elderly and persons with certain high-risk conditions. For example, among people 65 years of age and older with pneumococcal pneumonia, about 20 percent to 30 percent develop bacteremia. At least 20 percent of those with bacteremia die from it, even though they receive antibiotics.

### Can pneumococcal pneumonia be prevented?

Yes, by getting vaccinated. The vaccine is safe, it works and one shot provide lifelong immunity for most persons. People who get the vaccine are protected against almost all of the bacteria that cause pneumococcal pneumonia and other pneumococcal diseases as well.

# Who should get the vaccine?

According to the National Institutes of Health, everyone 65 years of age and older should get the pneumococcal vaccine. Some younger people should get it, too. Ask for the vaccine if you

There are two exceptions to children receiving the vaccine. First, since the vaccine is not effective in children younger than 2 years of age, shots will not benefit this age group. Second, in children who are otherwise healthy, frequent diseases of the upper respiratory system, including ear and sinus infections, are not considered reasons to use this vaccine.

# When is the best time to get the vaccine?

For older individuals, some experts say it may be best to get the shot before reaching 65 years of age -- anytime after 50 years of age. They base this opinion on the fact that the younger you are, the better able your body is to mount a protective immune response. For those who receive an annual flu shot, the pneumococcal vaccine can safely be given at the same time.

Other adults and children who are at high risk of pneumococcal disease should consult their physicians. Generally, however, individuals who are scheduled for cancer chemotherapy or immunosuppressive therapy should wait at least two weeks after receiving pneumococcal vaccine to start therapy. The safety of pneumococcal vaccine for pregnant women has not been evaluated. Ideally, at-risk women should be vaccinated before they get pregnant.

# Should a person who already has had pneumonia get the vaccine?

Experts agree that persons who already have had pneumonia can benefit from the vaccine. There are many kinds of pneumonia and having one kind does not ensure immunity against the others. The vaccine protects against 88 percent of the pneumococcal bacteria that cause pneumonia. However, it does not guarantee that you will never get pneumonia, and it does not protect against viral pneumonia.

### How often does a person need to be vaccinated?

Most people need to get the shot only once. However, some people may need a booster; check with your physician to find out if this is necessary for you.

#### Are there side effects?

About half of those who are given pneumococcal vaccine have very mild side effects, such as redness and pain at the injection site. Less than 1 percent of those getting the vaccine may develop fever, muscle aches and severe local reactions. Serious side effects, such as dangerous allergic reactions, have rarely been reported. As with any drug or vaccine, there is a rare possibility that allergic or more serious reactions or even death could occur. The pneumonia shot cannot cause pneumonia because it is not made from the bacteria itself but from an extract that is not infectious.

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# **Polio**

### What is polio?

Polio is an infectious disease caused by a virus that lives in the throat and intestinal tract. It is most often spread through person-to-person contact with the stool of an infected person and also may be spread through oral/nasal secretions. Polio used to be very common in the United States (U.S.) and caused severe illness in thousands of people each year before polio vaccine was introduced in 1955. Most people infected with the polio virus have no symptoms, however for the less than 1 percent who develops paralysis it may result in permanent disability and even death.

# What are the symptoms of polio?

As many as 72 percent of susceptible persons infected with polio have no symptoms. However, infected persons without symptoms can still spread the virus and cause others to develop polio. About 24 percent of infected susceptible persons have minor symptoms such as fever, sore throat, upset stomach, or flu-like symptoms and have no paralysis or other serious symptoms. About one percent to five percent develop aseptic meningitis with stiffness of the back or legs, and in some persons increased or abnormal sensations a few days after the minor illness resolves. These symptoms typically last from two to 10 days, followed by complete recovery. Less than 1% of polio cases result in paralysis of the limbs (usually the legs). Of those cases resulting in paralysis, five percent to10 percent of the patients die when the respiratory muscles are paralyzed. The risk of paralysis increases with age.

# How common was polio in the United States?

Polio was one of the most dreaded childhood diseases of the 20th century in the United States. Periodic epidemics occurred since the late 19th century and they increased in size and frequency in the late 1940s and early 1950s. An average of more than 35,000 cases were reported during this time period. With the introduction of Salk inactivated poliovirus vaccine (IPV) in 1955, the number of cases rapidly declined to less than 2,500 cases in 1957. By 1965, only 61 cases of paralytic polio were reported.

# Is polio still seen in the United States?

The last cases of naturally occurring paralytic polio in the United States were in 1979, when an outbreak occurred among the Amish in several Midwestern states. From 1980 through 1999, there were 162 confirmed cases of paralytic polio cases reported. Of the 162 cases, eight cases were acquired outside the United States and imported. The last imported case caused by wild poliovirus into the United States was reported in 1993. The remaining 154 cases were vaccine- associated paralytic polio (VAPP) cause by live oral poliovirus vaccine (OPV).

# What kind of polio vaccines are used in the United States?

IPV, which is given as a shot, is now used in the United States. OPV has not been used in the United States since 2000 but is still used in many parts of the world.

# Who should get polio vaccine and when?

The poliovirus vaccine used in the United States is IPV. IPV is a shot, given in the leg or arm, depending on age. Polio vaccine may be given at the same time as other vaccines.

IPV is routinely given to children. Children get four doses at these ages:

- ·A dose at 2 months
- ·A dose at 4 months
- ·A dose at 6-18 months
- -A booster dose at 4-6 years

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# **Rabies**

#### What is rabies?

Rabies is a deadly disease caused by a virus that attacks the central nervous system. The virus is present primarily in the saliva, brain tissue and spinal fluid of a rabid animal.

## What animals can get rabies?

Rabies can affect all mammals. Since 1995 in the United States, more than 7,000 animals per year--most of them wild--have been diagnosed as having the disease. The disease is found in all states except Hawaii, as well as in Canada, Mexico and most other countries around the world.

In wild animal species, rabies is more common in bats, skunks, raccoons, coyotes and foxes, but the disease also has been found in deer and in large rodents, such as woodchucks. Cats, dogs and livestock can get rabies, too, if they are not vaccinated. Some animals, including chipmunks, gerbils, guinea pigs, hamsters, mice, rabbits, rats and squirrels, rarely get rabies. Birds, fish, insects, lizards, snakes and turtles never get rabies.

Most of the recent cases of human rabies that have occurred in the United States have been caused by rabies virus from bats. In Illinois, rabid bats can be found anywhere. Awareness that bats can be a source of the rabies virus can help people protect themselves.

Although bats can carry the rabies virus, most bats are not infected with it. The only way rabies can be diagnosed in a bat, however, is by laboratory testing. There are several signs, though, that could indicate a bat is more likely to be infected with the rabies virus. Bats seen during the day, those found in a place where bats are usually not found (e.g., in a room in your home, on your lawn, etc.) or bats that are unable to fly are more likely to be infected than others. Bats, like all wild animals, should never be handled.

People usually know when they have been bitten by a bat, but there are instances when a bite may not be apparent. Bats have very small teeth and marks made by these teeth may not be easy to see. If you find yourself in close proximity to a bat and cannot assure you were not exposed to it, you should call your doctor or your local health department; they can help to determine if you could have been exposed to rabies. For example, if you awaken and find a bat in your bedroom, if you see a bat in the room of an unattended young child, or if you see a bat near a mentally impaired or intoxicated person, a doctor or local health department should be consulted. Do not discard the bat and do not damage the bat's head.

# What are the signs of rabies in an animal?

The first sign of rabies is usually a change in the animal's behavior. An animal need not be "foaming at the mouth" to have rabies. Other signs include difficulty walking, a general appearance of sickness or a change in the animal's normal behavior. For example, if an animal that is normally wild and avoids contact with humans approaches a picnic area, campsite or home and appears tame or friendly, consider it rabid. Conversely, if a normally tame and friendly animal becomes hostile or aggressive without provocation, it too should be considered rabid. A rabid animal usually dies within one week after showing signs of the disease.

## How are people exposed to rabies?

People usually are exposed to the rabies virus when an infected animal bites them. Exposure may occur if the animal's saliva enters an open cut or mucous membrane (nose, mouth, eyes). The presence of a bat in a home, or any contact with a bat, represents a possible hazard for rabies and should be reported to the local health department so that the circumstances can be evaluated. The last human case in Illinois was reported in 2021.

## What should a person do if an animal bite occurs?

Wash the wound thoroughly with soap and water and seek medical attention immediately. The local health department or the county animal control office also should be notified immediately. The animal should be captured without damaging its head and only if direct contact with the animal can be avoided.

If an apparently healthy domestic dog, cat or ferret bites a human, it must be captured, confined and professionally observed for 10 days following the bite. If the animal remains healthy during this period, it would not have transmitted rabies at the time of the bite. There is no reliable observation period established for non-domestic animals. If a person is bitten by a non-domestic animal and it is available for testing, testing should be done immediately. All animal bites should be reported to the local animal control office. If an animal suspected of having rabies cannot be observed or tested, or if it tests positive for rabies, treatment of the individual with rabies immune globulin and the vaccine series must begin immediately. Vaccine injections are given in the arm.

People in high-risk occupations--for example, veterinarians, wildlife biologists, wildlife rehabilitators, animal control officers and taxidermists--should consider getting the rabies vaccine to protect themselves from exposures that could occur in their work. This type of vaccination (pre-exposure vaccination) consists of three rabies vaccine injections. These vaccinated persons should have their rabies titers tested every two years. If their titer falls below 1:5 they should receive a booster vaccination. A person already vaccinated and later exposed to rabies must receive two booster injections three days apart immediately after exposure.

# What if a pet is exposed to a rabid animal?

If your pet has been in a fight with another animal call your veterinarian. A vaccinated pet may need a booster dose of rabies vaccine as soon as possible. Unvaccinated animals exposed to a known rabid animal must be confined and professionally observed for six months or euthanized.

# What can people do to protect themselves and their pets from rabies?

If a wild animal comes on your property, let it wander away. Bring children and pets indoors and alert neighbors. If the animal is acting abnormally (nocturnal animal around during daylight hours, animal having trouble walking etc) you should contact your local animal control.

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Tickborne Illnesses

# **Rocky Mountain Spotted Fever**

## What is Rocky Mountain spotted fever?

Rocky Mountain spotted fever is an acute infectious disease transmitted to humans by the bite of an infected tick. The disease occurs throughout the United States during months when ground temperatures reach 40 degrees Fahrenheit or more and ticks are active.

## Who gets Rocky Mountain spotted fever?

Both children and adults can be affected by Rocky Mountain spotted fever. Disease incidence is directly related to exposure to tick-infested habitats or to infested pets. In spite of the disease's name, few cases have been reported from the Rocky Mountain region of the United States.

## **How is Rocky Mountain spotted fever spread?**

Rocky Mountain spotted fever is spread by the bite of an infected tick (the American dog tick or the lone-star tick) or by contamination of the skin with tick blood or feces. Person-to- person transmission does not occur.

# What are the symptoms of Rocky Mountain spotted fever?

Rocky Mountain spotted fever 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 the rest of the body. Not every case of Rocky Mountain spotted fever will have the rash.

# How soon do symptoms appear?

Symptoms usually appear between three and 14 days after the bite of an infected tick. Any person experiencing illness with a fever following a tick bite should consult his or her physician and advise the physician of the tick bite.

# How is Rocky Mountain spotted fever diagnosed?

Diagnosis of Rocky Mountain spotted fever is based largely on the patient's signs and symptom's of illness. Blood tests are important in confirming a diagnosis, but treatment should begin promptly if symptoms and exposure history support this diagnosis.

# What is the treatment for Rocky Mountain spotted fever?

Treatment involves the use of certain antibiotics, such as tetracycline or chloramphenicol. Antibiotic treatment can be terminated two or three days after a person's temperature returns to normal for a full 24-hour period. Overall mortality hovers between 3 percent and 5 percent but ranges from 13 percent

to 25 percent in untreated individuals. Death primarily occurs in patients in whom the diagnosis is not made until the second week of illness. The absence or delayed appearance of the typical rash contributes to a late diagnosis and thereby increases the incidence of fatality.

# How can Rocky Mountain spotted fever be prevented?

Persons spending time outdoors in areas where ticks are commonly found — wooded areas, tall grass and brush — should take precautions against all tickborne diseases:

#### How should an attached tick be removed?

Remove any tick promptly. Do not try to burn the tick with a match or cover it with petroleum jelly or nail polish. Do not use bare hands. The best way to remove a tick is to grasp it with fine-point tweezers as close to the skin as possible and gently, but firmly, pull it straight out. Do not twist or jerk the tick. If tweezers are not available, grasp the tick with a piece of cloth or whatever can be used as a barrier between your fingers and the tick. You may want to put the tick in a jar of rubbing alcohol labeled with the date and location of the bite in case you seek medical attention and your physician wishes to have the tick identified.

The mouthparts of a tick are shaped like tiny barbs and may remain embedded and lead to infection at the bite site if not removed properly. Be sure to wash the bite area and your hands thoroughly with soap and water, and apply an antiseptic to the bite site.

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## Rotavirus

#### What is rotavirus?

Rotavirus is a virus that causes severe diarrhea and vomiting. It affects mostly babies and young children. Diarrhea and vomiting can lead to serious dehydration (loss of body fluid). If dehydration is not treated, it can be deadly. The rotavirus vaccine protects against this illness.

## What are the symptoms of rotavirus?

Rotavirus may cause the following:

Diarrhea and vomiting may last for three days to eight days. Children may stop eating and drinking while they are sick.

#### How serious is rotavirus?

Rotavirus can be very harmful. Diarrhea, vomiting and fever can all cause a loss of body fluids. This leads to dehydration, which can be very dangerous, especially for babies and young children. Some children need an IV (needle in their vein) in the hospital to replace lost fluids.

# How does rotavirus spread?

Rotavirus spreads easily. The virus is in the stool (feces) of people who are infected with the virus. It is spread by hands, diapers, or objects like toys, changing tables, or doorknobs that have a small amount of the stool on them. The disease commonly spreads in families, hospitals, and child care centers. Rotavirus is a tough virus. It can live on objects for several days unless it is killed by a disinfectant (cleaner that kills germs). It is very hard to prevent rotavirus with just hand-washing and cleaning with a disinfectant.

