



Indiana State
Department of Health

Epidemiology
Resource
Center

Communicable Disease Reference Guide for Schools: 2010 Edition

Dr. Gregory Larkin, State Health Commissioner

Pamela Pontones, State Epidemiologist

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Communicable Disease Reference Guide for School Personnel: 2010

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Indiana State Department of Health
2 N Meridian St, 5K-99
Indianapolis, IN 46204
Phone: 317.233.7125

Overview

Purpose

The health of Indiana's children is the foundation for success in education. Controlling the spread of communicable disease in the community is the legal responsibility of the Indiana State Department of Health (ISDH) and local health departments (LHD); however, public health officials rely upon the cooperation of schools, health care providers, and parents to prevent the spread of disease.

The purpose of the *School Health Manual – 2010*, is to provide the best medical information available to prevent the introduction of communicable disease in the school environment and reduce its spread. The *School Health Manual - 2010* was written using the most current information from reliable public health and medical sources.

This manual is not intended to serve as a policy and procedure manual and should not be used as a substitute for the timely evaluation of suspected infections by a health care provider. Children who may be ill should always be referred for medical evaluation. This manual is intended to serve as a reference guide to school nurses and school officials regarding communicable disease issues.

Organization and Use of the Manual

The manual is divided into four sections as follows:

Diseases and Conditions

This section contains information on specific disease conditions which the school nurse may encounter. Each disease condition includes information pertaining to its clinical description, incubation period, mode of transmission, period of communicability, exclusion requirements or recommendations, prevention of infection and care suggestions. Links to ISDH Quick Facts Sheet and materials from the Centers for Disease Control and Prevention (CDC) pertaining to each condition are available under resources. All diseases that are required by Indiana law to be reported by health care providers and laboratories are denoted by a red stop sign  on

the condition page and are identified as being reportable to the local health department in the summary table. Although schools are not legally required to report cases of reportable communicable diseases, it is recommended that you notify the LHD if you are aware of a reportable case and the LHD has not already been in contact with you. Occasionally a report by a school to the LHD will be the first notification of a reportable illness.

Summary Chart

The summary chart concisely describes in table format the information contained in the individual disease or condition pages in section one. When the summary chart indicates it is not necessary to inform the LHD about a disease or condition occurring in a student, this does not prohibit you from contacting the LHD for consultation and recommendations.

Rash Illness Chart

The rash illness chart describes in table format a summary description of common rash illnesses. In the first column of the table, the rash illness chart contains hyperlinks to pictures of each rash.

Appendices

The appendices include specific information on Indiana laws pertaining to school health, blood borne pathogens, and other hand washing resources.

Resources

General

The *School Health Manual - 2010* is based on the best scientific, public health and medical information available, but cannot address all situations schools may encounter. Thus, other resources should be available for guidance in school health matters. A partial list of useful resources includes:

- The Centers for Disease Control and Prevention (CDC) website at: <http://www.cdc.gov>
- The Indiana *Communicable Disease Reporting Rule for Physicians, Hospitals and Laboratories*, 410 IAC 1-2.3; December 12, 2008. The communicable disease rule should always be used as the primary guide regarding the control of communicable diseases in Indiana. This rule provides control measures that should be followed, and where applicable, requires students to be excluded from school if necessary to prevent the spread of diseases. This rule can be found at http://www.in.gov/isdh/files/comm_dis_rule.pdf (Section 2.3) and is referenced often throughout this manual. Conditions that are not reportable include only recommendations for exclusion from school as there are no specific control measures found in communicable disease laws or rules.
- *Control of Communicable Diseases Manual*, 19th Edition, David Heyman, MD, editor, American Public Health Association. The *School Health Manual -2010* is based primarily on recommendations contained in the *Control of Communicable Diseases Manual*. The procedures described in the *Control of Communicable Diseases Manual* should be followed to the extent they are not in conflict with Indiana law or rule, when the condition is not reportable, or when there are no specific legal requirements in Indiana law or rule.
- The ISDH web site has a link listing contact information for all local health departments at: <http://www.in.gov/isdh/23926.htm>

Additional sources of information which can be used by the school nurse include:

- *The Red Book*, 28th Edition, 2009 Report of the Committee on Infectious Diseases, American Academy of Pediatrics.

Local Health Department Communications

Local Health Department Staff - LHD and/or ISDH staff investigate each case of reportable illness. They will assist school staff with implementing exclusion requirements and control measures. It is therefore very important to maintain communication with LHDs concerning individual cases, clusters, and outbreaks of communicable diseases. **By Indiana law, absenteeism rates of 20 % or greater must be reported to the LHD.** More information on this law is available at <http://www.doe.in.gov/sservices/attendance/legal.html>.

In addition, LHD staff can provide assistance on non-reportable communicable diseases. LHD staff members value the input of school nurses in monitoring disease activity in the community and school environment.

Parent and Community Communications

LHDs have the ability to notify health care providers if their medical practice may be affected by a communicable disease in the community (e.g., the need to offer prophylaxis to contacts of a case of pertussis or *Neisseria meningitidis* or the increased incidence of salmonellosis and the need to test students if symptomatic.) It is very important that LHDs are aware of communications disseminated to parents/caregivers regarding any current health issues. The LHD also has the expertise to provide the most current medical advice available regarding communicable diseases. School nurses and administrators are strongly encouraged to contact their LHD prior to releasing any information to parents/caregivers regarding a reportable communicable disease occurring in their school. ISDH and LHD staff can provide assistance in drafting communications for parents and the school community. Some conditions are seasonal (e.g., pertussis and viral meningitis occur usually in the fall, influenza generally occurs in the winter or spring, etc.). The use of ISDH Quick Fact sheets and the CDC materials available in this manual can be used as general information for distribution to parents/caregivers when necessary.

Blood-borne Pathogens

Hepatitis B Infection

(Acute and Chronic)*



Clinical Description

Hepatitis B is a serious disease of the liver that results from infection with the Hepatitis B virus. Symptoms can include malaise, anorexia, fever, nausea, right upper quadrant abdominal pain, myalgia, jaundice and light-colored stools. Children usually have mild symptoms, such as anorexia or nausea and may be asymptomatic. Most people infected with Hepatitis B virus will recover without any complications. However, some may develop chronic (long-term) Hepatitis B infection that can lead to cirrhosis, liver cancer, liver failure, and death. The onset of Hepatitis B is usually more insidious than Hepatitis A.

Incubation Period

The incubation period is usually 45-180 days with an average of 60-90 days.

Mode of Transmission

Hepatitis B is transmitted when blood or other body fluids, such as semen and vaginal secretions from an infected person, come in direct contact with a susceptible person's mucous membranes, broken skin, or through contact with a contaminated sharp object. Infection also has been acquired through human bites.

Period of Communicability

A person can spread Hepatitis B 1-2 months before and after the onset of symptoms. Persons with chronic Hepatitis B infections are carriers of the virus. An indication of communicability is the presence of Hepatitis B surface antigen (HBsAg) in a person's blood.

Exclusion / Attendance

Infected children should be receiving care from a provider, even in chronic stages of the disease. According to Indiana law (IC 16-41-9-3), children must not be excluded from school activities based on their Hepatitis B status; however, it may be prudent to exclude from school activities if a child is very symptomatic.

Prevention / Care

- There is a safe and effective vaccine that can prevent Hepatitis B infection. Immunity against Hepatitis B persists for at least 15 years after successful immunization and may be maintained as cellular immune memory for many more years.
- School immunization requirements hepatitis B can be found at: <http://www.in.gov/isdh/17094.htm>
- Equipment contaminated with blood or other potentially infectious body fluids (or both) are appropriately disinfected or sterilized prior to reuse (see Rule 410 IAC 1-2.3-73(3)). Universal precautions to prevent exposure to blood and body fluids should be practiced.

Other Resources

Indiana State Department of Health Quick Fact:

<http://www.in.gov/isdh/21932.htm>

Centers for Disease Control and Prevention (CDC):

<http://www.cdc.gov/Hepatitis/ChooseB.htm>

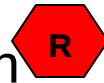
Hepatitis B Foundation:

<http://www.hepb.org>

*Acute, but not chronic, infections are required to be reported under the Communicable Disease Rule

Hepatitis C Infection

(Acute and Chronic)*



Clinical Description

Hepatitis C is a serious disease of the liver that results from infection with the Hepatitis C virus. Clinical symptoms include vomiting, nausea, unexpected weight loss, dark urine, pale stool, fatigue, abdominal pain, and jaundice. Initial infection may be asymptomatic (more than 90% of cases) or mild; a high percentage (50-80%) of infected persons will develop chronic infection. Chronic infection can last a lifetime with no visible symptoms. About 50% of chronically infected persons develop cirrhosis or cancer of the liver.

Incubation Period

The incubation period ranges from 2 weeks to 6 months, most commonly about 6-9 weeks. In chronic Hepatitis C infections, the virus does not resolve or clear after 6 months. Chronic infections may persist for up to 20 years before onset of cirrhosis or cancer of the liver.

Mode of Transmission

Hepatitis C is transmitted when blood or other body fluids, such as semen and vaginal secretions from an infected person, come in direct contact with a susceptible person's mucous membranes, broken skin, or through contact with a contaminated sharp object.