Vaccination is the best way to keep children safe from rotavirus.

# Can rotavirus be prevented?

The best prevention against rotavirus is the rotavirus vaccine (RotaTeq® and Rotarix®). Rotavirus vaccines protect children by preparing their bodies to fight the virus. Almost all children (85 to 98 children out of 100) who get the rotavirus vaccine will be protected from severe disease caused by the virus. The vaccine will not stop diarrhea or vomiting caused by other germs, though.

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Infectious Respiratory Disease

# **Respiratory Syncytial Virus (RSV)**

Respiratory Syncytial Virus (RSV) is a common cold virus that causes runny nose, fever, and cough that usually go away on their own in a about a week for most. Some people are more susceptible to RSV including young children, those with compromised immune systems, and those with advanced age. RSV can lead to more severe disease and hospitalization in these higher risk groups. There is now a vaccine for RSV to protect young children and older adults as well as preventative treatments for infants and young children available. Consult with your family physician for more information on RSV vaccine and treatment options.

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## Rubella

#### What is rubella?

Rubella, also called German measles, is a viral illness that is spread from person to person by breathing in droplets of respiratory secretions exhaled by an infected person. It also may be spread by touching the nose or mouth after a person's hands have been in contact with secretions (such as saliva) of an infected person.

#### How common is rubella?

Rubella and congenital rubella syndrome, a condition that affects newborn infants when the mother transfers rubella to the baby, became nationally reportable diseases in 1966. Prior to this, epidemics were occurring every six to nine years. Following vaccine licensure in 1969, no further large epidemics have occurred, and the number of U.S. cases has dropped annually from 58 per 100,000 in the pre-vaccine era to 0.5 per 100,000 by 1983. Since 1994, the disease has occurred predominately among persons 20 to 39 years old; most of these persons were born outside the U.S. in areas where rubella vaccine is not routinely given. The decrease in rubella cases has paralleled s increased efforts to vaccinate susceptible adolescents and young adults, especially women.

Outbreaks continue to occur among groups of susceptible persons who congregate in locations that increase their exposure, such as workplaces, and among persons with religious and philosophic exemption to vaccination. Several recent outbreaks have occurred among Hispanic persons. In fact, in 1996, two-thirds of reported cases were among Hispanics.

# What are the symptoms of rubella?

Symptoms of rubella include an acute onset of rash (small, fine pink spots) that starts on the face and spreads to the torso, then to the arms and legs, with low-grade fever, swollen lymph nodes or conjunctivitis. Many (25 percent to 50 percent) cases are asymptomatic, especially in children, but adults may experience symptoms for one to five days. Incubation is normally 16-18 days, but can be 12-23 days. Persons with rubella are infectious from seven days before rash onset to seven days after rash onset.

Rubella can be especially dangerous to pregnant women, who may transfer infection to the baby, resulting in abortions, miscarriages, stillbirths and severe birth defects. The most common congenital defects are cataracts and other eye defects, heart defects, sensorineural deafness, mental retardation and other immunodeficiencies.

# Should a person with rubella stay home?

The disease is most contagious when the rash is erupting. In schools and other educational institutions, exclusion of persons without valid evidence of immunity and persons exempted from rubella vaccination because of medical, religious or other reasons should be enforced and continue until two weeks after the onset of rash of the last reported case in the outbreak setting. In medical settings, mandatory exclusion and vaccination of adults should be practiced.

#### What is the treatment for rubella?

Treatment includes bed rest, lots of fluids and medicine for fever, headache or joint pain. Antibiotics neither cure nor prevent rubella. There are no antiviral drugs for treating rubella.

## Can rubella be prevented?

The best prevention against rubella is immunization. The rubella vaccine is part of the MMR (measles, mumps, rubella) vaccine administered to children beginning at 12 months of age. Susceptible hospital personnel, volunteers, trainees, nurses, physicians and all persons who are not immune should be vaccinated against rubella. Women who are pregnant or intend to become pregnant within three months, however, should not receive rubella vaccine.

Acquired immunity after illness is permanent.

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## Salmonella

#### What is Salmonella?

Salmonella bacteria cause much of the food poisoning in the world, including an estimated 1,400,000 cases of salmonellosis in the United States each year. In Illinois about 1,500 to 2,000 cases of this foodborne illness are reported each year.

Salmonella is a general name for a group of about 2,000 closely related bacteria that cause illness by reproducing in the digestive tract.

## How is it spread?

Salmonella live in the intestinal tracts of humans and other animals, including birds. Humans are usually infected by eating foods contaminated with animal feces. Contaminated foods are often of animal origin, such as beef, poultry, milk or eggs, but any food, including fruits and vegetables, may become contaminated. Contaminated foods usually look and smell normal and the contamination should not be expected to be visible.

Person-to-person transmission of salmonella occurs when an infected person's feces, unwashed from his or her hands, contaminates food during preparation or comes into direct contact with another person. Salmonella can also be acquired directly from animals such as pets, birds, fish, dogs, cats and turtles. The U.S. Food and Drug Administration banned the sale of turtles smaller than 4 inches wide in 1975 to prevent the spread of salmonella.

# What are the symptoms?

Symptoms may include headache, muscle aches, diarrhea, vomiting, abdominal cramping, chills, fever, nausea and dehydration. Symptoms usually appear six to 72 hours after ingestion of the bacteria, but can be longer if fewer organisms are ingested. Persons can be infected with the bacteria without having symptoms. Persons with and without symptoms shed the bacteria in their stool, which is why proper handwashing after toileting and before handling food is so important. Children younger than 1 year old, people who have had ulcer surgery or take antacids and those with weakened immune systems are most susceptible to salmonella infection.

Salmonellosis is seldom fatal (the fatality rate is less than 1 percent). Two or three weeks after being infected with salmonella, one in 10,000 cases develops reactive arthritis or Reiter's syndrome as a complication. These patients also may develop an inflammation of the urethra and eyes.

#### How is salmonellosis treated?

Fluids are recommended to prevent dehydration because the diarrhea that flushes bacteria out of the body drains a great deal of liquid. Pain relievers and fever reducers may make the person more comfortable.

Most cases of salmonellosis are not treated with antibiotics. In fact, antibiotics may prolong the period during which the person can infect others. Antibiotics sometimes are prescribed for infants, the

chronically ill and the elderly to treat or prevent complications in those at increased risk for invasive disease.

## Can salmonellosis be prevented

People are far more likely to contract salmonellosis at home than in a restaurant, so be sure to wash hands with soap and water after toileting and before handling foods.

Salmonella bacteria are killed when food is thoroughly cooked. This means cooking ground beef to at least 155 degrees and making sure all food is cooked properly. Once cooked, any food held in a buffet should be kept hotter than 140 degrees. Cross-contamination –where food is contaminated in the kitchen after it has been cooked – may be avoided by using different utensils, plates, cutting boards and counter tops before and after cooking. Cooked food that stands at room temperature for a long time, especially poultry, is at risk.

Defrost frozen food in the refrigerator or microwave. Refrigerator temperatures should be kept colder than 40 degrees. Rinse poultry in cold water before cooking. Avoid raw milk, raw hamburger meat and raw eggs (many recipes, such as those for homemade ice cream, call for eggs with no subsequent cooking; substitute pasteurized eggs in these recipes). Food contaminated with salmonella may look, smell and taste normal.

Because fruits and vegetables have now been identified as a source of salmonella, it is important that these food items be thoroughly washed in running water before they are eaten. Wash utensils and wooden cutting boards thoroughly with hot, soapy water. Salmonella may lie dormant for a year or more and then "wake up" when food is present. They also may live in the cut marks on a wooden cutting board. Use an acrylic board that can go in the dishwasher. If using a wooden board, rub down or spray the board with a solution of one ounce bleach to one gallon water and allow to air dry. Cutting boards for raw meat and poultry should not be used for cheese, raw vegetables and other foods that will not be cooked before being served.

To prevent the spread of salmonella, wash hands thoroughly after using the bathroom and before handling food. Do not allow an infected person to handle food or work in the kitchen.

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## **Sarcoidosis**

#### What is sarcoidosis?

Sarcoidosis is an inflammatory disease that can appear in almost any body organ, but most often starts in the lungs or lymph nodes. The disease also can affect the liver, skin, heart, nervous system and kidneys. No one yet knows what causes sarcoidosis. It can appear suddenly and then disappear. Or it can develop gradually and produce symptoms that come and go, sometimes for a lifetime.

As sarcoidosis progresses, small lumps--granulomas--appear in affected tissues. While these granulomas frequently clear up, with or without treatment, sometimes they do not heal. In these cases, the tissues tend to remain inflamed and become scarred (fibrotic).

## What are the symptoms of sarcoidosis?

Generally, shortness of breath and a cough that will not go away are among the first symptoms of sarcoidosis. The disease also can show up suddenly with the appearance of skin rashes. Red bumps on the face, arms or shins and inflammation of the eyes also are common symptoms. It is not unusual, however, for sarcoidosis symptoms to be more general: weight loss, fatigue, night sweats, fever or an overall feeling of ill health.

Patients can have symptoms related to the specific organ affected, they can have only general symptoms or they can be without any symptoms whatsoever. Symptoms can vary according to how long the illness has been under way, where the granulomas are forming, how much tissue has become affected and whether the granulomatous process is still active.

# Who gets sarcoidosis?

Once considered a rare disease, sarcoidosis is now known to be a common chronic illness that appears all over the world. Indeed, it is the most common of the fibrotic lung disorders. Anyone can get sarcoidosis. It occurs in all races and in both sexes, but mainly in people between 20 and 40 years of age. The risk is greater if you are a young African-American adult (especially a woman) or of Scandinavian, German, Irish or Puerto Rican origin. White women are just as likely as white men to get sarcoidosis but, among African Americans, females get sarcoidosis two times as often as males.

#### How common is sarcoidosis?

Because sarcoidosis can escape diagnosis or be mistaken for several other diseases, it is only possible to guess how may people are affected. The best estimate today is that about five in 100,000 white people in the United States have sarcoidosis. Among African Americans, it occurs in probably 40 out of 100,000 people.

In Illinois, deaths attributed to sarcoidosis steadily increased between 1969 and 1994. It is unclear whether the number and rate are up due to increased occurrence of the disease, increased recognition and reporting, or both. The year with the most recorded sarcoidosis deaths--36--was 1992. The three-year mortality rate was 0.8 deaths per million population for 1969-71, 1.2 for 1974-76, 1.6 for 1979-81, 2.0 for 1984-86, 2.6 for 1989-91 and 2.8 for 1992-94.

## How is sarcoidosis diagnosed?

Preliminary diagnosis of sarcoidosis is based on the patient's medical history, routine tests, a physical examination and a chest X-ray. The physician confirms the diagnosis by eliminating other diseases with similar features, for example, tuberculosis, farmer's lung disease, fungal infections, rheumatoid arthritis, rheumatic fever and cancer of the lymph nodes. Many of the tests used to help diagnose sarcoidosis can help the patient's physician follow the progress of the disease and determine whether it is getting better or worse.

#### How is sarcoidosis treated?

Fortunately, many patients with sarcoidosis require no treatment, especially those whose symptoms are not disabling. Many times, the symptoms will disappear spontaneously. When therapy is recommended, the main goal is to keep the lungs and other affected body organs working and to relieve symptoms. The disease is considered inactive once the symptoms fade. Corticosteroids (usually prednisone) remain the primary treatment for inflammation and granuloma formation. There is no treatment at present to reverse the fibrosis that might be present in advanced sarcoidosis.

Because sarcoidosis can disappear even without therapy, physicians sometimes disagree on when to start the treatment, what dose to prescribe and how long to continue medication. One determining factor is the organ system involved and how far the inflammation has progressed. If the disease appears to be severe--especially if it is in the lungs, eyes, heart, nervous system, spleen or kidneys--the physician may prescribe corticosteroids. These medications usually result in improvement. Symptoms can reappear, however, after the medication is stopped. Treatment, therefore, may be necessary for several years--sometimes for as long as the disease remains active or to prevent relapse.

It is important for those with sarcoidosis to have frequent checkups so that the physician can monitor the illness and, if necessary, adjust the treatment. Corticosteroids, for example, can have side effects--mood swings, swelling and weight gain from fluid retention, high blood pressure, high blood sugar and craving for food. Long-term use can affect the stomach, skin and bones, bringing on stomach pains, ulcers, acne or loss of calcium from bones. If corticosteroids are taken in carefully prescribed low doses, however, the benefits from the treatment are usually far greater than the problems.

# Where can I get more information about sarcoidosis?

For the names of U.S. scientists studying sarcoidosis or physicians specializing in the disease, write to the National Heart, Lung and Blood Institute, Division of Lung Diseases, 2 Rockledge Center, 6701 Rockledge Drive, MSC 7952, Suite 10018, Bethesda, MD 20892-7952. Publications on the disease are available from the National Institute of Allergy and Infectious Diseases, 9000 Rockville Pike, Building 31/Room 7A32, Bethesda, MD 20892; or from the Sarcoidosis Family Aid and Research Foundation, 460A Central Ave., East Orange, NJ 07018.

The following organizations can provide additional information about the disease and about support groups: Sarcoidosis Networking, 13925 80th St. East, Puyallup, WA 98372 (206-845-3108, voice/fax); National Sarcoidosis Resource Center, P.O. Box 1593, Piscataway, NJ 08855-1593 (908-699-0733, voice; 908-699-0882, fax); and Sarcoidosis Research Institute, 3475 Central Ave., Memphis, TN 38111 (901-327-5454, voice; 901-452-1470, fax); National Sarcoidosis Network of America, Inc., P.O. Box 21334, Chicago, IL 60621 (773-536-7754, voice). Persons seeking to locate support groups in Illinois may call the Chicagoland Sarcoidosis Support Group Association at 773-285-2608 or 773-723-6188.

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# **SARS (Healthcare Providers)**

#### What is SARS?

Severe acute respiratory syndrome (SARS) is a viral respiratory illness. The illness usually begins with a high fever (measured temperature greater than 100.4·F [>38.0·C]). The fever is sometimes associated with chills or other symptoms, including headache, general feeling of discomfort, and body aches. Some people also experience mild respiratory symptoms at the outset. Diarrhea is seen in approximately 10 percent to 20 percent of patients. After two to seven days, SARS patients may develop a dry, nonproductive cough that might be accompanied by or progress to a condition (hypoxia) in which the person does not have sufficient oxygen. In 10 percent to 20 percent of cases, patients require mechanical ventilation. Most patients develop pneumonia.

#### What is the cause of SARS?

SARS is caused by a previously unrecognized coronavirus, called SARS-associated coronavirus (SARS-CoV). Coronaviruses are a group of viruses that have a halo or crown-like (corona) appearance when viewed under an electron microscope. These viruses are a common cause of mild to moderate upper-respiratory illness in humans and are associated with respiratory, gastrointestinal, liver and neurologic disease in animals.

# What is the incubation period for SARS?

The incubation period for SARS is typically two to seven days, although in some cases it may be as long as 10 days.

# How is SARS spread?

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

#### What does "close contact" mean in the context of SARS?

Close contact is defined as having cared for or lived with a person known to have SARS or having a high likelihood of direct contact with respiratory secretions and/or body fluids of a patient known to have SARS. Examples include kissing or embracing, sharing eating or drinking utensils, close conversation (within 3 feet), nursing care, and any other direct physical contact. Close contact does not include activities such as walking by a person or sitting across a waiting room or office for a brief time.

## How long is a person with SARS infectious to others?

Available information suggests that people with SARS are most likely to be infectious only when they have symptoms, such as fever or cough. However, as a precaution against spreading the disease, people with SARS should stay at home until 10 days after their symptoms are no longer present. Patients are most infectious during the second week of illness.

# If I am a close contact to someone with SARS, what precautions should I take?

All members of a household with a SARS patient should carefully follow recommendations for hand hygiene (e.g., frequent hand washing with soap and warm water or use of alcohol-based hand rubs), particularly after contact with body fluids (e.g., respiratory secretions, urine, or feces). Use of disposable gloves should be considered for any direct contact with body fluids of a SARS patient. However, gloves are not intended to replace proper hand hygiene. Immediately after activities involving contact with body fluids, gloves should be removed and discarded and hands should be cleaned. Gloves must never be washed or reused.

Each patient with SARS should be advised to cover his or her mouth and nose with a facial tissue when coughing or sneezing. If possible, a SARS patient should wear a surgical mask during close contact with uninfected persons to prevent spread of infectious droplets. When a SARS patient is unable to wear a surgical mask, household members should wear surgical masks when in close contact with the patient.

Sharing of eating utensils, towels, and bedding between SARS patients and others should be avoided, although such items can be used by others after routine cleaning (e.g., washing with soap and hot water). Environmental surfaces soiled by body fluids should be cleaned with a household disinfectant according to manufacturer's instructions; gloves should be worn during this activity. Household members and other close contacts of SARS patients should be actively monitored by the local health department for illness. Household members or other close contacts of SARS patients should watch for fever (i.e., measure temperature twice daily) or respiratory symptoms and, if these develop, should immediately seek healthcare evaluation. In advance of evaluation, healthcare providers should be informed that the individual is a close contact of a SARS patient so arrangements can be made, as necessary, to prevent transmission to others in the healthcare setting. Household members or other close contacts with symptoms of SARS should follow the same precautions recommended for SARS patients. Household members or other close contacts of SARS patients need not limit their activities outside the home if they do not have fever or respiratory symptoms.

# How is SARS diagnosed?

Several laboratory tests can be used to detect SARS-CoV. A reverse transcription polymerase chain reaction (RT-PCR) test can detect SARS-CoV in clinical specimens, including blood, stool, and nasal secretions. Serologic testing also can be performed to detect SARS-CoV antibodies produced after infection. Serologic testing does require both an acute and convalescent serum. Finally, viral culture has been used to detect SARS-CoV. The state public health laboratory and the Center for Disease Control laboratory can perform the necessary tests if criteria for testing are met.

#### Who should be tested for SARS?

Health care providers should consult their local health departments for laboratory testing information when SARS is suspected.

# What medical treatment is recommended for patients with SARS?

CDC recommends that patients with SARS receive the same treatment that would be used for any patient with serious community-acquired atypical pneumonia. Various antiviral drugs are being tested against SARS-CoV to see if an effective treatment can be found.

## If there is another outbreak of SARS, how can I protect myself?

There are some precautions that can prevent the spread of many infectious diseases. The most important is frequent hand washing with soap and warm water or use of alcohol-based hand rubs. Avoid touching the eyes, nose and mouth with unclean hands. Encourage others to cover their nose and mouth with a tissue when coughing or sneezing and to dispose of tissues after use. Finally, avoid sharing drinks, cigarettes, eating utensils or other items that may come in contact with respiratory secretions or body fluids.

#### Are there disinfectants available that can kill SARS-CoV?

Right now, there are no disinfectant products registered by the U.S. Environmental Protection Agency for use on environmental surfaces that are specifically listed as having the ability to kill SARS-CoV. However, related viruses that have similar physical and biochemical properties can be killed with bleach, ammonia or alcohol, or cleaning agents containing any of these disinfectants. Cleaning agents should be used according to the manufacturer's instructions.

# What is isolation and quarantine and why might they be used in a SARS outbreak?

To contain the spread of a contagious illness, such as SARS, public health authorities rely on many strategies. Two of these strategies are isolation and quarantine. Both are practices in public health which control exposure to infected or potentially infected individuals. Both may be undertaken voluntarily or compelled by public health authorities.

Isolation of people who have a specific illness separates them from healthy people and restricts their movement to stop the spread of that illness. Isolation allows for the focused delivery of specialized health care to people who are ill, and it protects healthy people from getting sick. People in isolation may be cared for in their homes, in hospitals, or at designated health care facilities. Quarantine, in contrast, applies to people who have been exposed and may be infected but are not yet ill. Separating exposed people and restricting their movements is intended to stop the spread of that illness. Quarantine is very effective in protecting the public from disease.

# What is the history of SARS?

SARS was first reported in Asia in February 2003. In early March 2003, the World Health Organization (WHO) issued a global alert about SARS. Over the next few months, the illness spread to more than two dozen countries in North America, South America, Europe, and Asia. By late July, however, no new cases were being reported and the illness was considered contained. According to WHO, more than 8,000 people worldwide became ill with SARS during the outbreak of 2003, of these, 813 died. The United States had eight laboratory confirmed cases. Illinois had no laboratory confirmed cases during the outbreak. SARS cases reported in the United States occurred primarily among people who traveled to SARS-affected areas; a small number of other people became ill after being in close contact with a SARS patient while in the United States. There was no evidence that SARS spread more widely in the community in the United States.

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# **SARS**

#### What is SARS?

Severe acute respiratory syndrome (SARS) is a respiratory illness caused by a virus. The illness usually begins with a high fever. Patients also may have chills or other symptoms, including headache, general feeling of discomfort, body aches and diarrhea. Some individuals' illness also may begin with mild respiratory symptoms. After two to seven days, SARS patients may develop a dry cough that might be accompanied by or progress to a condition which the person does not have sufficient oxygen. Most SARS patients develop pneumonia.

#### What is the cause of SARS?

SARS is caused by a virus which is a member of the coronavirus group. Coronaviruses are a group of viruses that have a halo or crown-like (corona) appearance when viewed under an electron microscope. Some of these viruses are a common cause of mild to moderate upper- respiratory illness in humans. They are also known to cause disease in animals. The coronavirus which causes SARS was not previously known to cause human illness.

# If I were exposed to SARS, how long would it take for me to become sick?

The time between exposure to the SARS virus and onset of symptoms is called the "incubation period." The incubation period for SARS is typically two to seven days, although in some cases it may be as long as 10 days.

# How is SARS spread?

The SARS virus is spread when an infected person coughs or sneezes and respiratory droplets are propelled through the air and deposited on persons or nearby surfaces. Persons in close contact with SARS patients are more likely to become infected than persons with casual contact. Close contact is defined as having cared for or lived with a person known to have SARS or having a high likelihood of direct contact with respiratory secretions and/or body fluids of a person known to have SARS. Examples include kissing or embracing, sharing eating or drinking utensils, close conversation (within 3 feet), nursing care, and any other direct physical contact. Close contact does not include activities such as walking by a person or sitting across a waiting room or office for a brief time.

# How long is a person with SARS infectious to others?

Available information suggests that people with SARS are most likely to be infectious only when they have symptoms, such as fever or cough. However, as a precaution against spreading the disease, people with SARS should stay at home until 10 days after their symptoms have gone away. Patients are most infectious during the second week of illness.

## What should I do if I think I may have SARS?

If you think you or someone in your family may have SARS, you should call your physician as soon as possible. Call ahead and tell them before you visit so they can take precautions to keep from exposing other people. Your physician may wish to do some laboratory testing to confirm whether you have SARS. If you have SARS, a list of precautions will be given to you and other household members to follow until you are well.

## If there is another outbreak of SARS, how can I protect myself?

There are precautions that you can take that can prevent the spread of many infectious diseases. The most important is frequent hand washing with soap and warm water or use of alcohol-based hand rubs. Avoid touching your eyes, nose and mouth with unclean hands. Encourage others to cover their nose and mouth with a tissue when coughing or sneezing and to dispose of tissues after use. Finally, avoid sharing drinks, cigarettes, eating utensils or other items that may come in contact with respiratory secretions or body fluids.

#### Are there disinfectants available that can kill the SARS virus?

Right now, there are no disinfectant products registered by the U.S. Environmental Protection Agency for use on environmental surfaces that are specifically listed as having the ability to kill the SARS virus. However, similar viruses can be killed with bleach, ammonia or alcohol, or cleaning agents containing any of these disinfectants. Cleaning agents should be used according to the manufacturer's instructions.

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## **Scabies**

#### What is scables?

Human scabies is caused by an infestation of the skin by the human itch mite (Sarcoptes scabiei var. hominis). The microscopic scabies mite burrows into the upper layer of the skin where it lives and lays its eggs. The most common symptoms of scabies are intense itching and a pimple-like skin rash. The scabies mite usually is spread by direct, prolonged, skin-to-skin contact with a person who has scabies. An infested person can spread scabies even if he or she has no symptoms. Humans are the source of infestation; animals do not spread human scabies.

Scabies occurs worldwide and affects people of all races and social classes. Scabies can spread rapidly in crowded conditions where close body contact is frequent. Institutions such as nursing homes, extended-care facilities, and prisons are often sites of scabies outbreaks

## How do you get scabies?

Sexual transmission: transmission is more likely to occur when partners spend the night together than with a brief sexual encounter.

Nonsexual transmission: possibly from sleeping in infested bedding, wearing infested clothing, even routine contact such as shaking or holding hands. Transmission from a toilet seat may be possible, but is unlikely.

# How long does it take before symptoms appear?

The female mite burrows under the skin and begins laying eggs within hours (two to three eggs daily). The eggs hatch and become adult mites within 10 days. Symptoms, primarily itching, appear approximately four weeks from the time of contact as a result of sensitization to the presence of immature mites.

# How long are you infectious?

A person with scabies is considered infectious as long as they have not been treated. Infested pieces of clothing and bedding are considered infectious until treated. After treatment, a person may unknowingly reinfest themselves by coming into contact with the same person who had scabies to begin with or with someone else who has scabies.

# What are the symptoms of scabies?

The most common symptoms of scabies, itching and a skin rash, are caused by sensitization (a type of "allergic" reaction) to the proteins and feces of the parasite. Severe itching (pruritus), especially at night, is the earliest and most common symptom of scabies. A pimple-like (papular) itchy (pruritic) "scabies rash" is also common. Itching and rash may affect much of the body or be limited to common sites such as:

The head, face, neck, palms and soles often are involved in infants and very young children, but usually not adults and older children.

Tiny burrows sometimes are seen on the skin; these are caused by the female scabies mite tunneling just beneath the surface of the skin. These burrows appear as tiny raised and crooked (serpiginous) grayish-white or skin-colored lines on the skin surface. Because mites are often few in number (only 10-15 mites per person), these burrows may be difficult to find. They are found most often in the webbing between the fingers, in the skin folds on the wrist, elbow or knee, and on the penis, breast or shoulder blades.

## How is scabies diagnosed?

Diagnosis of a scabies infestation usually is made based upon the customary appearance and distribution of the rash and the presence of burrows.

Whenever possible, the diagnosis of scabies should be confirmed by identifying the mite or mite eggs or fecal matter (scybala). This can be done by carefully removing the mite from the end of its burrow using the tip of a needle or by obtaining a skin scraping to examine under a microscope for mites, eggs or mite fecal matter (scybala). However, a person can still be infested even if mites, eggs or fecal matter cannot be found; fewer than 10-15 mites may be present on an infested person who is otherwise healthy.

#### How is scabies treated?

It is important to remember that the first time a person gets scabies they usually have no symptoms during the first two to six weeks they are infested; however they can still spread scabies during this time.

In addition to the infested person, treatment also is recommended for household members and sexual contacts, particularly those who have had prolonged direct skin-to-skin contact with the infested person. Both sexual and close personal contacts who have had direct prolonged skin-to-skin contact with an infested person within the preceding month should be examined and treated.

All persons should be treated at the same time to prevent reinfestation.

Products used to treat scabies are called scabicides because they kill scabies mites; some also kill mite eggs. Scabicides used to treat human scabies are available only with a doctor's prescription. No "over-the-counter" (non-prescription) products have been tested and approved to treat scabies. The instructions contained in the box or printed on the label always should be followed carefully. Always contact a doctor or pharmacist if unsure how to use a particular medicine.

Scabicide lotion or cream should be applied to all areas of the body from the neck down to the feet and toes. In addition, when treating infants and young children, scabicide lotion or cream also should be applied to their entire head and neck because scabies can affect their face, scalp, and neck, as well as the rest of their body. The lotion or cream should be applied to a clean body and left on for the recommended time before washing it off. Clean clothing should be worn after treatment.