Period of Communicability

A person can spread Hepatitis C one or more weeks before onset of symptoms and may persist in most persons indefinitely. Persons with chronic Hepatitis C infections are carriers of the virus.

Exclusion / Attendance

There are no specific exclusion provisions found in Indiana communicable disease laws or rules for Hepatitis C. For other information on laws and rules regarding Hepatitis C see Rule 410 IAC 1-2.3 Sec. 74 at: http://www.in.gov/isdh/files/comm_dis_rule.pdf

Prevention / Care

- Recommend Hepatitis A and B vaccine for all Hepatitis C infected persons.
- There is no vaccine available to prevent Hepatitis C
- Universal precautions to prevent exposure to blood and body fluids should be practiced. Equipment contaminated with blood or other potentially infectious body fluids (or both) are appropriately disinfected or sterilized prior to reuse (see Rule 410 IAC 1-2.3-73(3)).

Other Resources

Indiana State Department of Health Quick Fact Link:

<http://www.in.gov/isdh/21933.htm>

Centers for Disease Control and Prevention (CDC) Link:

<http://www.cdc.gov/Hepatitis/ChooseC.htm>

*Acute infections are required to be investigated under the Communicable Disease Rule; it is strongly recommended that chronic infections be investigated as well.

HIV/AIDS

Clinical Description

Infection occurs when an individual acquires the human immunodeficiency virus (HIV). Within a few weeks of the initial infection, persons may experience a few days of clinical symptoms suggestive of a viral illness. Symptoms may include fever, rash, myalgia, neuralgia, headaches, and gastrointestinal disturbances. After this initial response, persons usually become asymptomatic, although suppression of the immune system is occurring. Opportunistic infections occur when immune suppression becomes severe. The final stage of HIV infection is known as acquired immunodeficiency syndrome (AIDS), and is characterized by development of certain infections or conditions associated with immune suppression.

Incubation Period

HIV antibodies may not be detectable for 3-6 months after exposure, depending on the sensitivity of the antibody test. However, in most persons they are detectable in 2-8 weeks. In most instances, the virus itself begins to replicate upon entering the host and can be detected with an RNA test within 9-11 days after exposure. The antibody test is the routine test for HIV.

http://www.cdc.gov/hiv/topics/testing/resources/qa/be_tested.htm#wait

Mode of Transmission

In a non-medical setting, HIV is transmitted from an infected person to another by four body fluids: blood, semen, vaginal secretions and breast milk. These fluids may be passed from one person to another when infected fluids come in contact with an uninfected person's broken skin or mucous membranes in enough quantity to allow for the replication of the virus. There are three major ways of contracting HIV: (1) unprotected sexual encounters; (2) sharing needles with persons who are infected with HIV; (3) mother to child transmission during pregnancy, labor and delivery, or breast feeding.

Period of Communicability

A person can spread HIV to others before it is detectable in the body and anyone infected remains a life-long carrier of the virus. HIV-infected mothers should consult a health care provider. Certain medications prevent transmission to the developing baby.

Exclusion / Attendance

According to IC 16-41-9-3, children must not be excluded from school activities based on their HIV status.

<http://www.in.gov/legislative/ic/code/title16/ar41/ch9.html>

It should be noted that HIV is not reportable by school systems or to school systems. All confidentiality requirements found in IC 16-41-8 must be followed:

<http://www.in.gov/legislative/ic/code/title16/ar41/ch8.html>

Prevention / Care

- Provide comprehensive, fact-based education to prevent HIV infection in children.
- Equipment contaminated with blood or other potentially infectious body fluids (or both) are appropriately disinfected or sterilized prior to reuse (see Rule 410 IAC 1-2.3-73(3)). Universal precautions to prevent exposure to blood and body fluids should be practiced.
- Dispense medications to infected students in a discreet manner in accordance with the exact directions regarding time of day to be taken, dosage, and other specifications as indicated (i.e. the need to be given on empty stomach or with food).

Other Resources

Indiana State Department of Health Quick Fact Link:

<http://www.in.gov/isdh/healthinfo/hiv.htm>

Centers for Disease Control and Prevention (CDC) Link:

<http://www.cdc.gov/hiv/>

Conditions of the Skin

Conjunctivitis

Pink Eye

Clinical Description

Conjunctivitis, or pink eye, is an acute condition characterized by redness of the eye(s). Other symptoms can include tearing, irritation, and photophobia, which may be followed by swelling of the lids and/or a purulent discharge. Viral and bacterial infections, foreign bodies or allergies may cause the condition.

Incubation Period

For bacterial conjunctivitis, the incubation period ranges from 24-72 hours, and for viral conjunctivitis, the incubation period is usually 12 hours – 3 days.

Mode of Transmission

Contact with discharges from conjunctivae or upper respiratory tracts of infected persons; also contaminated fingers clothing and other articles especially those coming in close contact with the eyes (i.e. make-up applicators, multiple dose eye medication applicators).

Period of Communicability

A person can spread conjunctivitis during the course of active infection. Depending upon the cause of the infection, communicability may be longer, i.e. up to 14 days after onset.

Exclusion / Attendance

The Academy of Pediatrics advises that children with purulent conjunctivitis (defined as pink or red conjunctiva with white or yellow discharge, often with matted eyelids after sleep and eye pain or redness of the eyelids or skin surrounding the eyes) be excluded until examined by a health care provider and approved for readmission. With bacterial conjunctivitis, health care providers usually recommend exclusion until 24 hours after starting topical antibiotic therapy.

Prevention / Care

- Use of hot or cold moist packs may relieve discomfort
- Encourage frequent hand-washing and prompt disposal of used tissues
- Refer for medical evaluation

Other Resources

Indiana State Department of Health Quick Fact Link:

<http://www.in.gov/isdh/21205.htm>

Mayo Clinic Link:

<http://www.mayoclinic.com/health/pink-eye/DS00258>

Fifth Disease

Erythema Infectiosum

Clinical Description

Fifth disease is a mild illness caused by the human parvovirus (B19). The disease is characterized by a facial rash with a "slapped cheek" appearance and a lace-like rash on the trunk and extremities that is often itchy. Reddening of the skin may recur due to nonspecific stimuli such as temperature or sunlight. Infection is most common in school-aged children. Symptoms can include low-grade fever and mild cold symptoms. Parvovirus can also cause other conditions. In people with certain red blood cell abnormalities, such as sickle cell disease, this infection can cause an aplastic crisis. Infection with the virus can also cause chronic anemia in immunosuppressed people or arthralgia or arthritis in susceptible adults. Clusters of cases can occur in schools, usually in late winter and spring. Parvovirus infection during early pregnancy may cause intrauterine growth retardation, fetal hydrops and or death in the fetus, although this is very rare.

Incubation Period

The incubation period is normally from 4-14 days, but can be as long as 20 days.

Mode of Transmission

Transmission occurs contact with infectious respiratory secretions, exposure to blood or blood products and during from an infected mother to her fetus; however, droplet contact and close person-to-person contact are the most common modes of transmission.

Period of Communicability

An infected person can spread fifth disease during the week prior to the appearance of the rash. When the rash appears, a person can no longer spread the virus to others.

Exclusion / Attendance

Children with fifth's disease are most communicable before onset of illness; however, it may be prudent to exclude from school while fever is present.

Prevention / Care

- Inform high risk people within the school when a case of fifth disease has been identified: persons with chronic hemolytic anemia, congenital or acquired immunodeficiencies, and pregnant women. Pregnant women should consult with their health care provider if exposed to a positive case. Serologic testing for parvovirus can determine a pregnant woman's susceptibility to the virus.
- Encourage frequent hand washing and prompt disposal of used tissues.

Other Resources

Indiana State Department of Health Quick Fact Link:

<http://www.in.gov/isdh/21378.htm>

Centers for Disease Control and Prevention (CDC) Link:

http://www.cdc.gov/ncidod/diseases/submenus/sub_parvovirus.htm

Hand, Foot and Mouth Disease (HFMD)

Vesicular Stomatitis with Exanthem

Clinical Description

HFMD is a mild illness occurring most often in children between the ages of 5-15 years of age that is caused by a group of viruses called enteroviruses (the most common being Coxsackievirus A16 and Enterovirus 71). Cases may also occur in older adolescents and adults. HFMD is characterized by symptoms that can include sudden onset of fever, malaise, poor appetite, and sore throat followed by lesions in the mouth 1-2 days later. The lesions begin as small red spots that blister that may become ulcers. They are usually located on the tongue, gums, and inside of the cheeks. A skin rash then develops which is usually located on the palms of the hands and soles of the feet. The sores may also appear on the buttocks. The oral lesions can be very painful. Serious conditions can result from infection with enteroviruses including viral meningitis and encephalitis.

Incubation Period

Usually 3-5 days.

Mode of Transmission

Transmission is through direct contact with discharge from the nose and throat, and through the fecal-oral route. Infections are most common in the summer and early fall.

Period of Communicability

A person can spread HFMD during the acute stage of illness and may be able to spread the virus for several weeks after symptoms resolve.

Exclusion / Attendance

There are no specific recommendations on the exclusion of children with HFMD from school. Children are often excluded from group settings during the first few days of illness, while they are most contagious. Excluding during the first few days of illness may reduce spread, but will not completely interrupt it. Exclusion of ill persons does not prevent additional cases since the virus can be excreted for weeks after the symptoms disappear. Also, some persons excreting the virus, including most adults, may have no symptoms. Some benefit may be gained by excluding children who have blisters in their mouths and drool or who have weeping lesions on their hands.

Prevention / Care

- There is no specific treatment or vaccine for HFMD.
- Wash and sanitize or discard articles soiled by discharge.
- Certain foods and beverages can cause burning or stinging of the blisters. The following ideas may make eating and drinking more tolerable for the student:
 - o Suck on popsicles or ice chips; eat ice cream or sherbet
 - o Drink cold beverages, such as milk or ice water
 - o Avoid acidic foods, citrus drinks and soda
 - o Avoid salty or spicy foods and choose foods that are soft
 - o Rinse mouth with warm water after meals

Other Resources

Indiana State Department of Health Quick Fact Link:

<http://www.in.gov/isdh/21916.htm>

Centers for Disease Control and Prevention (CDC) Link:

<http://www.cdc.gov/ncidod/dvrd/revb/enterovirus/hfhf.htm>

Impetigo

Clinical Description

Impetigo is a skin eruption caused by either streptococcal or staphylococcal bacteria that may proceed through vesicular, pustular, and encrusted stages. Impetigo is characterized by red bumps, usually on the face (particularly around the nose and mouth) or extremities. The red bumps fill with pus, break open and form a honey-colored crust. The lesions are usually itchy, but not painful. The rash typically lasts 2- 3 weeks.

Incubation Period

Symptoms usually begin 1-3 days after exposure for *Streptococcus*; usually 4-10 days for *Staphylococcus*.

Mode of Transmission

Infection is spread by direct contact with secretions from lesions.

Period of Communicability

A person who is untreated can spread the bacteria for as long as drainage occurs from lesions. Infected individuals can no longer transmit the infection within 24 hours after the initiation of antibiotic therapy.

Exclusion / Attendance

Parents should be advised to keep contagious children home until 24 hours after starting topical or oral antibiotic therapy. Contacts of cases do not need to be excluded.

Prevention / Care

- Encourage frequent hand-washing.
- Educate students to avoid scratching and touching the infected area and then touching another area of the body. Other prevention/care suggestions include:
 - Wear disposable gloves while applying any treatments to infected skin.
 - Draining lesions should be covered at all times with a dressing.
 - Call caregiver of child.
 - Watch for additional cases.

Other Resources

Indiana State Department of Health Quick Fact Link:

<http://www.in.gov/isdh/22103.htm>

Centers for Disease Control and Prevention (CDC) Link:

http://www.cdc.gov/ncidod/dbmd/diseaseinfo/groupastreptococcal_g.htm

Mayo Clinic Link:

<http://www.mayoclinic.com/health/impetigo/DS00464>

Methicillin-resistant *Staphylococcus aureus* (MRSA)

Clinical Description

Staphylococcus aureus (staph) bacteria commonly reside on the skin or in the nose of healthy individuals and do not cause infection. When these bacteria enter the body through a break in the skin, they can cause mild skin infections, such as pimples, abscesses, rashes, or boils. Staph can also cause serious infections, such as bloodstream and bone infections or pneumonia. Methicillin-resistant *Staphylococcus aureus* (MRSA) is a type of staph bacteria that is resistant to the antibiotic methicillin and other antibiotics related to penicillin.

Incubation Period

The incubation period is variable and indefinite.

Mode of Transmission

MRSA is spread by direct physical contact with an infected person, either by direct skin contact or indirect contact with inanimate object (such as towels, clothes, bandages, or sports equipment) that is soiled with wound drainage. The bacteria are not carried through the air, and they are not found in dirt or mud.

Period of Communicability

A person is able to spread MRSA if an open wound is not properly covered.

Exclusion / Attendance

There are no specific exclusion provisions found in Indiana communicable disease laws or rules for MRSA. Students should not be excluded from attending school unless directed by a health care provider, or if wound drainage cannot be covered and contained with a dry bandage, or if good personal hygiene can not be demonstrated.

Prevention / Care

MRSA can be prevented by encouraging students and educators alike to follow these simple precaution methods at all times:

- Encourage frequent hand-washing.
- Keep infected areas covered with a clean, dry bandage.
- Avoid direct contact with another person's wound, drainage, or bandages.
- Avoid contact with surfaces contaminated with wound drainage.
- Do not share personal hygiene items, such as washcloths, towels, razors, toothbrushes, soap, deodorant, nail clippers, clothing, or uniforms.
- Clean shared athletic equipment and surfaces before use.
- See a health care provider if a wound shows signs of infection, such as redness, swelling, pain, or drainage.

Prompt referral to a health care provider for evaluation and treatment will prevent the infection from becoming worse.

Other Resources

Indiana State Department of Health MRSA Resource Manual

<http://www.in.gov/isdh/24808.htm>

Indiana State Department of Health Quick Fact Link:

<http://www.in.gov/isdh/22188.htm>

Centers for Disease Control and Prevention (CDC) Link:

<http://www.cdc.gov/Features/MRSAinSchools/>

Pediculosis Capitis

Head Lice

Clinical Description

Pediculosis capitis is an infestation of adult lice or nits (eggs) in the hair on the head. The head louse lives close to the scalp and are most visible behind the ears or at the base of the neckline. Lice depend upon human blood to exist and can only survive up to two days away from the scalp. The main symptom of a head lice infestation is itching.

Incubation Period

Optimally, eggs hatch in a week, and the resultant lice are capable of multiplying in 8-10 days. The typical adult louse lives 20-30 days and lays 4-5 eggs a day; however, the eggs will only hatch if they are less than 1 week old and are near the scalp.

Mode of Transmission

Transmission occurs by direct head to head contact with a person with a live infestation, or less frequently, direct contact with their personal belongings that are harboring lice, such as combs, hairbrushes or hats.

Period of Communicability

A person can spread lice as long as live lice remain on an infested person and/or eggs (nits) in hair are within a ¼" from the scalp. Head lice are most common among children attending child care or elementary school.

Exclusion / Attendance

School nurses should work with their administration and LHDs to implement a policy regarding head lice and attendance. A lack of scientific evidence hinders the ISDH from endorsing any policy; however, it should be noted that most school systems no longer support a "no-nit" policy.

Prevention / Care

- Instruct parents/guardians to use the pediculicides as directed in the package insert, detection of living lice more than 24 hours after treatment suggests treatment failure, a repeated treatment with the same pediculicide 9-10 days after the first treatment may be necessary to rid the child of infestation.
- Household contacts should be evaluated for lice or nits, and if infested, should be treated at the same time as the child. Parents are encouraged to comb out and completely remove all nits.
- Parents should be instructed in home control measures, including laundering items used the 2 days prior to treatment in hot soapy water. Brushes and combs should be thoroughly cleaned or boiled.
- Insecticide treatment of the home is not indicated.
- Presence of lice is not indicative of poor hygiene or unhygienic environment.
- Head lice rarely cause direct harm; they are not known to transmit infectious agents from person-to-person.
- There is a lack of scientific evidence as to whether suffocation of lice with occlusive agents is effective in treatment.

Other Resources

Indiana State Department of Health Quick Fact Link:

<http://www.in.gov/isdh/21929.htm>

Centers for Disease Control and Prevention (CDC) Link:

<http://www.cdc.gov/lice/>

Harvard School of Public Health Link:

<http://www.hsph.harvard.edu/headlice/lice.pdf>

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Ringworm

Tinea

Clinical Description

Ringworm is an infection caused by a fungus which can affect the skin on the body (*Tinea corporis*), scalp (*Tinea capitis*), groin area (*Tinea cruris* “jock itch”), or feet (*Tinea pedis* “athlete’s foot”). Ringworm usually begins as a small red bump or papule that spreads outward, so that each affected area takes on the appearance of a red, scaly outer ring with a clear central area. The lesions are frequently itchy, and can become infected if scratched.

Incubation Period

The incubation period varies depending on the type of ringworm. The incubation period for *Tinea capitis* is 10 to 14 days, *Tinea corporis* and *Tinea cruris* is 4 to 10 days, and the incubation for *Tinea pedis* is unknown.

Mode of Transmission

Transmission is usually by direct contact with a human or animal source. *Tinea capitis* can also be transmitted by inanimate infected objects such as the back of seats, combs, brushes, or hats. *Tinea cruris*, *corporis* and *pedis* can be contracted from places such as shower stalls, benches, contaminated floors, and articles used by an infected person.

Period of Communicability

A person can spread ringworm as long as lesions are present and viable fungus persists on contaminated materials and surfaces.

Exclusion / Attendance

The 2009 American Academy of Pediatrics *Red Book* provides basic guidance on school attendance as follows:

- Students with a fungal infection of the skin should be referred to a medical provider for treatment; however, students who fail to receive treatment do not need to be excluded unless the nature of their contact with other students could potentiate spread.

Prevention / Care

- Students infected with *tinea pedis* should be excluded from swimming pools, and from walking barefoot on locker room and shower floors until treatment has been initiated.
- Students with *tinea capitis* should be instructed not share of combs, hats, hair ribbons, or brushes
- Cleaning and draining the school shower areas should be done frequently.