Bedding, clothing and towels used by infested persons or their household, sexual and close contacts (as defined above) anytime during the three days before treatment should be decontaminated by washing in hot water and drying in a hot dryer, by dry-cleaning, or by sealing in a plastic bag for at least 72 hours. Scabies mites generally do not survive more than two to three days away from human skin.

Because the symptoms of scabies are due to a hypersensitivity reaction (allergy) to mites and their feces (scybala), itching still may continue for several weeks after treatment even if all the mites and eggs are killed. If itching still is present more than two weeks to four weeks after treatment or if new burrows or pimple-like rash lesions continue to appear, retreatment may be necessary.

Skin sores that become infected should be treated with an appropriate antibiotic prescribed by a doctor. Use of insecticide sprays and fumigants is not recommended.

# How can I keep from getting scabies?

# What about complications from scabies?

HIV/STD Hotline 800-243-2437 (TTY 800-782-0423)

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## **Seoul Virus**

#### What is Seoul virus?

Seoul virus is a virus carried by rats. It is a milder type of hantavirus.

#### How do humans become infected with Seoul virus?

Seoul virus is carried and transmitted by rats. The virus has been found in both pet rats and wild rats around the world. People can become infected with this virus after coming into contact with urine, droppings, or saliva of infected rats. When fresh rats urine, droppings, or nesting materials are stirred up, such as during vacuuming or sweeping, pieces of the virus can get into the air. Transmission may also occur when infected urine or feces come into direct contact with cuts or other broken skin, or into the eyes, nose, or mouth. In addition, individuals who work with live rats can be exposed to Seoul virus through bites from infected animals.

Seoul virus is not known to be transmitted from one person to another.

## What are the symptoms of Seoul virus infection?

Symptoms of Seoul virus infection usually develop within one to two weeks after exposure to the virus. Not everyone infected with Seoul virus will have symptoms. In rare cases, symptoms may take up to eight weeks to develop. Initial symptoms begin suddenly and may include intense headaches, back and abdominal pain, fever, chills, nausea, and blurred vision. Individuals may have flushing of the face, inflammation or redness of the eyes, or a rash. In more severe cases, symptoms can include low blood pressure, acute shock, vascular leakage, and acute kidney failure, which can cause severe fluid overload and lead to hemorrhagic fever with renal syndrome (HFRS). Seoul virus infections are usually mild to moderate. Complete recovery can take weeks or months.

# How is Seoul virus infection diagnosed?

Blood tests are used to confirm a diagnosis of Seoul virus infection.

#### How is Seoul virus infection treated?

There is no specific treatment for Seoul virus infection. Supportive care is used for patients with infections. This includes careful management of the patient's fluid (hydration) and electrolyte (e.g., sodium, potassium, chloride) levels, maintenance of oxygen and blood pressure levels, and appropriate treatment of any secondary infections. In severe cases, dialysis may be required.

#### Is Seoul virus infection ever fatal?

Death due to Seoul virus infection is rare, but is estimated to occur in 1-5 percent of patients.

# How is Seoul virus infection prevented?

Avoiding contact with rats and rat control is key to preventing Seoul virus infections. Wild rats near human communities should be controlled, and wild rats should be excluded from homes. Individuals should avoid contact with rat urine, droppings, saliva, and nesting materials. It is important to use disinfectant and follow guidelines for cleaning rat-infested areas. More information on how to safely clean up after rats can be found on CDC's webpage: https://www.cdc.gov/rodents/cleaning/index.html.

#### Where is Seoul virus found?

Seoul virus is found worldwide. Human infection due to Seoul virus is rare in the United States.

## Which rats carry the hantaviruses that cause HFRS in humans?

Primarily, the brown or Norway rat (Rattus norvegicus) carries Seoul virus, although other species of rat can also carry it.

## How do rats get Seoul virus?

Seoul virus is found in the urine, feces, and saliva of recently infected rats. Rats can become infected with Seoul virus through wounding or biting other rats and after coming in contact with the urine or feces of infected rats.

## How do I know if my pet rat is infected with Seoul virus?

Rats do not show symptoms of disease when they are infected with Seoul virus. The only way to know if they are infected is through laboratory testing.

# Is this virus the same one that causes Hantavirus Pulmonary Syndrome (HPS)?

No. HPS is a different syndrome caused by different viruses. HPS is typically more severe than HFRS.

# What should I do if I think I may have symptoms?

Seek prompt medical attention if you think you may be infected with Seoul virus. Tell your health care provider about your symptoms and explain your contact with rats.

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# **Shigellosis**

## What is shigellosis?

Shigellosis is an infectious disease caused by a group of bacteria called Shigella. Most people who are infected with Shigella develop diarrhea, fever and stomach cramps a day or two after being exposed to the bacterium. The diarrhea is often bloody. Shigellosis usually resolves in five to seven days. In some persons, especially young children and the elderly, the diarrhea can be so severe the patient needs to be hospitalized. A severe infection with high fever also may be associated with seizures in children younger than 2 years of age. Some persons who are infected may have no symptoms at all, but may still pass the Shigella bacteria to others.

## What sort of germ is Shigella?

The Shigella germ is actually a family of bacteria that can cause diarrhea in humans. These microscopic living creatures, which can pass from person to person, were discovered 100 years ago by a Japanese scientist named Shiga, for whom they are named. There are several kinds of Shigella bacteria but only two are common in the United States.

# How are Shigella infections diagnosed?

Many different kinds of diseases can cause diarrhea and bloody diarrhea. Effective treatment depends on which germ is causing the diarrhea. Determining that Shigella is the cause of the illness depends on laboratory tests that identify the bacteria in the stools of infected persons. These tests are sometimes not performed unless the laboratory is instructed specifically to look for the organism. The laboratory also can do special tests to tell which type of Shigella the person has and which antibiotics, if any, would be best to treat it.

# How common is shigellosis?

Every year, about 18,000 laboratory confirmed cases of shigellosis are reported in the United States; 1,300 in Illinois. Because many milder cases are not diagnosed or reported, the actual number of infections may be 20 times greater. Shigellosis is particularly common and causes recurrent problems in settings where hygiene is poor and can sometimes sweep through entire communities. Shigellosis is more common in summer than winter. Children, especially toddlers from 2 to 4 years of age, are the most likely to get shigellosis. Many cases are related to the spread of illness in child care settings and many more are the result of the spread of the illness in families with small children. In the developing world, shigellosis is far more common and is present in most communities most of the time.

# How are Shigella infections treated?

Shigellosis can usually be treated with antibiotics. The most commonly used antibiotics are ampicillin, trimethoprim/sulfamethoxazole, nalidixic acid or ciprofloxacin. Appropriate treatment kills the Shigella bacteria that might be present in a patient's stools and shortens the illness. Unfortunately, some Shigella bacteria have become resistant to antibiotics and using antibiotics to treat shigellosis

can actually make the germs more resistant in the future. Persons with mild infections will usually recover quickly without antibiotic treatment. Therefore, when many persons in a community are affected by shigellosis, antibiotics are sometimes used selectively to treat only the more severe cases. Antidiarrheal agents (e.g., loperamide or diphenoxylate with atropine) are likely to make the illness worse and should be avoided.

## Does shigellosis have any long-term effects?

Persons with diarrhea usually recover completely, although it may be several months before their bowel habits are entirely normal. About 3 percent of persons who are infected with one type of Shigella (Shigella flexneri) will later develop pains in their joints, irritation of the eyes and painful urination. This is called Reiter's syndrome and it can last for months or years, sometimes leading to chronic arthritis, which is difficult to treat. Reiter's syndrome is caused by a reaction to Shigella infection that happens only in people who are genetically predisposed to it. Once someone has shigellosis, they are not likely to get infected with that specific type again for at least several years. However, they can still get infected with other types of Shigella.

## How do people catch shigellosis?

The Shigella bacteria pass from one infected person to the next. The bacteria are present in the diarrheal stools of infected person while they are sick and for a week or two afterwards. Most infections occur when the germ passes from the stool or soiled fingers of one person to the mouth of another person. This happens when basic hygiene and handwashing habits are inadequate. It is particularly likely to occur among toddlers who are not fully toilet trained. Family members and playmates of such children are at high risk of becoming infected.

Shigella infections also may be acquired from eating contaminated food. Contaminated food may look and smell normal. Food may become contaminated by infected food handlers who forget to wash their hands with soap and water after using the bathroom. Vegetables can become contaminated if they are harvested from a field with sewage in it. Flies can breed in infected feces and then contaminate the food. Shigella infections also can be acquired by drinking or swimming in contaminated water. Water may become contaminated if sewage runs into it or if someone with shigellosis swims in it.

# What can a person do to prevent this illness?

There is no vaccine to prevent shigellosis. However, the spread of Shigella from an infected person to other persons can be stopped by careful handwashing with soap and water. Frequent, supervised handwashing of all children should be followed in day care centers and in homes with young children (including children in diapers). When possible, young children with a Shigella infection who are still in diapers should not be in contact with uninfected children.

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## Skin Cancer

#### What is Skin Cancer?

Skin cancer is the most common form of cancer in the United States. More than 90 percent of skin cancers are caused by sun exposure. Skin cancers are divided into two major groups: nonmelanoma and melanoma.

Nonmelanoma skin cancers (usually basal cell and squamous cell) are the most common cancers of the skin. Nonmelanoma skin cancer develops from all types of skin cells except melanocytes.

Melanoma is almost always curable in its early stages, but is likely to spread to other parts of the body when left untreated. Melanoma is much less common than basal cell and squamous cell skin cancers, but it is much more serious.

Facts: The number of new skin cancer cases and deaths from skin cancer are rising. The national mortality rate for melanoma has increased by 44 percent since 1973. According to the Illinois State Cancer Registry, in 2008, about 1,900 new cases of melanoma will be diagnosed in Illinois. In 2008, about 360 deaths due to melanoma are expected in Illinois.

#### What are the Causes and Risk Factors of Skin Cancer?

Most basal cell and squamous cell skin cancers are caused by ultraviolet (UV) radiation produced by the sun, but other risk factors also are linked to these skin cancers. Risk factors listed below can increase the risk for skin cancer.

Ultraviolet radiation: Too much exposure to UV radiation is a risk factor for skin cancer. The main source of such radiation is sunlight and tanning lamps and booths.Race: People with fair skin, freckling or red or blond hair have a higher risk. The risk of skin cancer is much higher for whites than for dark-skinned African Americans.Moles: Certain types of moles, including some large moles, increase the chance of getting melanoma.Family history: People with a family history of skin cancer are at increased risk. A person who has already had melanoma is at a higher risk of getting another melanoma.Exposure to chemicals: Exposure to large amounts of arsenic, a heavy metal used in making some insecticides, increases the risk of nonmelanoma skin cancer.Radiation: Radiation treatment increases the risk of developing nonmelanoma skin cancer in the area that was treated.Gender: Men are more likely to develop skin cancer than women.Age: More than 50 percent of all melanomas occur in people older than 50 years of age.

# What are the Symptoms of Skin Cancer?

Skin cancers often do not cause symptoms until they become quite large; then they can bleed or even hurt. Melanoma can occur anywhere on the body. It is important to know the difference between melanoma and a harmless mole.

The ABCD rule can help determine whether a mole is normal or a melanoma. If a mole has the following characteristics, it might be a melanoma:

A: asymmetry – one half of the mole does not match the other half.B: border irregularity – the edges of the mole are ragged or notched.C: color – the color of the mole is not the same all over. There may be shades of tan, brown, or black, and sometimes patches of red, blue or white.D: diameter – the mole is wider than about one-fourth of an inch.

It is important to report any of these symptoms to a doctor.

#### **How to Prevent Skin Cancer**

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Sexually Transmitted Diseases (STD)

# **Sexually Transmitted Diseases (STD)**

Sexually Transmitted Diseases (STDs) are some of the most commonly reported diseases in the United States. It is estimated that there are almost 20 million new STD infections each year in the United States. Of these new infections, half are among young people age 15-24. Many STDs can be easily diagnosed and treated. It is common that many people will not have any symptoms when they are infected with an STD. This makes screening for STDs important to prevent serious health problems from untreated STD infections. Ways to protect yourself from getting an STD are:

If you have questions or would like to speak to a hotline resource counselor, please call the HIV/STD Hotline at 1-800-243-2437.

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## Stomach Cancer

#### What is Stomach Cancer?

Stomach (gastric) cancer starts in the stomach, a sack-like organ that holds food and begins the digestion process. Cancer can start in any part of the stomach.

The stomach has five layers. As cancer grows deeper into the layers, the prognosis for the patient gets worse. Starting from the inside, the innermost layer is called the mucosa.

Next is a supporting layer called the submucosa which is surrounded by the muscularis, a layer of muscle that moves and mixes the stomach contents. The next two layers, the subserosa and the serosa (the outermost) layer, act as wrapping for the stomach. Stomach cancer usually starts in the mucosa (adenocarcinoma).

Facts: According to the Illinois State Cancer Registry, in 2008, about 990 new cases of stomach cancer will be diagnosed in Illinois. Of these, about 620 will be in men and about 370 will be in women. About 610 Illinoisans are expected to die of stomach cancer in 2008.