Other Resources

Indiana State Department of Health Quick Fact Link:

<http://www.in.gov/isdh/24266.htm>

National Institutes of Health Link:

<http://www.nlm.nih.gov/medlineplus/ency/article/001439.htm>

Scabies

Clinical Description

Scabies is a skin infection caused by the burrowing itch mite, *Sarcoptes scabiei*, which can only be seen with microscope. It is characterized by itching, particularly at night, and blister-like sores in the burrows of the skin, which may become infected. These sores are especially prevalent in the webs between the fingers, the heels of the palms, the wrists, armpits, buttocks, genitalia, and elbows. Nipples may also be affected in older females.

Incubation Period

The incubation period for scabies ranges from 2 to 6 weeks in the first infection; for subsequent infections the incubation may be as short as a few days.

Mode of Transmission

Scabies is transmitted by close (including sexual) contact with an affected individual. Contact with bedding, towels, or clothing (including undergarments) of an infested person can be a means of spreading scabies.

Period of Communicability

A person can spread scabies from the time of infection until the mites and eggs are destroyed by treatment.

Exclusion / Attendance

Infested persons should be excluded from school until the day after treatment.

Prevention / Care

- Students or staff may return to school after treatment is completed.
- Presence of scabies does not necessarily indicate poor hygiene or unhygienic environment.
- Clothing and bedclothes of the infected person and of all the people in their household should be well-laundered.
- Bed mattresses and upholstered furniture should be vacuumed thoroughly. Insecticide treatment of the home or any school facility is not recommended.
- Caregivers who have prolonged skin to skin contact with a student infested with scabies may benefit from prophylactic treatment

Other Resources

Indiana State Department of Health Quick Fact Link:

<http://www.in.gov/isdh/22416.htm>

Centers for Disease Control and Prevention (CDC) Link:

<http://www.cdc.gov/ncidod/dpd/parasites/scabies/default.htm>

Scarlet Fever and Streptococcal Sore Throat

Clinical Description

Streptococcal sore throat is an acute syndrome with fever, exudative tonsillitis or pharyngitis, and tender cervical lymph nodes; however, it can occur with very few symptoms. Many sore throats resembling "strep throat" are not due to strep and may be a viral infection. Scarlet fever is a combination of a streptococcal sore throat and a skin rash caused by a toxin produced by Group A *Streptococcus* bacteria (*Streptococcus pyogenes*). The disease is characterized by a fine, red rash that feels almost like sand-paper. It appears first on the upper body, then spreads to cover almost all of the body. In full-blown cases, this may occur over a period of several hours to several days. The rash fades on pressure and leads to the flaking of the skin. With few exceptions, it is usually no more severe or dangerous than a strep throat without the rash. The main reason for concern with a streptococcal infection is the risk of developing rheumatic fever, which is markedly reduced by prompt treatment with appropriate antibiotics.

Incubation Period

The incubation period ranges from 1 to 3 days, rarely longer.

Mode of Transmission

The primary mode of transmission is by large respiratory droplets or direct contact with individuals who have strep throat or with carriers of the bacteria. Strep throat and scarlet fever are rarely transmitted through direct contact with objects. Individuals with acute respiratory tract (especially nasal) infections are particularly likely to transmit infection.

Period of Communicability

A person who is untreated can spread the disease as long as he or she is symptomatic, usually 10-21 days. Infected individuals can no longer transmit the infection within 24 to 48 hours after the initiation of antibiotic therapy.

Exclusion / Attendance

Children should not return to school until at least 24 hours after beginning antibiotic treatment when sick with noninvasive Group A *Streptococcus* infections. Asymptomatic children should not be excluded from school.

Prevention / Care

- Children with a sore throat and fever, and children with an unexplained fever over 101 degrees Fahrenheit should be referred for medical evaluation.

Other Resources

Indiana State Department of Health Quick Fact Link:

<http://www.in.gov/isdh/22433.htm>

Centers for Disease Control and Prevention (CDC) Link:

http://www.cdc.gov/ncidod/dbmd/diseaseinfo/groupastreptococcal_g.htm

Mayo Clinic Links:

<http://www.mayoclinic.com/health/strep-throat/DS00260>

<http://www.mayoclinic.com/health/scarlet-fever/DS00917>

Shingles

Herpes Zoster

Clinical Description

Herpes Zoster (Shingles) is the latent manifestation of the primary varicella infection caused by the herpes zoster virus. Shingles is characterized as a rash on one side of the face or body. The only symptom of shingles includes pain, itching, or tingling in the area where the rash develops prior to blistering. Lesions generally appear along nerve pathways in crops similar to the varicella lesions. Shingles is extremely painful. The rash usually clears within 2 to 4 weeks. Although uncommon, shingles can occur in school age children and vaccinated persons.

Incubation Period

Shingles is not transmitted from exposure to another infected person so there is no applicable incubation period. Anyone who has recovered from varicella may develop shingles.

Mode of Transmission

Transmission of the virus occurs through direct contact with the rash or fluid from the lesions. If the person exposed has not previously had chicken pox, that person would develop chicken pox, not shingles. Therefore, shingles cannot be passed from one individual to another.

Period of Communicability

A person can no longer spread the herpes zoster virus once the rash lesions crust over.

Exclusion / Attendance

If the site of the infection can be covered, individuals with shingles are not considered to be highly contagious and should not be excluded from school.

Prevention

- People with shingles should keep the rash covered and not touch or scratch the rash.
- Wash hands properly and often.
- There is no shingles vaccine available for children; however, administration of the varicella vaccine will prevent infection if contact with a shingles case occurs.

Other Resources

Indiana State Department of Health Quick Fact Link:

<http://www.in.gov/isdh/22418.htm>

Centers for Disease Control and Prevention (CDC) Link:

<http://www.in.gov/isdh/healthinfo/shingles.htm>

Tick Borne Infections



Clinical Description

Lyme disease is an infection caused by a bacterium that is acquired through the painless bite of a tiny tick named *Ixodes scapularis*, more commonly known as the "deer tick." Lyme disease usually begins with a characteristic rash, which begins as a red papule and expands to a larger reddened area, typically with partial center clearing. The rash may appear anytime 2 to 31 days after the tick bite. If not treated promptly additional symptoms may develop, such as fever, headache, pain in the joints or muscles, mild neck stiffness, or swollen lymph nodes. If left untreated, Lyme disease can lead to serious health problems.

Rocky Mountain Spotted Fever (RMSF) is characterized by a sudden onset of moderate to high fever, 3 to 10 days after tick attachment. The fever ordinarily persists for 2 to 3 weeks. Significant malaise, deep muscle pain, severe headaches, chills, and conjunctival infections are typical symptoms. A rash appears around the third day and spreads to the palm, soles, and then the rest of the body. There is a significant fatality rate in untreated cases.

Ehrlichiosis is caused by an organism transmitted by ticks. Disease symptoms vary from mild or inapparent with some cases becoming fatal. Patients typically present with fever, depression and anorexia. The causative agents for Ehrlichiosis can be transmitted by several different species of ticks; most commonly the lonestar tick. However, a person may develop Lyme disease and Ehrlichiosis from the same tick bite (deer tick).

Incubation Period

For Lyme disease, the incubation period ranges from 2 to 31 days, typically 7 to 10 days. For RMSF, the incubation period is from 3 to 14 days. For Ehrlichiosis, the incubation period is 7-14 days.

Mode of Transmission

These tick borne diseases are only transmitted through bites from infected ticks. A tick must be attached for several hours before it can transmit disease.

Period of Communicability

Tick borne diseases are not transmitted person-to-person.

Exclusion / Attendance

There are no specific control measures for schools found in Indiana communicable disease laws or rules for tick borne diseases. For other information on laws and rules regarding tick borne diseases see Rule 410 IAC 1-2.3 Sec. 64,80 and 94 at http://www.in.gov/isdh/files/comm_dis_rule.pdf

Prevention / Care

- If a tick is found on a student, remove it immediately. To remove a tick, use tweezers to firmly grasp the body close to the skin and pull it straight out. If tweezers are not available, the fingers may be used as long as they are covered with a tissue, foil, or wax paper to prevent direct contact with fluids from the tick. Do not twist or jerk the tick because the head may become embedded in the skin. Contact a health care provider if the mouth parts do become embedded. Wash the area and your hands after the tick has been removed.
- Contact caregivers of child about the tick bite. They should be instructed to seek medical evaluation if the student develops a febrile illness or rash over the next 3 to 4 weeks.

Other Resources

Indiana State Department of Health Quick Fact Links:

<http://www.in.gov/isdh/22115.htm>

<http://www.in.gov/isdh/22236.htm>

<http://www.in.gov/isdh/21373.htm>

Centers for Disease Control and Prevention (CDC) Links:

www.cdc.gov/ncidod/dvbid/lyme/index.htm

http://www.cdc.gov/ncidod/diseases/submenus/sub_rmsf.htm

<http://www.cdc.gov/ncidod/dvrd/ehrlichia/Index.htm>

Gastrointestinal Illness

Campylobacteriosis



Clinical Description

Campylobacteriosis is a diarrheal disease caused by bacteria of the genus *Campylobacter*. The species that most commonly infects humans is *Campylobacter jejuni*. Symptoms can include diarrhea (which is sometimes bloody), stomach cramps, fever, nausea, and vomiting. *Campylobacter* causes symptoms that usually last no longer than one week and medical treatment is not required.

Incubation Period

Symptoms usually appear 2-5 days after exposure, with a range of 1-10 days.

Mode of Transmission

Campylobacter is transmitted by food or the fecal-oral route.

Period of Communicability

A person can spread *Campylobacter* while experiencing symptoms.

Exclusion / Attendance

Symptomatic persons diagnosed with *Campylobacter* or symptomatic persons linked by person, place, or time to a case are excluded from attending school until:

- Asymptomatic for at least 24 hours.
- Disease prevention education provided by the local health department

For more information, please see the Communicable Disease Reporting Rule 410 IAC 1-2.3 Sec. 57

http://www.in.gov/isdh/files/comm_dis_rule.pdf.

Prevention / Care

- Encourage frequent hand washing, particularly after using the restroom, assisting someone with diarrhea and/or vomiting, after contact with animals, after swimming, and before and after food preparation (please refer to the ISDH [Quick Facts about Hand Washing](#)).
- Treatment with antibiotics may shorten the duration of illness.

Other Resources

Indiana State Department of Health Quick Fact Link:

<http://www.in.gov/isdh/21177.htm>

Centers for Disease Control and Prevention (CDC) Link:

<http://www.cdc.gov/nczved/divisions/dfbmd/diseases/campylobacter/>

Cryptosporidiosis



Clinical Description

Cryptosporidiosis is a diarrheal disease caused by microscopic parasites of the genus *Cryptosporidium*. The most common species that infect humans are *Cryptosporidium parvum* and *Cryptosporidium hominis*. Symptoms can include watery diarrhea, stomach cramps, fever, nausea, slight fever, weight loss, and vomiting. In healthy people, symptoms usually last about 2 weeks or less. However, it is common for symptoms to fade and then return. This relapse of illness can continue for up to 30 days.

Incubation Period

Symptoms usually begin 7 days (range of 1-12 days) after a person becomes infected.

Mode of Transmission

Cryptosporidium is transmitted by the fecal-oral route.

Period of Communicability

Some people with cryptosporidiosis may not have any symptoms, but they can still pass the disease to others. After infection, people can shed *Cryptosporidium* in their stool for months. People with weakened immune systems may not be able to clear the infection. This may lead to prolonged disease and even death.

Exclusion / Attendance

Symptomatic persons diagnosed with *Cryptosporidium* or symptomatic persons linked by person, place, or time to a confirmed case are excluded from attending school until:

- Asymptomatic for at least 24 hours
- Disease prevention education provided by the local health department
- Completion of antiparasitic therapy

For more information, please see the Communicable Disease Reporting Rule 410 IAC 1-2.3 Sec. 61

http://www.in.gov/isdh/files/comm_dis_rule.pdf.

Prevention / Care

- Encourage frequent hand washing, particularly after using the restroom, assisting someone with diarrhea and/or vomiting, after contact with animals, after swimming and before and after food preparation (please refer to the ISDH [Quick Facts about Hand Washing](#))
- Enforce exclusion of ill students and staff members.

Other Resources

Indiana State Department of Health Quick Fact Link:

<http://www.in.gov/isdh/21270.htm>

Centers for Disease Control and Prevention (CDC) Link:

<http://www.cdc.gov/crypto/index.html>



E. coli Infection (Shiga-toxin producing and HUS)

Clinical Description

Escherichia coli (*E. coli*) infection is a gastrointestinal disease caused by strains of *E. coli* bacteria. The most severe infection is caused by *E. coli* strains that produce a toxin, known as Shiga-toxin. The most common strain of Shiga-toxin producing *E. coli* (STEC) in North America is 0157:H7. Symptoms can include bloody or non-bloody diarrhea, stomach cramps, low-grade fever, nausea, slight fever, weight loss, and vomiting. Some people may only have mild diarrhea without blood or no symptoms at all. Antimicrobial therapy has not been proven to be beneficial to treat STEC infections. Fluid replacement is the most important part of treatment.

Approximately 8% of people infected with STEC can develop a condition called hemolytic uremic syndrome (HUS). This condition is very serious and can lead to kidney failure and death. Children under 5 years of age and the elderly are more likely to develop this condition.

Incubation Period

Symptoms usually begin 3-4 days (range of 2-10 days) after exposure and last for approximately 5-10 days.

Mode of Transmission

E. coli is transmitted by contaminated food or beverages or person-to-person by the fecal-oral route.

Period of Communicability

A person can spread *E. coli* during the acute illness and can shed *E. coli* in stool for up to 3 weeks after symptoms resolve.

Exclusion / Attendance

Symptomatic persons diagnosed with STEC or HUS or symptomatic persons linked by person, place, or time to a confirmed case are excluded from attending school until:

- Asymptomatic for least 24 hours
- Disease prevention education provided by the local health department

For more information, please see the Communicable Disease Reporting Rule 410 IAC 1-2.3 Sec. 66

http://www.in.gov/isdh/files/comm_dis_rule.pdf.

Prevention / Care

- Encourage frequent hand washing, particularly after using the restroom, assisting someone with diarrhea and/or vomiting, after contact with animals, after swimming and before and after food preparation (please refer to the ISDH [Quick Facts about Hand Washing](#))
- Enforce exclusion of ill students and staff members.

Other Resources

Indiana State Department of Health Quick Fact Link:

<http://www.in.gov/isdh/21361.htm>

Centers for Disease Control and Prevention (CDC) Link:

<http://www.cdc.gov/ecoli/>

Giardiasis



Clinical Description

Giardiasis is a diarrheal disease caused by the microscopic parasite *Giardia intestinalis*.

Symptoms can include diarrhea, gas, greasy stools that tend to float, bloating, stomach cramps, fever, nausea, and constipation. In healthy people, symptoms usually last about 2 - 6 weeks. Persons can be asymptomatic.

Incubation Period

Symptoms usually begin within 7-10 days (range of 3-25 days) after exposure.

Mode of Transmission

Giardia is transmitted by contaminated food or water or person-to-person by the fecal-oral route.

Period of Communicability

A person can spread *Giardia* during acute (symptomatic) illness. Infected people can also carry *Giardia* in their bodies for weeks or months with or without symptoms and unknowingly infect others.

Exclusion / Attendance

Symptomatic persons diagnosed with *Giardia* or symptomatic persons linked by person, place, or time to a confirmed case are excluded from attending school until:

- Asymptomatic for at least 24 hours
- Case prevention education provided by the local health department
- Completion of antiparasitic therapy

For more information, please see the Communicable Disease Reporting Rule 410 IAC 1-2.3 Sec. 66.5

http://www.in.gov/isdh/files/comm_dis_rule.pdf .

Prevention / Care

- Encourage frequent hand washing, particularly after using the restroom, assisting someone with diarrhea and/or vomiting, after contact with animals after swimming and before and after food preparation (please refer to the ISDH [Quick Facts about Hand Washing](#))
- Enforce exclusion of ill students and staff members.

Other Resources

Indiana State Department of Health Quick Fact Link:

<http://www.in.gov/isdh/21380.htm>

Centers for Disease Control and Prevention (CDC) Link:

www.cdc.gov/ncidod/dpd/parasites/giardiasis/default.htm

Hepatitis A Infection



Clinical Description

Hepatitis A is a disease of the liver that results from infection with the *Hepatitis A virus*. Symptoms can include diarrhea, nausea, vomiting, fatigue, stomach cramps, fever, dark urine, pale, clay-colored stool, loss of appetite, and jaundice. Sometimes a person can recover and become ill again (relapse) for as long as 12 months. However, people will eventually recover, and there is no long-term carrier state with Hepatitis A infection. Some people, especially children, may have no symptoms but can still spread the virus to others.

Incubation Period

Symptoms usually occur suddenly. Symptoms usually begin 28-30 days (range of 15-50 days) after exposure and usually last less than 2 months.

Mode of Transmission

Hepatitis A is transmitted by the fecal-oral route.

Period of Communicability

A person can spread Hepatitis A 14 days before and 7 days after the onset of jaundice, or if jaundice does not occur, 7 days before and 14 days after the onset of symptoms.

Exclusion / Attendance

Persons diagnosed with Hepatitis A or symptomatic persons linked by person, place, or time to a confirmed case are excluded from attending school during the infectious period until:

- 14 days before or 7 days after onset of jaundice
- 7 days before and 14 days after symptom onset (if no jaundice)
- Case prevention education provided by local health department

For more information, please see the Communicable Disease Reporting Rule 410 IAC 1-2.3 Sec. 72 http://www.in.gov/isdh/files/comm_dis_rule.pdf.

Prevention / Care

Persons recommended for prophylaxis are household and sexual and contacts exposed to food prepared by the case. Passive immunization with immunoglobulin (IG) can be given within 2 weeks of exposure for household, daycare, sexual, and food handler contacts. If IG is not available, persons can also receive the first dose of the Hepatitis A vaccine.

- Encourage frequent hand washing, particularly after using the restroom, assisting someone with diarrhea and/or vomiting, after swimming, and before and after food preparation (please refer to the ISDH [Quick Facts about Hand Washing](#))
- A vaccine is available to prevent Hepatitis A infection in individuals >1 year of age. The vaccine is 100% effective after two doses.