#### What are the Causes and Risk Factors of Stomach Cancer?

Scientists have found several risk factors that make a person more likely to develop stomach cancer. The major risk factors include:

Bacteria infection: Infection with bacteria (Helicobacter pylori) may be a major cause of stomach cancer. Long-term infection with these bacteria can lead to inflammation and damage of the inner layer of the stomach. This bacterium is also linked to some types of lymphoma of the stomach, but most people with this bacterium never develop cancer. Tobacco: Smoking almost doubles the risk of stomach cancer.Diet: An increased risk of stomach cancer is linked to diets high in smoked foods, salted fish and meats and pickled vegetables. Eating whole grain products and fresh fruits and vegetables that contain vitamins A and C appears to lower the risk of stomach cancer. Obesity: Being overweight (excess body fat) or obese (abnormally high, unhealthy amount of body fat) is a major risk factor of many cancers, including cancer of the stomach. Stomach surgery: Stomach cancer is more likely to occur in people who have had part of their stomach removed. Type A blood: For unknown reasons, people with type A blood have a higher risk for stomach cancer. Stomach polyps: Polyps are small mushroom-like growths on the lining of the stomach. Most types of polyps do not increase the risk of stomach cancer. One type, adenomatous polyps, sometimes develops into stomach cancer. Gender: Stomach cancer is more than twice as common in men. Ethnicity: The rate of stomach cancer is higher in Hispanics and African Americans than in non-Hispanic whites. The highest rates are seen in Asian/Pacific Islanders.Age: Stomach cancer is most often diagnosed after the age of 50. Family history: People with several close relatives who have had stomach cancer are more likely to develop this disease. Scientists are trying to learn how and why certain changes take place in the lining of the stomach and what part Helicobacter pylori play in stomach cancer.

# What are the Symptoms of Stomach Cancer?

Stomach cancer can be difficult to find early. Often there are no symptoms in the early stages and in many cases the cancer has spread before it is found. When symptoms do occur, they are often so vague that the person ignores them. The common symptoms include:

Many of these symptoms can be caused by conditions other than cancer. It is important to report any of these symptoms to a doctor.

#### **How to Prevent Stomach Cancer**

Even though the exact cause of stomach cancer is unknown, it is still possible to prevent many cases. Finding it early may be the best way to improve the chance of successful treatment and to reduce the number of deaths caused by the disease.

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# **Stress**

#### What is stress?

# Who copes best with stress?

Some people cope well with stress. Generally, they share certain characteristics and common traits:

What are some helpful tips to manage stress?

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Heart & Stroke

# **Stroke**

Stroke is a disease that affects the arteries leading to and within the brain. It is the number five cause of death and a leading cause of disability in the United States.

A stroke occurs when a blood vessel that carries oxygen and nutrients to the brain is either blocked by a clot or bursts (or ruptures). When that happens, part of the brain cannot get the blood (and oxygen) it needs and brain cells begin to die.

## F.A.S.T Warning Signs

Use the letters in F.A.S.T. to spot a stroke

## Other Stroke Symptoms

Watch for sudden:

# What are the types of stroke?

Stroke can be caused either by a clot obstructing the flow of blood to the brain (called an ischemic stroke) or by a blood vessel rupturing and preventing blood flow to the brain (called a hemorrhagic stroke). A TIA (transient ischemic attack), or "mini stroke," is caused by a temporary clot. Brain stem and cryptogenic strokes are also listed as types of strokes.

#### What is an ischemic stroke?

An ischemic stroke occurs when a vessel supplying blood to the brain is obstructed. It accounts for about 87% of all strokes.

The main cause of ischemic stroke is atherosclerosis, or fatty deposits (plaque) that line the vessel walls. Fatty deposits can cause two types of obstruction:

#### What is hemorrhagic stroke?

Hemorrhagic strokes make up about 13% of stroke cases. They occur when a weakened vessel ruptures and bleeds into the surrounding brain. The blood accumulates and compresses the surrounding brain tissue.

The two types of hemorrhagic strokes are intracerebral hemorrhage (within the brain) or subarachnoid hemorrhage (between the inner and outer layers of the tissue covering the brain).

#### Arteriovenous malformation (AVM)

Normally, arteries carry blood containing oxygen from the heart to the brain, and veins carry blood with less oxygen away from the brain and back to the heart. When an arteriovenous malformation (AVM) occurs, a tangle of blood vessels in the brain bypasses normal brain tissue and directly diverts blood from the arteries to the veins.

#### Cerebral aneurysm

A cerebral aneurysm is a weak area in a blood vessel that usually enlarges. It's often described as a "ballooning" of the blood vessel. It could also be called a brain aneurysm or intracranial aneurysm. Cerebral aneurysms can rupture and cause bleeding within the brain or surrounding area.

#### What is a transient ischemic attack (TIA)?

A transient ischemic attack, or TIA, is a temporary blockage of blood flow to the brain. The clot usually dissolves on its own or gets dislodged, and the symptoms usually last less than five minutes.

While a TIA doesn't cause permanent damage, it's a "warning stroke" signaling a possible full-blown stroke ahead. When you first notice symptoms, get help immediately, even if symptoms go away.

TIA is a medical emergency with the same symptoms as ischemic and hemorrhagic strokes. Most TIA symptoms last from only a few minutes but can last up to 24 hours. They are often dismissed and not taken seriously.

TIAs, which occur before about 15% of strokes, are considered "warning strokes" — they are associated with additional TIAs, full-blown strokes, or other cardiovascular problems later. Most of these later health problems happen within just days or weeks of the TIA, so early interventions to reduce risk are vital.

#### What is a brain stem stroke?

Brain stem strokes can have complex symptoms and can be hard to diagnose. A person may have vertigo, dizziness, and severe imbalance without the hallmark of most strokes. They may have weakness on one side of the body. Vertigo dizziness symptoms or imbalance usually occur together; dizziness alone is not a sign of stroke. A brain stem stroke can also cause double vision, slurred speech, and decreased consciousness.

Only a half-inch in diameter, the brain stem controls all basic activities of the central nervous system: consciousness, blood pressure, and breathing. All motor control for the body flows through it. Brain stem strokes can impair any or all these functions. More severe brain stem strokes can cause locked-in syndrome, a condition in which survivors can move only their eyes.

If a stroke in the brain stem results from a clot, the faster blood flow can be restored, the better the chances for recovery.

Like all strokes, brain stem strokes produce a wide spectrum of deficits and recovery. Whether a survivor has minor or severe deficits depends on the location of the stroke within the brain stem, the extent of injury, and how quickly treatment is provided.

Risk factors for brain stem stroke are the same as for strokes in other areas of the brain: high blood pressure, diabetes, heart disease, atrial fibrillation, and smoking. Similarly, brain stem strokes can be caused by a clot or a hemorrhage. Rare causes include injury to an artery due to sudden head or neck movements.

Recovery is possible. Because brain stem strokes don't usually affect language ability, the patient is often able to participate more fully in rehabilitation. Double vision and vertigo usually resolve after several weeks of recovery in mild to moderate brain stem strokes.

#### What is a cryptogenic stroke?

In most cases, a blood clot that blocks blood flow to the brain causes a stroke. But in some instances, the cause can't be determined. Strokes without a known cause are called cryptogenic.

About 1 in 4 stroke survivors will likely have another stroke. That's why it's important for a health care team to find a definitive diagnosis and potential risk factors to provide targeted treatment to prevent recurrent strokes. So be sure to work with your health care team.

The information and resources below are for you and your loved ones to partner with your health care team and find answers about cryptogenic stroke.

It's estimated that about 1 in 3 ischemic strokes are cryptogenic.

Some studies suggest that the incidence of cryptogenic stroke is higher in African Americans (two times more likely) and Hispanics (46% more likely).

#### Possible hidden causes of stroke

## **Managing Risky Conditions**

Atherosclerosis: Atherosclerosis can lead to two types of ischemic stroke.

Atherothrombotic stroke is the most common. Sometimes, plaque in a blood vessel breaks. Blood clots can form where the plaque ruptures. These clots can become large, reducing or blocking blood flow. When blood flow to the brain is blocked, a stroke occurs.

Sometimes a blood clot or other particle breaks away from the rupture site. The bloodstream carries that wandering clot or particle (called an embolus). When it lodges, blocking blood flow in an artery leading to or in the brain, it results in an embolic stroke. However, most embolic strokes are from blood clots that form due to atrial fibrillation and then enter the bloodstream.

#### Risk factors for atherosclerosis

Males and people with a family history of premature cardiovascular disease have an increased risk of atherosclerosis. Other risk factors include:

Atrial fibrillation: Atrial fibrillation is a quivering or irregular heartbeat, or arrhythmia. Atrial fibrillation, also known as AFib or AF, can lead to blood clots, stroke, heart failure, and other heart-related complications. More than 12 million people are projected to have AFib by 2030.

High blood pressure: High blood pressure is when blood flows with too much force, putting more pressure on the arteries. This excess pressure stretches the arteries beyond a healthy limit and can cause small tears. The body then kicks into an injury-healing mode to repair the tears with scar tissue. But the scar tissue traps substances that form plaque and can lead to blockages, blood clots, and hardened, weakened arteries. Several factors can increase your risk of high blood pressure, including family history, age, lack of physical activity, poor diet, social determinants, gender-related risk patterns, obesity and drinking too much alcohol.

#### Social Determinants of Health (SDoH) and Risk Factors

Health equity: Everyone should have an optimal, just opportunity to be healthy. But this is not the reality for many people of color and others whose health suffers because of social factors beyond their control. People suffer when they lack access to quality care, nutritious food, and other basic health needs.

SDoH and stroke risk: The cumulative effect of several social factors can more than double the risk of stroke in people under 75 years of age. Research has examined the impact of living in a poor or rural area, having low education or income level, being Black, or lacking health insurance.

Environment, culture and other SDoH roles in heart health: SDoH influence where and how people live, learn, work, and play. They provide context to a person's life. They can play just as big a role in affecting health as medications and physical lifestyle changes.

#### Sources

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Sexually Transmitted Diseases (STD)

# **Syphilis**

## What is syphilis?

Syphilis is a sexually transmitted disease (STD) caused by the bacterium Treponema pallidum. Syphilis can cause long-term complications and/or death if not adequately treated.

## How common is syphilis?

During 2011, there were 46,042 new cases of syphilis, of which 13,970 were of primary and secondary (P&S;) syphilis, the earliest and most transmissible stages of syphilis. During the 1990s, syphilis primarily occurred among heterosexual men and women of racial and ethnic minority groups; during the 2000s, however, cases increased among men who have sex with men (MSM). In 2002, rates of P&S; syphilis were highest among men 30–39 years old, but by 2011, were highest among men 20–29 years old. This epidemiologic shift reflects increasing cases reported among young MSM in recent years. MSM accounted for 72 percent of all P&S; syphilis cases in 2011.

Black, Hispanic, and other racial/ethnic minorities are disproportionately affected by P&S; syphilis in the United States, with black Americans accounting for most of P&S; syphilis among individuals who are not MSM.

While the rate of congenital syphilis (syphilis passed from pregnant women to their babies) has decreased in recent years, more cases of congenital syphilis are reported in the United States than cases of perinatal HIV infection. During 2011, 360 cases of congenital syphilis were reported, compared to an estimated 162 cases of perinatal HIV infection during 2010. Congenital syphilis rates were 15.0 times and 3.5 times higher among infants born to black and Hispanic mothers (33.0 and 7.6 cases per 100,000 live births, respectively) compared to white mothers (2.2 cases per 100,000 live births).

# How is syphilis spread?

Syphilis is transmitted from person to person by direct contact with a syphilitic sore, known as a chancre. Chancres occur mainly on the external genitals, vagina, anus or in the rectum. Chancres also can occur on the lips and in the mouth. Transmission of syphilis occurs during vaginal, anal or oral sex. Pregnant women with the disease can transmit it to their unborn child.

# How quickly do symptoms appear after infection?

The average time between infection with syphilis and the start of the first symptom is 21 days, but can range from 10 days to 90 days.

# What are the symptoms of syphilis?

# **Primary Stage**

The appearance of a single chancre marks the primary (first) stage of syphilis symptoms, but there may be multiple sores. The chancre is usually firm, round and painless. It appears at the location where syphilis entered the body. Possibly because these painless chancres can occur in locations that make them difficult to find (e.g., the vagina or anus), smaller proportions of MSM and women are diagnosed in primary stage than men having sex with women only. The chancre lasts three weeks to six weeks and heals regardless of whether a person is treated or not. However, if the infected person does not receive adequate treatment, the infection progresses to the secondary stage.

#### Secondary Stage

Skin rashes and/or mucous membrane lesions (sores in the mouth, vagina or anus) mark the second stage of symptoms. This stage typically starts with the development of a rash on one or more areas of the body. Rashes associated with secondary syphilis can appear when the primary chancre is healing or several weeks after the chancre has healed. The rash usually does not cause itching. The characteristic rash of secondary syphilis may appear as rough, red or reddish brown spots both on the palms of the hands and the bottoms of the feet. However, rashes with a different appearance may occur on other parts of the body, sometimes resembling rashes caused by other diseases. Sometimes rashes associated with secondary syphilis are so faint that they are not noticed. Large, raised, gray or white lesions, known as condyloma lata, may develop in warm, moist areas such as the mouth, underarm or groin region. In addition to rashes, symptoms of secondary syphilis may include fever, swollen lymph glands, sore throat, patchy hair loss, headaches, weight loss, muscle aches, and fatigue. The symptoms of secondary syphilis will go away with or without treatment, but without treatment, the infection will progress to the latent and possibly late stages of disease.

#### Late and Latent Stages

The latent (hidden) stage of syphilis begins when primary and secondary symptoms disappear. Without treatment, the infected person will continue to have syphilis infection in their body even though there are no signs or symptoms. Early latent syphilis is latent syphilis where infection occurred within the past 12 months. Late latent syphilis is latent syphilis where infection occurred more than 12 months ago. Latent syphilis can last for years.

The late stages of syphilis can develop in about 15percent of people who have not been treated for syphilis, and can appear 10 years to 20 years after infection was first acquired. In the late stages of syphilis, the disease may damage the internal organs, including the brain, nerves, eyes, heart, blood vessels, liver, bones, and joints. Symptoms of the late stage of syphilis include difficulty coordinating muscle movements, paralysis, numbness, gradual blindness, and dementia. This damage may be serious enough to cause death.

# Neurosyphilis

Syphilis can invade the nervous system at any stage of infection, and causes a wide range of symptoms varying from no symptoms at all, to headache, altered behavior, and movement problems that look like Parkinson's or Huntington's disease. This invasion of the nervous system is called "neurosyphilis."

Note: Health departments report syphilis by its stage of infection, noting "neurological manifestations," rather than using the term neurosyphilis.