Other Resources

Indiana State Department of Health Quick Fact Link:
<http://www.in.gov/isdh/21931.htm>

Centers for Disease Control and Prevention (CDC) Link:
<http://www.cdc.gov/Hepatitis/ChooseA.htm>

Norovirus Infection

Clinical Description

Norovirus is a gastrointestinal disease caused by viruses from the genus *Norovirus*. Symptoms can include watery diarrhea, stomach cramps, nausea, vomiting, headache, muscle aches, and fatigue. Most cases have no, or slight, fever. Illness is self-limiting and symptoms generally last 24-48 hours. Although often termed “stomach flu”, viral gastroenteritis should not be confused with influenza, which is a respiratory illness.

Incubation Period

Symptoms usually begin 24-48 hours (range of 12-72 hours) after exposure.

Mode of Transmission

Norovirus is transmitted by the fecal-oral route.

Period of Communicability

A person can spread *Norovirus* when experiencing symptoms and up to 72 hours after recovery. Some studies indicate that those infected can shed virus up to two weeks after recovery. Only a very small dose of virus is needed to cause infection.

Exclusion / Attendance

It is recommended that persons with diarrhea and/or vomiting be excluded from attending school until asymptomatic.

Prevention / Care

- Encourage frequent hand washing, particularly after using the restroom, assisting someone with diarrhea and/or vomiting, after swimming, and before and after food preparation (please refer to the ISDH [Quick Facts about Hand Washing](#)).
- Enforce exclusion of ill students or staff members.
- Inform caregiver of child to seek evaluation by a medical provider if experiencing signs of dehydration.

Other Resources

Indiana State Department of Health Quick Fact Link:

<http://www.in.gov/isdh/22189.htm>

Centers for Disease Control and Prevention (CDC) Link:

http://www.cdc.gov/ncidod/diseases/submenus/sub_norwalk.htm

Salmonellosis



Clinical Description

Salmonellosis is a diarrheal disease caused by bacteria from the genus *Salmonella*. Symptoms can include diarrhea, nausea, vomiting, stomach cramps, and fever. Most people recover within 4 to 7 days without medical treatment.

Incubation Period

Symptoms usually begin 12-36 hours (range of 6-72 hours) after exposure.

Mode of Transmission

Salmonella is transmitted by undercooked or contaminated food or beverages, person-to-person by the fecal-oral route, and contact with infected or carrier animals and reptiles.

Period of Communicability

A person can spread *Salmonella* at anytime while symptomatic. Infected people may carry *Salmonella* in their bodies for weeks or months without symptoms and unknowingly infect others.

Exclusion / Attendance

Persons diagnosed with *Salmonella* or symptomatic persons linked by person, place, or time to a confirmed case are excluded from attending school until:

- Asymptomatic for at least 24 hours
- Case prevention provided by the local health department

For more information, please see the Communicable Disease Reporting Rule 410 IAC 1-2.3 Sec. 96

http://www.in.gov/isdh/files/comm_dis_rule.pdf.

Prevention / Care

- Encourage frequent hand washing, particularly after using the restroom, assisting someone with diarrhea and/or vomiting, after contact with animals after swimming and before and after food preparation (please refer to the ISDH [Quick Facts about Hand Washing](#)).
- Enforce exclusion of ill students and staff members.

Other Resources

Indiana State Department of Health Quick Fact Link:

<http://www.in.gov/isdh/22415.htm>

Centers for Disease Control and Prevention (CDC) Link:

<http://www.cdc.gov/salmonella/>

Shigellosis



Clinical Description

Shigellosis is an infectious disease caused by bacteria from the genus *Shigella*. Symptoms can include diarrhea, blood, pus, or mucus in the stool, sudden stomach cramps, nausea, vomiting, and fever. In general, illness lasts 4 to 7 days, and cases should be treated with appropriate antimicrobial therapy to reduce shedding. Antibiotic resistance is common, so antibiotic sensitivities are strongly recommended.

Incubation Period

Symptoms usually begin 24-72 hours (range of 12 hours to 5 days) after exposure.

Mode of Transmission

Shigella is transmitted by the fecal-oral route.

Period of Communicability

A person can spread *Shigella* at anytime while symptomatic and continue to shed *Shigella* in their stool for several weeks after symptoms resolve if not treated with appropriate antibiotics. Some people may have no symptoms but can still spread the infection to others.

Exclusion / Attendance

Persons diagnosed with *Shigella* or symptomatic persons linked by person, place, or time to a confirmed case are excluded from attending school until:

- Asymptomatic for at least 24 hours
- Case prevention provided by the local health department
- Completion of antimicrobial therapy
- 48 hours after completion of antimicrobial therapy, 2 negative stool samples collected more than 24 hours apart

For more information, please see the Communicable Disease Reporting Rule 410 IAC 1-2.3 Sec. 97

http://www.in.gov/isdh/files/comm_dis_rule.pdf.

Prevention / Care

- Encourage frequent hand washing, particularly after using the restroom, assisting someone with diarrhea and/or vomiting, after swimming, and before and after food preparation (please refer to the ISDH [Quick Facts about Hand Washing](#)).
- Enforce exclusion of ill students and staff members.
- Treatment with appropriate antibiotics may shorten the duration of illness.

Other Resources

Indiana State Department of Health Quick Fact Link:

<http://www.in.gov/isdh/22417.htm>

Centers for Disease Control and Prevention (CDC) Link:

<http://www.cdc.gov/nczved/divisions/dfbmd/diseases/shigellosis/>

Other Conditions

Aseptic Meningitis

Viral Meningitis

Clinical Description

Viral meningitis is a disease marked by acute inflammation of the lining of the brain and spinal cord accompanied by symptoms that can include stiff neck, fever, headache, photophobia, vomiting, and fatigue. Most cases of viral meningitis are caused by members of a group of viruses known as enteroviruses. Often cases of viral meningitis are linked to less severe cases of upper respiratory illness and/or rash. Viral meningitis is not particularly contagious, although small clusters of cases can occur in the school setting usually in the late summer/early fall.

Incubation Period

The incubation period varies depending on the virus involved. Enteroviral meningitis has an incubation period of 3-6 days.

Mode of Transmission

Transmission, when it does occur, is usually person-to-person by airborne droplets and direct contact with nose and throat discharges. Enteroviral meningitis can also be spread by the fecal-oral route for several weeks after the child has recovered.

Period of Communicability

The period of communicability varies depending on the virus.

Exclusion / Attendance

Almost all cases of viral meningitis are hospitalized during the acute stage of illness. It may be prudent to exclude from school attendance until a complete recovery is made.

Prevention / Care

- Educate caregiver concerning urgency of receiving medical evaluation.
- Encourage frequent hand-washing and prompt disposal of used tissues.
- Ensure good personal hygiene is being practiced by students, especially among groups such as athletic teams where water bottle sharing and other close contact situations are likely.
- Consider sending informational letters to caregivers (sample available from local health or state health departments).
- Monitor the number of cases in schools and report instances of 2 or more cases that occur with a common affiliation (same class, sports team, etc.).

Other Resources

Indiana State Department of Health Quick Fact Link:

<http://www.in.gov/isdh/22682.htm>

Centers for Disease Control and Prevention (CDC) Link:

<http://www.cdc.gov/meningitis/about/faq.html>

Mononucleosis

Epstein-Barr Virus

Clinical Description

Mononucleosis is a disease caused by the Epstein-Barr virus (EBV). Symptoms can include fever, exudative pharyngitis, swollen glands, and atypical lymphocytes in the blood. The spectrum of disease is extremely variable. Infections may go unrecognized in young children, whereas, in older children and young adults, clinical illness with the typical signs and symptoms are more common. An enlarged spleen is also typical in cases among adolescents and young adults. Occasionally, infection may be accompanied by a rash, which is more likely to occur in people treated with ampicillin. Complications may include aseptic meningitis, encephalitis, or Guillian-Barre syndrome. Fatigue lasting a few weeks may follow the infection. The virus is a member of the herpesvirus group.

Incubation Period

From 4-6 weeks following exposure.

Mode of Transmission

Mononucleosis is spread by direct contact with the saliva of an infected person.

Period of Communicability

The period of communicability is indeterminate. A person may spread the virus through the exchange of saliva for many months after infection.

Exclusion / Attendance

It may be prudent to exclude persons while fever and malaise are present. This may be as long as 1-2 weeks. It is also recommended that students who have mononucleosis avoid sports activities for at least a month after symptoms have resolved because of the increased risk of a ruptured spleen. There is no need to isolate a person with mononucleosis.

Prevention / Care

- There is no specific treatment for mononucleosis.
- Some interventions to assist in relief of symptoms include:
 - o Student should get plenty of bed rest.
 - o Drink lots of water and fruit juices to relieve fever and prevent dehydration.
 - o Gargle with salt water to relieve sore throat.
 - o Consider over-the-counter pain relievers. Do not give aspirin to children under the age of 16 years.

Other Resources

Indiana State Department of Health Quick Fact Link:

<http://www.in.gov/isdh/22124.htm>

Centers for Disease Control and Prevention (CDC) Link:

<http://www.cdc.gov/ncidod/diseases/ebv.htm>

Tuberculosis



Clinical Description

Tuberculosis (TB) is a disease caused by the bacteria *Mycobacterium tuberculosis*. Although TB usually infects the lungs, the disease can also affect other parts of the body such as the kidneys or spine. Without proper treatment, TB can be fatal.