# HIV infection and syphilis symptoms

Individuals who are HIV-positive can develop symptoms very different from the symptoms described above, including hypopigmented skin rashes. HIV can increase the chances of developing syphilis with neurological involvement.

## How does syphilis affect a pregnant woman?

The syphilis bacterium can infect the baby of a woman during her pregnancy. All pregnant women should be tested for syphilis at the first prenatal visit. The syphilis screening test should be repeated during the third trimester (28 weeks to 32 weeks gestation) and at delivery in women who are at high risk for syphilis, live in areas of high syphilis morbidity, are previously untested, or had a positive screening test in the first trimester.

Depending on how long a pregnant woman has been infected, she may have a high risk of having a stillbirth (a baby born dead) or of giving birth to a baby who dies shortly after birth; untreated syphilis in pregnant women results in infant death in up to 40 percent of cases. Any woman who delivers a stillborn infant after 20 week's gestation should be tested for syphilis. An infected baby born alive may not have any signs or symptoms of disease. However, if not treated immediately, the baby may develop serious problems within a few weeks. Untreated babies may become developmentally delayed, have seizures, or die. All babies born to mothers who test positive for syphilis during pregnancy should be screened for syphilis and examined thoroughly for evidence of congenital syphilis.

For pregnant women only penicillin therapy can be used to treat syphilis and prevent passing the disease to her baby; treatment with penicillin is extremely effective (success rate of 98percent) in preventing mother-to-child transmission. Pregnant women who are allergic to penicillin should be referred to a specialist for desensitization to penicillin.

## How is syphilis diagnosed?

The definitive method for diagnosing syphilis is visualizing the spirochete via darkfield microscopy. This technique is rarely performed today because it is a technologically difficult method. Diagnoses are thus more commonly made using blood tests. There are two types of blood tests available for syphilis: 1) nontreponemal tests and 2) treponemal tests.

Nontreponemal tests (e.g., VDRL and RPR) are simple, inexpensive, and are often used for screening. However, they are not specific for syphilis, can produce false-positive results, and, by themselves, are not sufficient for diagnosis. VDRL and RPR should each have their antibody titer results reported quantitatively. Persons with a reactive nontreponemal test should receive a treponemal test to confirm a syphilis diagnosis. This sequence of testing (nontreponemal, then treponemal test) is considered the "classical" testing algorithm.

Treponemal tests (e.g., FTA-ABS, TP-PA, various EIAs, and chemiluminescence immunoassays) detect antibodies that are specific for syphilis. Treponemal antibodies appear earlier than nontreponemal antibodies and usually remain detectable for life, even after successful treatment. If a treponemal test is used for screening and the results are positive, a nontreponemal test with titer should be performed to confirm diagnosis and guide patient management decisions. Based on the results, further treponemal testing may be indicated. For further guidance, please refer to the 2010 STD Treatment Guidelines. This sequence of testing (treponemal, then nontreponemal, test) is considered the "reverse" sequence testing algorithm. Reverse sequence testing can be more convenient for laboratories, but its clinical interpretation is problematic, as this testing sequence can identify individuals not previously described (e.g., treponemal test positive, nontreponemal test negative), making optimal management choices difficult.

Special note: Because untreated syphilis in a pregnant woman can infect and possibly kill her developing baby, every pregnant woman should have a blood test for syphilis. All women should be screened at their first prenatal visit. For patients who belong to communities and populations with high prevalence of syphilis and for patients at high risk, blood tests should be performed during the third trimester (at 28–32 weeks) and at delivery. For further information on screening guidelines, please refer to the 2010 STD Treatment Guidelines.

All infants born to mothers who have reactive nontreponemal and treponemal test results should be evaluated for congenital syphilis. A quantitative nontreponemal test should be performed on infant serum and, if reactive, the infant should be examined thoroughly for evidence of congenital syphilis. Suspicious lesions, body fluids, or tissues (e.g., umbilical cord, placenta) should be examined by darkfield microscopy and/or special stains. Other recommended evaluations may include analysis of cerebrospinal fluid by VDRL, cell count and protein, CBC with differential and platelet count, and long-bone radiographs. For further guidance on evaluation of infants for congenital syphilis, please refer to the 2010 STD Treatment Guidelines.

## Who should be tested for syphilis?

Any person with signs or symptoms of primary infection, secondary infection, neurologic infection, or tertiary infection should be tested for syphilis. Providers should routinely test persons who:

## What is the link between syphilis and HIV?

Genital sores caused by syphilis make it easier to transmit and acquire HIV infection sexually. There is an estimated two- to five-fold increased risk of acquiring HIV if exposed to that infection when syphilis is present.

Ulcerative STDs that cause sores, ulcers or breaks in the skin or mucous membranes, such as syphilis, disrupt barriers that provide protection against infections. The genital ulcers caused by syphilis can bleed easily, and when they come into contact with oral and rectal mucosa during sex, increase the infectiousness of and susceptibility to HIV. Studies have observed that infection with syphilis was associated with subsequent HIV infection among MSM.

Having other STDs can indicate increased risk for becoming HIV infected

# How is syphilis treated?

There are no home remedies or over-the-counter drugs that will cure syphilis, but syphilis is easy to cure in its early stages. A single intramuscular injection of long acting Benzathine penicillin G(2.4 million units administered intramuscularly) will cure a person who has primary, secondary or early latent syphilis. Three doses of long acting Benzathine penicillin G (2.4 million units administered intramuscularly) at weekly intervals is recommended for individuals with late latent syphilis or latent syphilis of unknown duration. Treatment will kill the syphilis bacterium and prevent further damage, but it will not repair damage already done.

Selection of the appropriate penicillin preparation is important to properly treat and cure syphilis. Combinations of some penicillin preparations (e.g., Bicillin C-R, a combination of benzathine penicillin and procaine penicillin) are not appropriate treatments for syphilis, as these combinations provide inadequate doses of penicillin.

Although data to support the use of alternatives to penicillin is limited, options for non-pregnant patients who are allergic to penicillin may include doxycycline, tetracycline, and for neurosyphilis, potentially probenecid. These therapies should be used only in conjunction with close clinical and laboratory follow-up to ensure appropriate serological response and cure.

Persons who receive syphilis treatment must abstain from sexual contact with new partners until the syphilis sores are completely healed. Persons with syphilis must notify their sex partners so that they also can be tested and receive treatment if necessary.

# Will syphilis recur or "come back?"

Syphilis does not recur. However, having syphilis once does not protect a person from becoming infected again. Even following successful treatment, people can be re-infected. Patients with signs or symptoms that persist or recur or who have a sustained fourfold increase in nontreponemal test titer probably failed treatment or were reinfected. These patients should be retreated.

Because chancres can be hidden in the vagina, rectum or mouth, it may not be obvious that a sex partner has syphilis. Unless a person knows that their sex partners have been tested and treated, they may be at risk of being reinfected by an untreated partner. For further details on the management of sex partners, refer to the 2010 STD Treatment Guidelines.

## How can syphilis be prevented?

Correct and consistent use of latex condoms can reduce the risk of syphilis only when the infected area or site of potential exposure is protected. However, a syphilis sore outside of the area covered by a latex condom can still allow transmission, so caution should be exercised even when using a condom. For persons who have latex allergies, synthetic non-latex condoms can be used but it is important to note that they have higher breakage rates than latex condoms. Natural membrane condoms are not recommended for STD prevention. Other individual-based interventions, such as the use of microbicide or male circumcision, do not prevent syphilis.

The surest way to avoid transmission of sexually transmitted diseases, including syphilis, is to abstain from sexual contact or to be in a long-term mutually monogamous relationship with a partner who has been tested and is known to be uninfected.

Partner-based interventions include partner notification – a critical component in preventing the spread of syphilis. Sexual partners of infected patients should be considered at risk and provided treatment per the 2010 STD Treatment Guidelines.

Transmission of an STD, including syphilis, cannot be prevented by washing the genitals, urinating, and/or douching after sex. Any unusual discharge, sore or rash, particularly in the groin area, should be a signal to refrain from having sex and to see a doctor immediately.

Avoiding alcohol and drug use may help prevent transmission of syphilis because these activities may lead to risky sexual behavior. It is important that sex partners talk to each other about their HIV status and history of other STDs so that preventive action can be taken.

IDPH HIV/STD Hotline 800-243-2437 (TTY 800-782-0423)

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Infectious Diseases

# **Tuberculosis (TB)**

#### What is tuberculosis?

Tuberculosis (TB) is a contagious and potentially life-threatening disease transmitted through the air. While it can affect any part of the body (such as the brain, the kidneys or the spine), TB usually affects the lungs. When first infected with the TB germ, people usually do not feel sick or have any symptoms. However, they may develop active TB disease in the future.

Although both preventable and curable, tuberculosis once was the leading cause of death in the United States. Today in Illinois, less than 30 deaths a year are attributed to tuberculosis and the number of cases in the state has fallen more than 40 percent in the past 10 years, reaching an all-time low of 320 in 2014.

#### What is the difference between TB infection and TB disease?

People with TB infection have the TB germ in their bodies but are not sick because the germs are inactive and, therefore, cannot be spread to others. Because these people may develop the disease in the future, they often are given preventive treatment.

People with TB disease are sick from the germs that are active in their bodies. They exhibit symptoms (cough, fatigue, night sweats, unexplained weight loss, etc.) of the disease and, if they have TB of the lungs or throat, can spread the disease to others. Physicians can prescribe drugs to cure TB.

# Are some people at greater risk of getting TB?

Although anyone may get TB, the following people are at higher risk:

# How serious is the problem among minorities?

TB disproportionately affects racial and ethnic minority groups. This is particularly true among children. In the U.S., more than 80 percent of childhood cases of TB occur in minority groups. Overall, from 1985 through 1993, TB cases increased among non-Hispanic blacks by 18 percent, among Asians and Pacific Islanders by 48 percent and among Hispanics by 67 percent. In contrast, cases among non-Hispanic whites decreased by 18 percent.

# What are the symptoms of TB disease?

The general symptoms of TB disease include feeling sick or weak, weight loss, fever and night sweats. TB of the lungs causes the general symptoms plus coughing, sometimes producing blood, and chest pain. Other symptoms depend on the part of the body that is affected.

# How is TB spread?

TB is spread from person to person through the air. When people with TB disease of the lungs or throat cough or sneeze, they can put TB germs into the air. Then other people who breathe in the air

containing these germs can become infected. People with TB disease are most likely to spread it to people with whom they spend time with every day, such as family members or coworkers. (Remember, though, a person must have active TB disease to spread it; persons who are infected but do not have the disease cannot spread TB to others.) If a person thinks he or she has been in close contact with someone with TB disease, it is important to go to a clinic or health department for a TB skin test.

## How is a person tested for TB?

The tuberculin skin test is used to find out whether a person is infected with the TB germ. It does not tell whether the person has TB disease. For the skin test, a small amount of fluid--called tuberculin--is injected under the skin in the lower part of the arm. Two or three days later, a health care worker checks the site of the injection to see if there has been a reaction.

TB blood test ( also known as interferon –gamma release assays or IGRAs) are also used to determine if an individual's immune system has been exposed to TB, and measures how the immune system responds to the TB germ. The Food and Drug Administration has approved two TB blood tests, QuantiFERON® and T-SPOT®. TB blood tests are the preferred method of testing for persons that have received bacilli Calmette-Guerin(BCG), and persons who may have a difficult time returning for a follow-up visit to review their bodies response to the tuberculin skin test.

## What does a positive reaction mean?

A positive reaction to the tuberculin skin test and TB blood test usually means that the person has been infected with the TB germ. It does not necessarily mean that the person has TB disease. Other tests, such as a chest X-ray and a sample of sputum, are needed to see whether the person has TB disease.

#### How is TB disease treated?

TB disease can be cured by taking several drugs for six to nine months. It is very important that people who have TB disease take the drugs exactly as prescribed. If a person stops taking the drugs too soon or if the drugs are not taken correctly, the germs that are still alive may become resistant to the drugs. This makes the disease much harder to treat. Generally, after the first several weeks of drug therapy, most TB patients become non-infectious.

#### How is TB infection treated?

The primary drug used to prevent TB infection from developing into TB disease is isoniazid. It must be taken for six to 12 months. The drug may cause liver problems in certain people, especially older individuals and people with liver disease. Therefore, people who are taking isoniazid should be monitored carefully for signs of adverse reactions.

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# **Testicular Cancer**

#### What is Testicular Cancer?

Testicular cancer typically develops in one or both testicles in men. It is a treatable and usually curable form of cancer. It generally affects those between 15 and 40 years of age.

Facts: - According to the Illinois State Cancer Registry, in 2008, about 350 new cases of testicular cancer will be diagnosed in Illinois. About 20 Illinoisans are expected to die of testicular cancer in 2008.

#### What are the Causes and Risk Factors of Testicular Cancer?

The cause of testicular cancer is largely unknown but scientists have found a few risk factors. However, most men with testicular cancer do not have any of the known risk factors, which include:

Cryptorchidism: The main risk factor for testicular cancer is a condition called cryptorchidism, or undescended testicle(s). In a fetus, the testicles normally develop inside the abdomen and descend into the scrotum before birth. Family history: A family history of testicular cancer increases the risk for developing it. Multiple atypical nevi: Two recent studies by the American Cancer Society have shown that an unusual condition where multiple pigmented spots or moles are found particularly on the back, chest, abdomen and face, is associated with an increased risk of developing testicular cancer.HIV infection: Some studies have shown men infected with the Human Immunodeficiency Virus (HIV), particularly those with Acquired Immune Deficiency Syndrome (AIDS), are at increased risk. Cancer of the other testicle: A history of testicular cancer is another risk factor. Men who have been cured of cancer in one testicle have an increased risk of eventually developing cancer in the other testicle. Age: Most testicular cancers occur between the ages of 15 and 40. However, this cancer can affect males of any age, including infants and elderly men.Race and ethnicity: The risk of testicular cancer among white men is about five to 10 times that of African-American men and more than twice that of Asian-American men. The risk for Hispanics is between that of Asians and non-Hispanic whites. Body size: A recent study from Sweden identified body size as a risk factor. The highest risk was seen in tall, slim men. The health benefits of being slim, however, outweigh any concern about testicular cancer.

# What are the Symptoms of Testicular Cancer?

Common symptoms of testicular cancer include:

Some types may produce androgens (male sex hormones) or estrogens (female sex hormones). Estrogen-producing tumors in men may cause breast growth and/or loss of sexual desire. Androgen-producing tumors may not cause any specific symptoms in men, but in boys they can cause growth of facial and body hair at an abnormally early age.

In some cases the testicular cancer is found during medical testing for other conditions. Sometimes imaging tests done to find the cause of infertility can uncover a small testicular cancer. A number of noncancerous conditions, such as testicle injury, can produce symptoms similar to those of testicular cancer. It is important to report any of these symptoms to a doctor.

# **How to Prevent Testicular Cancer**

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## **Tetanus**

#### What is tetanus?

Tetanus is a serious disease caused by a toxin (poison) made by bacteria. It causes painful muscle stiffness and can be deadly. The DTaP and Tdap vaccines prevent tetanus.

## What are the symptoms of tetanus?

Tetanus in children starts with headache, jaw cramping, and muscle spasms (sudden, involuntary muscle tightening). It also causes the following: Painful muscle stiffness all over the body

Tetanus is often called "lockjaw" because the jaw muscles tighten, and the person cannot open his mouth.

#### How serious is tetanus?

Tetanus is very dangerous. It can cause breathing problems and paralysis (unable to move parts of the body). Muscle spasms can be strong enough to break a child's spine or other bones. It can take months to recover fully from tetanus. A child might need weeks of hospital care. As many as one out of five people who get tetanus dies.

# How does a person get tetanus?

The bacteria that cause tetanus are found in soil. They get into the body through a puncture of the skin. A person also can be infected after a burn or an animal bite. Tetanus does not spread from one person to another.

# Can tetanus be prevented?

The best prevention against tetanus is immunization. There are four combination vaccines used to prevent diphtheria, tetanus and pertussis: DTaP, Tdap, DT, and Td. Two of these (DTaP and DT) are given to children younger than 7 years of age, and two (Tdap and Td) are given to older children and adults. Td is a tetanus-diphtheria vaccine given to adolescents and adults as a booster shot every 10 years, or after an exposure to tetanus under some circumstances. Tdap is similar to Td but also contains protection against pertussis. Adolescents 11-18 years of age (preferably at age 11-12 years) and adults 19 through 64 years of age should receive a single dose of Tdap. For adults 65 and older who have close contact with an infant and have not previously received Tdap, one dose should be received. Tdap also should be given to 7-to10-year-olds who are not fully immunized against pertussis. Tdap can be given no matter when Td was last received. (Upper-case letters in these abbreviations denote full-strength doses of diphtheria (D) and tetanus (T) toxoids and pertussis (P) vaccine. Lower-case "d" and "p" denote reduced doses of diphtheria and pertussis used in the adolescent/adult-formulations. The "a" in DTaP and Tdap stands for "acellular," meaning that the pertussis component contains only a part of the pertussis organism.)

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# **Thyroid Cancer**

## What is Thyroid Cancer?

Located in the neck just beneath the voice box, the thyroid is a gland which has two types of cells that make hormones. Follicular cells make thyroid hormone, which regulates body temperature, heart rate and energy levels. C cells make calcitonin hormone, which helps control calcium levels in the blood. There are three major forms of thyroid cancer:

Papillary and follicular – account for 80 percent to 90 percent of all thyroid cancer. If detected early, these can be treated successfully. Medullary thyroid carcinoma (MTC) – account for 5 percent to 10 percent of thyroid cancer. This type forms in the C cells and is easier to control if found early before spreading to other parts of the body. MTC in 80 percent of the cases occurs without a family history. An inherited type or familial MTC can be tested for in families with a history of the genetic changes. Anaplastic thyroid carcinoma – is the least common type, accounting for only 1 percent to 2 percent of cases. Starting in the follicular cells, this type grows cancer cells that spread quickly making treatment more difficult.

## What are the Causes and Risks of Thyroid Cancer?

The exact cause of thyroid cancer is unknown. Thyroid cancer occurs more often in women than men, and affects Hispanics and Asian Island Pacific Islanders more often than whites or blacks. A diet lacking iodine is common in follicular thyroid cancers. Iodine is added to table salt and other foods in the United States. In combination with a diet low in iodine, exposure to radiation increases the chances of developing papillary thyroid cancer.

People, who were exposed to high doses of radiation during the 1920s and 1950s as treatment for childhood illnesses, may be at an increased risk of thyroid cancer. Radioactive fallout (survivors of the Chernobyl accident in 1986, and living near nuclear weapons production plants) is another possible cause of thyroid cancer.

Most cases of papillary and follicular thyroid cancer are found in people between the ages of 20 and 60. Primarily, thyroid cancer affects younger people between the ages of 20 and 55. This is atypical since most cancer rates increase with age.

Benign thyroid nodules and thyroid cancers can occur in people of all ages. The five-year survival rate for thyroid cancer is nearly 97 percent.

# What are the Symptoms?

Early thyroid cancer produces no symptoms, but as the cancer grows, symptoms may include:

Be sure to consult with your physician if you experience any of these symptoms. Thyroid cancer can be found early and treated successfully. Detecting a lump and making an appointment with a doctor as soon as possible assures the best way to find the cancer early.

Although exposure to radiation may be a cause of thyroid cancer, radioactive iodine-131 is used to treat thyroid cancer. I-131 can be used to kill the cancerous cells in the thyroid.

# **How to Prevent Thyroid Cancer**

There is no definite way to prevent thyroid cancer because most people with thyroid cancer have no association with the possible risk factors. Genetic testing of familial MTC can be used in families with a history. Families can be screened for the disease and removal of the thyroid can help prevent the development of MTC.

Eating a healthy diet high in fruits and vegetables and low in animal fat, and maintaining a healthy weight can help to prevent many cancers.

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# **Trichomoniasis**

#### What is trichomoniasis?

Trichomoniasis (or "trich") is a very common sexually transmitted disease (STD) that is caused by infection with a protozoan parasite called Trichomonas vaginalis. Although symptoms of the disease vary, most women and men who have the parasite cannot tell they are infected.

#### What causes trichomoniasis?

Trichomoniasis is caused by the single-celled protozoan parasite Trichomonas vaginalis. The vagina is the most common site of infection in women, and the urethra is the most common site of infection in men.

## How do people get trichomoniasis?

The parasite is passed from an infected person to an uninfected person during sex. In women, the most commonly infected part of the body is the lower genital tract (vulva, vagina or urethra), and in men, the most commonly infected body part is the inside of the penis (urethra). During sex, the parasite is usually transmitted from a penis to a vagina, or from a vagina to a penis, but it can be passed from a vagina to another vagina. It is not common for the parasite to infect other body parts, like the hands, mouth or anus. It is unclear why some people with the infection get symptoms while others do not, but it probably depends on factors like the person's age and overall health. Infected people without symptoms can still pass the infection on to others.

# What are the signs and symptoms of trichomoniasis

About 70 percent of infected people do not have any signs or symptoms. When trichomoniasis does cause symptoms, they can range from mild irritation to severe inflammation. Some people with symptoms get them within 5 days to 28 days after being infected, but others do not develop symptoms until much later. Symptoms can come and go. Men with trichomoniasis may feel itching or irritation inside the penis, burning after urination or ejaculation, or some discharge from the penis.

Women with trichomoniasis may notice itching, burning, redness or soreness of the genitals, discomfort with urination, or a thin discharge with an unusual smell that can be clear, white, yellowish or greenish.

Having trichomoniasis can make it feel unpleasant to have sex. Without treatment, the infection can last for months or even years.

# When do symptoms appear?

Symptoms usually appear within 5 days to 28 days of exposure in women.

# What are the complications of trichomoniasis?

Trichomoniasis can increase the risk of getting or spreading other sexually transmitted infections. For example, trichomoniasis can cause genital inflammation that makes it easier to get infected with the HIV virus, or to pass the HIV virus on to a sex partner.

## How does trichomoniasis affect a pregnant woman and her baby?

Pregnant women with trichomoniasis are more likely to have their babies too early (preterm delivery). Also, babies born to infected mothers are more likely be of low birthweight (less than 5.5 pounds).

## How is trichomoniasis diagnosed?

To diagnose trichomoniasis, a health care provider must perform a physical examination and laboratory test. In women, a pelvic examination can reveal small red ulcerations on the vaginal wall or cervix. Laboratory tests are performed on a sample of vaginal fluid or urethral fluid to look for the disease-causing parasite. The parasite is harder to detect in men than in women.

#### Who is at risk for trichomoniasis?

Any sexually active person can be infected with trichomoniasis.

#### What is the treatment for trichomoniasis?

Trichomoniasis can be cured with a single dose of prescription antibiotic medication (either metronidazole or tinidazole), pills which can be taken by mouth. It is okay for pregnant women to take this medication. Some people who drink alcohol within 24 hours after taking this kind of antibiotic can have uncomfortable side effects.

People who have been treated for trichomoniasis can get it again. About one in five people get infected again within three months after treatment. To avoid getting reinfected, make sure that all of your sex partners get treated, and wait to have sex again until all of your symptoms go away (about a week). Get checked again if your symptoms come back.

# How can trichomoniasis be prevented?

Using latex condoms correctly every time you have sex will help reduce the risk of getting or spreading trichomoniasis. However, condoms don't cover everything, and it is possible to get or spread this infection even when using a condom.

The only sure way to prevent sexually transmitted infections is to avoid having sex entirely. Another approach is to talk about these kinds of infections before you have sex with a new partner, so that you can make informed choices about the level of risk you are comfortable talking with your sex life.

If you or someone you know has questions about trichomoniasis or any other STD, especially with symptoms like unusual discharge, burning during urination, or a sore in the genital area, check in with a health care provider and get some answers.

For more information please see RESOURCES in the right-hand column.

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## Tularemia

#### What is tularemia?

Tularemia is a naturally occurring illness caused by a bacterium called Francisella tularensis. These bacteria can be found in certain animals (especially rodents, rabbits and hares). About 100 to 200 cases are reported every year in the United States. Tularemia can cause six different forms of disease; however, up to 80 percent of the cases are "ulceroglandular" (skin ulcers and swollen lymph glands) and are the result of direct contact with infected animals.

#### How can someone come into contact with tularemia?

Tularemia is not known to spread from person to person. People can come into contact with tularemia by

## Tularemia as a weapon

If the tularemia bacterium is used as a weapon, it most likely would be aerosolized and released into the air. The victims would breathe in the bacteria.

Please note: Just because you come into contact with tularemia does not mean you will get sick from it.

# What happens if someone gets sick from tularemia?

The general effects for tularemia may include fever, chills, muscle pain or tenderness, and lack of energy. There are six main types of tularemia with different effects:

People also can catch pneumonia, and develop chest pain and bloody mucus. They can have trouble breathing. They can even stop breathing. Symptoms may gradually worsen from weeks to months after contact with the bacteria.

# How likely is someone to die from tularemia?

Untreated, tularemia has a mortality rate of 5 percent to 15 percent. Appropriate antibiotics can lower this rate to about 1 percent.

#### What is the treatment for tularemia?

Antibiotics are used to treat tularemia.

#### Prevention of illness after contact

Health care providers can give out antibiotics for up to 14 days.

#### Treatment of illness

If a person has a tularemia infection and is very sick, he or she may have to stay in the hospital for treatment with antibiotics.

People who are sick from tularemia do not need to be isolated.

#### Is there a vaccine for tularemia?

No, a vaccine is not currently available in the United States.

#### What should be done if someone comes into contact with tularemia?

If you think that you or someone you know may have come into contact with tularemia bacteria, contact the local county health department right away.

If you or someone you know is showing symptoms of tularemia, call your health care provider or the Illinois Poison Center right away. The toll-free number for the poison center is 1-800-222-1222.

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# **Vaginitis**

Vaginitis is described medically as irritation and/or inflammation of the vagina. Vaginitis is a very common disease affecting millions of women each year. The three most common vaginal infections are bacterial vaginosis (BV), candida vaginitis (yeast infection) and trichomonas vaginitis (trich).

## What are the signs or symptoms of vaginitis?

Vaginal infections can produce a variety of symptoms, such as abnormal or increased discharge, itching, fishy odor, irritation, painful urination or vaginal bleeding. When you have vaginitis, you may have some or all of these symptoms. If you have any of these symptoms, discuss them with you doctor or nurse so that you can be tested.

## What causes vaginitis and how common is it?

Vaginitis has various causes. It may result from bacterial infections, fungal infection, protozoan infection, contact dermatitis or even an allergic reaction. Vaginitis affects millions of women and is one of the primary reasons women visit their doctor. Trichomonas is sexually transmitted, but other vaginitis infections are not usually sexually transmitted.

## What is the difference between the three types of vaginitis?

Bacterial - this type of infection is caused when healthy vaginal organisms are replaced by bacteria. It is referred to as bacterial vaginosis and is the most common type of vaginitis.

Yeast - this type of infection is called candidiasis. It is caused by a fungus and is the second most common type of vaginitis.

Protozoan - this type of infection is called trichomoniasis and it is considered a sexually transmitted disease (STD). It is the least common and comprises 3 percent to 5 percent of all vaginitis infections.

# What causes bacterial vaginosis?

Bacterial vaginosis (BV) is the name of a condition in women where the normal balance of bacteria in the vagina is disrupted and replaced by an overgrowth of certain bacteria. It is sometimes accompanied by discharge, odor, pain, itching or burning.

One type of a good bacteria, Lactobacillus, is particularly important. Lactobacillus keeps the vagina slightly acidic to reduce the growth of potentially harmful organisms. When Lactobacilli are replaced with different kinds of a bad bacteria called anaerobic bacteria, an unpleasant vaginal odor develops and an infection (vaginitis) occurs.