The symptoms of active TB disease of the lungs include:

- a bad cough that lasts 3 weeks or longer
- coughing up blood (hemoptysis)
- night sweats
- fever
- pain in the chest
- weight loss
- weakness or fatigue
- chills

People with latent TB infection (LTBI) have TB bacteria in their bodies; however, because the bacteria are not active, these individuals are not sick. People with LTBI have no symptoms of active TB disease, and they cannot spread the bacteria to others. However, they may develop active TB disease in the future.

Incubation Period

Progression to active disease is greatest in the first 2 years after infection, but may not occur for decades.

Mode of Transmission

People with active TB disease of the lungs can release TB bacteria into the air when they cough, sneeze, speak, or sing. These bacteria can stay in the air for several hours. Persons who breathe in the air that contains these TB bacteria can become infected if the bacteria reach their lungs. Transmission from children younger than 10 years is unusual.

Period of Communicability

A person is able to spread TB from an assigned date of 3 months prior to symptom onset or a positive lab report. An individual is considered no longer communicable after effective treatment has been demonstrated for ≥ 2 weeks causing a significant reduction in symptoms.

Exclusion / Attendance

Active pulmonary tuberculosis cases and suspects who are sputum-smear negative, are not coughing, are clinically improving, and are known to be on adequate tuberculosis chemotherapy are defined as noninfectious. All other pulmonary tuberculosis cases and suspects must be isolated until no longer infectious. Infectious persons are excluded from school. For more information, please see the Communicable Disease Reporting Rule 410 IAC 1-2.3 Sec.106 (2)

[http://www.in.gov/isdh/files/comm_dis_rule\(1\).pdf](http://www.in.gov/isdh/files/comm_dis_rule(1).pdf)

Prevention / Care

- Avoid close contact or spending prolonged time with known active TB patients while infectious.
- Treatment of LTBI reduces the risk that TB infection will progress to active TB disease. Immunocompromised persons and children <5 years old are at high risk for developing active TB disease once infected. Every effort should be made to begin appropriate and complete appropriate treatment for LTBI.

Other Resources

Indiana State Department of Health Quick Fact Link:

<http://www.in.gov/isdh/22442.htm>

Centers for Disease Control and Prevention (CDC) Link:

<http://www.cdc.gov/tb/default.htm>

Vaccine Preventable Diseases

Diphtheria



Clinical Description

Diphtheria is an acute bacterial disease of the oral cavity, nose, or skin caused by *Corynebacterium diphtheriae*. Symptoms of respiratory diphtheria may begin slowly and include headache and general discomfort, fever, sore throat, and a yellow-white or gray membrane-like covering in the back of the throat. Other symptoms can include swollen lymph nodes in the neck and clear or bloody nasal discharge. Respiratory diphtheria is a serious infection and may be fatal.

Incubation Period

The incubation period is usually 2-7 days, occasionally longer.

Mode of Transmission

Respiratory diphtheria is spread by contact with the nose or throat secretions of an infected person.

Period of Communicability

A person can spread diphtheria usually 2 weeks or less; rarely, carriers may shed organisms for up to 6 months. Effective antibiotic therapy promptly terminates shedding.

Exclusion / Attendance

Individuals infected with diphtheria will be considered contagious until 2 cultures taken 24 hours apart are negative and they have completed a recommended course of antibiotics. Close contacts should be observed for seven days for signs and symptoms of disease, cultured for *C. diphtheriae*, and treated with oral antibiotics for prophylaxis. Contacts of diphtheria cases who are child care providers or food handlers are excluded from work until laboratory testing indicates they are not carriers. For more information, please see the Communicable Disease Reporting Rule 410 IAC 1-2.3 Sec. 63

Prevention / Care

There are safe and effective vaccines available to prevent diphtheria. Children should receive the recommended doses of DTaP, DT, or Tdap vaccines in order to build and boost immunity against diphtheria infections. School immunization requirements for diphtheria can be found at:

<http://www.in.gov/isdh/17094.htm>

Other Resources

Indiana State Department of Health Quick Fact Link:

<http://www.in.gov/isdh/21252.htm>

Centers for Disease Control and Prevention (CDC) Links:

http://www.cdc.gov/ncidod/dbmd/diseaseinfo/diphtheria_t.htm

<http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/dip.pdf>

<http://www.cdc.gov/vaccines/vpd-vac/diphtheria/default.htm>

Influenza

Clinical Description

Influenza is a respiratory disease caused by influenza viruses. Influenza viruses cause an infection of the upper airway and lungs. It can cause mild to severe illness, and at times can lead to death. Symptoms can include fever, cough, sore throat, muscle aches and headaches.

Incubation Period

The incubation period is usually 1-3 days.

Mode of Transmission

Flu viruses spread mainly from person to person through coughing or sneezing. Influenza viruses are released into the air and can be inhaled by others. Sometimes people may become infected by touching something with flu viruses on it and then touching their mouth or nose.

Period of Communicability

A person can spread the flu 1 day *before symptoms develop* until 5 days after symptoms appear.

Exclusion / Attendance

Exclusion of the student should be based on the condition of the child and if there is a school policy that warrants exclusion for symptoms of influenza. There is no state law that mandates school exclusion.

Prevention / Care

- The best protection is an annual flu vaccination before flu season starts. Each year the vaccine contains the types of flu virus predicted to cause illness in the coming year. Therefore, it is important to be vaccinated each year. The vaccine takes 14 days for the full protective effect to occur.
- Teach students and staff to cough or sneeze into one's elbow or upper sleeve or use a tissue when coughing or sneezing. Immediately discard the used tissue in the wastebasket.
- Encourage frequent hand washing, particularly after coughing or sneezing. An alcohol-based hand cleaner will also work if water is not available.
- Encourage ill students and staff members not to attend school.

Other Resources

Indiana State Department of Health Quick Fact Link:

<http://www.in.gov/isdh/22104.htm>

Centers for Disease Control and Prevention Links:

<http://www.cdc.gov/flu/>

<http://www.cdc.gov/flu/keyfacts.htm>

<http://www.cdc.gov/flu/protect/habits.htm>

Measles Rubeola



Clinical Description

Measles is an extremely contagious viral respiratory illness. Measles is characterized by a rash beginning at the hairline that spreads downward over the entire body by the 3rd-7th day of the infection. Symptoms can include cough, runny nose, conjunctivitis, fatigue, and fever prior to the development of Koplik's spots. Measles may cause serious complications, including ear infection, pneumonia, and encephalitis (brain swelling). In some cases, measles may be fatal.

Incubation Period

The incubation period is usually about 10 days, varying from 7-18 days.

Mode of Transmission

Measles can spread through contact with droplets in the air from an infected person. These droplets can remain infective up to two hours in the air.

Period of Communicability

A person can spread measles 4 days prior to the appearance of the rash up to 4 days following the appearance of the rash.

Exclusion / Attendance

Infected persons are excluded from school and contact with other people outside the household for four days after appearance of the rash. Students who have not presented proof of immunity against measles are excluded from a given date until acceptable proof of immunity, or in the case of medical or religious exemptions, until 14 days after the onset of the last reported measles case. Previously unvaccinated children who are not vaccinated within 72 hours of exposure are excluded for 14 days after completing vaccination. For more information on requirements for school exclusions, please see the Communicable Disease Reporting Rule 410 IAC 1-2.3 Sec. 83 at: http://www.in.gov/isdh/files/comm_dis_rule.pdf.

Prevention / Care

- Vaccinate with a single dose of live, attenuated measles vaccine at 12-15 months of age and revaccinate with a second dose at 4-6 years of age. School immunization requirements for measles can be found at: <http://www.in.gov/isdh/17094.htm>
- Check immunization records for all students to assure they have received 2 doses of a measles containing vaccine. To prevent transmission identify non immune students (medical or religious exemptions) for possible exclusion.
- Inform high risk people within the school when a case of measles has been identified. Exposed pregnant women should be tested for rubeola immunity, if unknown, and should be counseled by their healthcare provider.
- School personnel planning a pregnancy should be vaccinated 28 days prior to pregnancy.

Other Resources

Indiana State Department of Health Quick Fact Link:

<http://www.in.gov/isdh/22120.htm>

Centers for Disease Control and Prevention (CDC) Links:

http://www.cdc.gov/ncidod/diseases/submenus/sub_measles.htm

<http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/meas.pdf>

<http://www.cdc.gov/measles/index.html>

Meningococcal Disease

Meningococcal Meningitis or Meningococemia

Clinical Description

Meningococcal meningitis is an acute inflammation of the lining of the brain and spinal cord caused by *Neisseria meningitidis* (meningococcus) bacteria. Symptoms include stiff neck, high fever, headache, nausea, vomiting, and possibly a petechial rash. Meningococemia is a life threatening bloodstream infection caused by *N. meningitidis*. Both meningococcal meningitis and meningococemia are considered medical emergencies.

Incubation Period

The incubation period is short, ranging from 2 to 10 days, most commonly 3-4 days.