# Are there any complications associated with vaginitis?

Yes, there may be, especially from bacterial vaginosis. If left untreated, BV may result in increased risk of pelvic inflammatory disease (PID), infertility, pre-term birth, premature rupture of membranes, low birth weight, intra-amniotic infections, endometritis, cervical intra-epithelial neoplasia (CIN),

post-gynecological surgery infections, and increased risk of sexually transmitted diseases.

## Will my Pap smear diagnose a vaginal infection?

Although your annual Pap smear is a very important test, it is not typically used as a test for vaginitis.

## How can my doctor tell if I have an infection?

The tests for vaginitis are simple and can be done right in your doctor's office. Your doctor will examine your vagina and use a swab to get a sample of the discharge. Vaginitis is identified by checking vaginal fluid appearance, vaginal pH, the presence of volatile amines (the odor causing gas) and the microscopic detection of clue cells. New tests are now available to aid the physician in his or her diagnosis.

## How do I address the subject with my healthcare provider?

First, do not be embarrassed. Vaginal infections occur in millions of women of all ages and backgrounds. Regular checkups and open discussions regarding your symptoms will go a long way toward maintaining good vaginal health. Your health care provider can perform simple tests to determine the type of vaginal infection and provide you with the best treatment.

## How is vaginitis treated?

There are several ways to treat vaginitis, depending upon the cause of the infection: bacterial vaginosis can be treated orally or intra-vaginally with a prescription for medication; a yeast infection can be treated orally or intra-vaginally with either prescription or over-the-counter antifungal medications; and a trichomonas infection is usually treated with a prescribed oral antibiotic.

# What can I do to prevent initial infections or recurrences?

In order to minimize the risk of developing vaginitis, here are some general suggestions for good vaginal health:

# Can vaginitis affect my baby?

Yes it can. Premature delivery and low birth weight of the baby are more common in women with bacterial vaginosis. Early diagnosis and treatment is important.

# Does my partner need to be tested?

Ask your healthcare provider. Some types of vaginitis can be transmitted from one person to another during sexual intercourse. It depends upon what type of vaginitis you have.

# Can I also be infected with something else?

Yes. You can be infected with a sexually transmitted disease and also have vaginitis. Each infection needs to be treated with different medications so it is important to visit your doctor to determine if you have more than one type of infection.

For answers to other questions, please speak with your doctor or nurse.

IDPH HIV/STD Hotline 800-243-2437 (TTY 800-782-0423)

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Alzheimer's Disease

# **Alzheimer's Disease**

#### What Is Alzheimer's Disease?

Alzheimer's is a specific disease of the brain that was identified more than 100 years ago, but research into its causes, risk factors and potential treatments has gained momentum only in the last 30 years. The hallmarks of Alzheimer's disease are the accumulation of abnormal proteins in the brain: clumps of beta-amyloid (called amyloid plaques) and tangled bundles of tau fibers (called neurofibrillary tangles). Most experts now agree that the accumulation of plaques and tangles in the brain may begin 20 or more years before the symptoms of dementia appear.

Dementia is a term used to designate brain diseases that progressively and permanently undermine cognitive function and behavior to the point where the individual is no longer able to carry out customary activities at work or at home. Alzheimer's disease is one of many dementias. It happens to be the most common dementia seen in old age. It is an irreversible, progressive brain disease. It slowly destroys brain function and leads to dementia. It is characterized by cognitive decline (e.g., memory loss, confusion and poor reasoning); behavioral and psychiatric disorders (e.g., depression, delusions, agitation); and declines in functional status (e.g., ability to perform activities of daily living and self-care).

## What Are the Symptoms?

The first symptom of Alzheimer's disease is often memory impairment. As the disease progresses, memory continues to decline and other functions, like language skills and decision-making, become more difficult. Personality and behavior changes also may occur. A person with the disease may no longer recognize family and friends.

Eventually, the person who survives with Alzheimer's disease is completely reliant on others for assistance with the most basic activities of daily living, such as eating. In more than 90 percent of people with Alzheimer's disease, symptoms do not appear until after age 60 and the incidence of the disease increases with age.

However, there are other types of dementia caused by other diseases and conditions in the brain, such as frontotemporal, Lewy Body and vascular dementias. Some of these, such as frontotemporal, start at a much younger age when a person is in their 50s and early 60s, and can impair language or behavior, while leaving memory intact. Distinguishing between Alzheimer's disease and other dementias, in terms of clinical presentation and diagnosis, may be challenging and may require extensive testing in specialized centers. Researchers now recognize that many of these diseases and conditions can co-occur in the brain and work together to influence the onset of dementia. The term "Alzheimer's disease and related dementias" often are used to refer to Alzheimer's disease and related neurodegenerative disorders.

# What May Prevent or Delay the Onset of Alzheimer's Disease?

Many current studies are investigating the benefits of exercise, diet and other lifestyle modification that may prevent or delay the onset of Alzheimer's disease. The causes of Alzheimer's disease are not completely understood, but researchers believe they include a combination of genetic, environmental

and lifestyle factors. The importance of any one of these factors in increasing or decreasing the risk of developing Alzheimer's disease may differ from person-to-person. In rare cases, known as early or younger-onset Alzheimer's disease, people develop symptoms in their 30s, 40s or 50s.

# ILBrainHealth.org: A One-Stop-Shop for Alzheimer's Disease Education & Resources in Illinois

The Illinois Department of Public Health and Rush University Medical Center partnered to create a website housed under The Illinois Cognitive Resources Network. The website educates Illinoisans about the symptoms & early warning signs of Alzheimer's Disease and Related Dementias, and increases awareness of culturally relevant resources that are available in local Illinois communities. This online system aims to address some of the lessons learned during Lieutenant Governor Juliana Stratton & The Alzheimer's Association IL Chapter's 2019 Listening Tour. They found that many individuals, caregivers, and families living with Dementia feel alone on the journey, especially those in underserved and underrepresented communities.

## Personal and Economic Impact of Alzheimer's Disease

In 2010, there were 210,000 persons with Alzheimer's disease living in Illinois. This figure is projected to reach 240,000 in 2025, a 14 percent increase. If all of the persons with Alzheimer's disease in Illinois lived in one city, it would be the state's second largest city. Alzheimer's is not a disease that limits itself to a particular race, marital status, country of origin, religion or sexual preference.

Nationally, the cost of caring for those with Alzheimer's and other dementias is estimated to total \$203 billion in 2013, increasing to \$1.2 trillion (in today's dollars) by mid-century. Medicare and Medicaid cover about 70 percent of the costs of care. This dramatic rise includes a 500 percent increase in combined Medicare and Medicaid spending.

To put in to perspective the personal and economic impact of Alzheimer's disease and related dementias on persons with the disease, their families and caregivers, and state and federal governments, statistics about Alzheimer's disease and related dementias are presented in this state plan. A much more extensive compilation of facts and figures is published by the Alzheimer's Association every year at www.alz.org.

# Core Competencies for Providing Care to People Living with Dementia

These basic core competencies were developed by the Illinois Department of Public Health, the Alzheimer's Disease Advisory Committee, and Illinois partners to serve as a "minimum set of core competencies for individuals that directly work with or interact with persons living with dementia (PLWD) and their care partners." Some professions may expand on this set and define additional competencies. This effort began in 2015 as part of the Healthy Brain Initiative, providing the foundation for future trainings that will build skills for both professionals and lay persons to work more effectively with PLWD and their care partners. The development of these core competencies and trainings for providers and care partners will enhance the care and quality of life for PLWD across the state and empower the workforce to become more dementia capable.

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West Nile Virus (WNV)

# West Nile Virus (WNV)

West Nile Virus can be dangerous, and those 60 and older are at greatest risk of serious illness. Avoiding mosquito bites is the best way to prevent WNV; see below for tips on how to protect yourself.

West Nile virus emerged in the United States in the New York metropolitan area in the fall of 1999. Since then, the virus, which can be transmitted to humans by the bite of an infected mosquito, has quickly spread across the country.

In Illinois, West Nile virus was first identified in September 2001 when laboratory tests confirmed its presence in two dead crows found in the Chicago area. The following year, the state's first human cases and deaths from West Nile disease were recorded and all but two of the state's 102 counties eventually reported a positive human, bird, mosquito or horse. By the end of 2002, Illinois had counted more human cases (884) and deaths (64) than any other state in the United States.

The Illinois Department of Public Health (IDPH) maintains a sophisticated disease surveillance system to monitor animals and insects that can potentially carry the virus: dead crows, robins, blue jays, mosquitoes and horses. Mosquitoes can either carry the virus or get it by feeding on infected birds. The surveillance system also includes infectious disease physicians, hospital laboratory directors and infection control practitioners, local health departments and staff from IDPH's laboratory, environmental health and infectious diseases divisions who test for and report suspect or confirmed cases of various diseases that can be caused by mosquito-borne viruses.

Mild cases of West Nile infections may cause a slight fever or headache. More severe infections are marked by a rapid onset of a high fever with head and body aches, disorientation, tremors, convulsions and, in the most severe cases, paralysis or death. Usually symptoms occur from three to 14 days after the bite of an infected mosquito. Persons at the highest risk for serious illness are those 60 years of age or older.

The best way to prevent West Nile encephalitis and other mosquito-borne illnesses is to reduce the number of mosquitoes around your home and neighborhood and to take personal precautions to avoid mosquito bites.

To learn more about West Nile virus and other mosquito-borne diseases and about prevention methods, read the other materials available on the IDPH West Nile virus Web site or contact the Illinois Department of Public Health West Nile virus information hotline at 866-369-9710, Monday - Friday, 8 a.m. - 5 p.m.

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## **Definition & Facts for Wilson Disease**

In this section:

#### What is Wilson disease?

Wilson disease is a genetic disorder that prevents the body from removing extra copper, causing copper to build up in the liver, brain, eyes, and other organs.

Your body needs a small amount of copper from food to stay healthy, but too much copper is harmful. Without treatment, Wilson disease can lead to high copper levels that cause life-threatening organ damage.

#### How common is Wilson disease?

Experts are still studying how common Wilson disease is. Older studies suggested that about 1 in 30,000 people have Wilson disease.1 These studies were conducted before researchers discovered the gene mutations that cause Wilson disease.

Newer studies of people's genes suggest that Wilson disease may be more common. A study in the United Kingdom found that about 1 in 7,000 people have gene mutations that cause Wilson disease.2

Experts aren't sure why gene studies suggest that Wilson disease is more common than previously thought. One reason might be that some people with Wilson disease are not diagnosed. Another reason might be that some people have gene mutations for Wilson disease but don't develop the disease.

# Who is more likely to have Wilson disease?

People have a higher chance of having Wilson disease if they have a family history of Wilson disease, especially if a first-degree relative—a parent, sibling, or child—has the disease.

People who have Wilson disease typically develop symptoms when they are between ages 5 and 40.3 However, some people develop symptoms at younger or older ages. Doctors have found the first symptoms of Wilson disease in infants as young as 9 months and in adults older than 70 years.1,4

# What are the complications of Wilson disease?

Wilson disease may lead to complications, but early diagnosis and treatment can lower your chances of developing them.

#### Acute liver failure

Wilson disease can cause acute liver failure, a condition in which your liver fails rapidly without warning. About 5 percent of people with Wilson disease have acute liver failure when they are first diagnosed.5 Acute liver failure most often requires a liver transplant.

Acute kidney failure and a type of anemia called hemolytic anemia often occur in people who have acute liver failure due to Wilson disease.

#### Cirrhosis

In cirrhosis, scar tissue replaces healthy liver tissue and prevents your liver from working normally. Scar tissue also partly blocks the flow of blood through the liver. As cirrhosis gets worse, the liver begins to fail.

Among people who are diagnosed with Wilson disease, 35 to 45 percent already have cirrhosis at the time of diagnosis.6

Cirrhosis increases your chance of getting liver cancer. However, doctors have found that liver cancer is less common in people who have cirrhosis due to Wilson disease than in people who have cirrhosis due to other causes.

#### Liver failure

Cirrhosis may eventually lead to liver failure. With liver failure, your liver is badly damaged and stops working. Liver failure is also called end-stage liver disease. This condition may require a liver transplant.

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# **Yellow Fever Vaccination**

The U.S. Public Health Service has designated the Illinois Department of Public Health as the responsible party for determining which Illinois physicians are authorized to provide, under their orders, yellow fever vaccine for persons who travel outside the United States. The Illinois Department of Public Health, Communicable Disease Section (CD) is responsible for processing application requests, issuing Uniform Stamps, and updating the list of physicians approved to hold the Uniform Stamp at approved sites.

The Uniform Stamp certification is needed to officially document patients' International Certificates of Vaccination that travel vaccinations were given. The Uniform Stamp can be used only to document vaccination at the site listed on the application. The Uniform Stamp also allows the vaccination site to purchase the yellow fever vaccine (purchase of yellow fever vaccine is allowed only for approved Uniform Stamp holders). If the application is approved by the Department, the approved physician becomes a designated Illinois yellow fever vaccine provider and his/her clinic site(s) documented on the form becomes eligible to purchase and administer yellow fever vaccine. Providers are required to report their annual number of yellow fever doses administered to the Department by January 15 of each year.

## **How to Apply**

Medical providers applying for the uniform stamp must include certification of completion of the U.S. Centers for Disease Control and Prevention (CDC) Yellow Fever Vaccine Course. Health care staff members screening patients for yellow fever vaccine must also successfully complete this course, and make their certificates available upon request to Illinois Department of Public Health Communicable Disease Control Section upon request. Additionally, the CDC has developed a Web-based registry of authorized yellow fever vaccination clinics. It is important this information remain up-to-date, as travelers will be using it to locate vaccine providers in their area. The Illinois Department of Public Health must be notified immediately of an address or staff (medical director, physician) change.

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## Zika Virus

Zika virus is a virus similar to dengue, yellow fever, and West Nile and is primarily transmitted through mosquitoes and sex. The Zika virus outbreak in the Caribbean, and Central and South Americas has led to reports of pregnant women giving birth to babies with birth defects, poor pregnancy outcomes, and Guillain-Barre syndrome.

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