Mode of Transmission

Meningococcal bacteria are not particularly contagious. Spread, when it does occur, is usually person-to-person by respiratory droplets from the nose and throat of infected people. Saliva exchange is the most common method of transmission. Transmission is highest among household contacts. Up to 10% of the general population are carriers of meningococcus.

Period of Communicability

A person who is untreated or a carrier can spread the bacteria until the meningococcus is no longer present in discharge from the nose and mouth. The bacteria will disappear from the nose and throat within 24 hours after the initiation of appropriate antibiotic therapy.

Exclusion / Attendance

There are no specific exclusion provisions found in Indiana communicable disease laws or rules for meningococcal meningitis. Almost all cases of meningococcal diseases are hospitalized and treated with antibiotics, which eliminates carriage. Close contacts of cases that are considered high-risk should be given prophylactic antibiotics to prevent possible infection. Asymptomatic contacts do not need to be excluded from school. For information on laws and rules regarding meningococcal disease see Rule 410 IAC 1-2.3 Sec. 85: at http://www.in.gov/isdh/files/comm_dis_rule.pdf

Prevention / Care

- Immediately call caregiver if student develops classic meningeal symptoms (fever, severe headache, stiff neck) and provide education concerning urgency of receiving medical evaluation.
- Prophylactic antibiotic treatment is needed for high risk close contacts and family members and should be started within 24 hours of a suspected case of meningococcal disease.
- Prophylactic antibiotic treatment is not recommended for school contacts in most circumstances – consult local or state health authorities for guidance regarding who should receive prophylaxis.
- Consider sending letter to parents (sample letter available from the ISDH).
- Meningococcal vaccine is recommended for all persons between the ages of 11 and 18 years and young adults planning to live in college dormitories or military barrack settings. School immunization requirements for meningococcal diseases can be found at: <http://www.in.gov/isdh/17094.htm>
- Schools are required to notify parents each year about meningococcal disease and the availability of meningococcal vaccine. See IC 20-30-5-18 at: <http://www.in.gov/legislative/ic/code/title20/ar30/ch5.html>

Other Resources

Indiana State Department of Health Quick Fact Link:

http://www.in.gov/isdh/healthinfo/meningococcal_disease.htm

Centers for Disease Control and Prevention (CDC) Link:

http://www.cdc.gov/ncidod/diseases/submenus/sub_meningitis.htm

Mumps

Clinical Description

Mumps is a highly contagious viral illness. The main manifestation of mumps infection is painful inflammation of the parotid or other salivary glands that lie just above the back angle of the jaw, and below the ear. Involvement can be one-sided or bilateral. Infected people often have fever, headache, and mild respiratory symptoms. Some post-pubertal males may have testicular pain. Symptoms usually resolve after 7-10 days. Approximately one-third of infected, unvaccinated persons do not show clinical signs of salivary gland swelling and may manifest primarily as a respiratory tract infection.

Incubation Period

The incubation period is from 12 to 25 days, averaging 18 days.

Mode of Transmission

Transmission is by droplet spread and by direct contact with saliva from an infected person. Droplet contact and close person-to-person contact are the modes of transmission.

Period of Communicability

A person can spread mumps 7 days prior to the onset of parotitis through 9 days after the onset of symptoms; however, a person is most contagious 2 days prior to the onset of parotitis to 4 days after the onset.

Exclusion / Attendance

Infected persons are excluded from school and contact with persons outside the household for 9 days after onset of swelling. Exposed individuals are excluded from school or the workplace from the 12th to 25th day after exposure to prevent spread to other individuals. For more information, please see the Communicable Disease Reporting Rule 410 IAC 1-2.3 Sec. 86.

http://www.in.gov/isdh/files/comm_dis_rule.pdf

Prevention / Care

- Vaccinate with a single dose of live, attenuated mumps vaccine at 12-15 months of age and revaccinate with a second dose at 4-6 years of age. School immunization requirements for mumps can be found at: <http://www.in.gov/isdh/17094.htm>
- Call caregiver of child to ensure child has been evaluated by a health care provider.
- Check immunization records for all students to assure they have received 2 doses of a mumps containing vaccine. To prevent transmission, identify non immune students (medical or religious exemptions) for possible exclusion.
- Mumps during the first trimester of pregnancy has been associated with an increased rate of spontaneous abortion. Exposed pregnant women should be counseled by their health care provider.

Other Resources

Indiana State Department of Health Quick Fact Link:

<http://www.in.gov/isdh/22125.htm>

Centers for Disease Control and Prevention (CDC) Links:

<http://www.cdc.gov/vaccines/vpd-vac/mumps/default.htm>

<http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/mumps.pdf>

Pertussis

Whooping Cough

Clinical Description

Pertussis is a respiratory infection caused by *Bordetella pertussis* bacteria. The disease is characterized by a very distinct pattern. Symptoms begin with a "cold-like" stage characterized by a mild cough, redness of the eyes, runny nose, and low-grade fever. This stage lasts 1-2 weeks. In the next stage, the coughing becomes staccato, and comes in multiple exhausting bursts (paroxysmal cough). Some people may experience vomiting following coughing bursts. In young children, each cough may be followed by a "whooping" sound as the child breathes in. "Whooping" does not occur in all children and adults. This stage lasts 2-4 weeks, followed by a recovery phase of gradually diminishing coughing for 2-3 weeks, but may last for several months.

Incubation Period

The incubation period is from 6 to 20 days, but almost always within 10 days.

Mode of Transmission

Transmission occurs primarily through contact with infectious respiratory secretions. Droplet contact and close person-to-person contact are the modes of transmission.

Period of Communicability

Pertussis is mostly communicable in the early stage of the illness. After three weeks, an individual is considered unable to spread the illness to others. When treated with an appropriate antibiotic, the period of communicability ends after 5 days of appropriate therapy; however, symptoms may remain unless treated in the early stage of illness.

Exclusion / Attendance

Inadequately immunized household contacts less than seven years of age are excluded from schools, day care centers, and public gatherings for 14 days after the last exposure, or until they have received 5 days of appropriate antibiotic therapy. Infected persons not receiving prophylaxis are excluded from schools, day care centers, and public gatherings for 21 days. For more information on student or staff exclusion, please see the Communicable Disease Reporting Rule 410 IAC 1-2.3-Sec. 88 at:

http://www.in.gov/isdh/files/comm_dis_rule.pdf

Prevention

- There are safe and effective vaccines available to prevent diphtheria. Children should receive the recommended doses of DTaP, DT, or Tdap vaccines in order to build and boost immunity against pertussis infections. School immunization requirements for pertussis can be found at: <http://www.in.gov/isdh/17094.htm>
- Appropriate antibiotics can reduce the communicability of disease among individuals with pertussis and close contacts.
- Inform high risk people within the school when a case of pertussis has been identified.

Other Resources

Indiana State Department of Health Quick Fact Link:

<http://www.in.gov/isdh/22191.htm>

Centers for Disease Control and Prevention (CDC) Links:

<http://www.cdc.gov/vaccines/vpd-vac/pertussis/default.htm>

<http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/pert.pdf>

Pneumococcal Disease

Clinical Description

Pneumococcal infections are caused by *Streptococcus pneumoniae* bacteria. These infections can include pneumonia, meningitis, bacteremia, sinus and ear infections. Symptoms can include chills, fever, headache, earache, pain in the chest, cough, and perhaps disorientation.

Incubation Period

The incubation period is normally 1-3 days.

Mode of Transmission

Transmission occurs primarily through contact with nose or throat secretions from an infected person. It is not spread by casual contact or by simply breathing the air around an infected person.

Period of Communicability

A person can spread the bacteria as long as the organism is in the respiratory tract or until 24 hours after the initiation of antibiotic therapy.

Exclusion / Attendance

There are no specific exclusion provisions found in Indiana communicable disease laws or rules for pneumococcal disease.

Prevention / Care

- Vaccinate all children with the 13-valent vaccine at 2, 4, and 6 months with a booster at 12 – 15 months according to the routine childhood vaccination schedule.
- Vaccinate high-risk children (sickle cell anemia, HIV infection, chronic lung or heart disease) over the age of 2 years with the childhood 23-valent conjugate pneumococcal vaccine (given through 59 months of age) or a 23-valent polysaccharide pneumococcal vaccine.
- Enforce hand washing and disposal of used tissues.

Other Resources

Indiana State Department of Health Quick Fact Link:

<http://www.in.gov/isdh/22230.htm>

Centers for Disease Control and Prevention (CDC) Links:

<http://www.cdc.gov/vaccines/vpd-vac/pneumo/dis-faqs.htm>

<http://www.cdc.gov/vaccines/vpd-vac/pneumo/default.htm>

Rubella

German Measles

Clinical Description

Rubella is a mild rash illness caused by the rubella virus. Rubella is characterized by a rash that often fades or turns red and is most evident after a hot shower. Symptoms can include fever, joint pain (in adolescents and adults), and enlarged and tender lymph nodes at the back of the neck. Rubella is also the cause of significant congenital defects in infants whose mothers are exposed during pregnancy.

Incubation Period

The incubation period is normally from 14-17 days, but can be as long as 21 days.

Mode of Transmission

Transmission occurs through direct or droplet contact with infectious nasopharyngeal secretions.

Period of Communicability

An infected person is contagious from 7 days prior to the appearance of the rash through 4 days after the rash appears.

Exclusion / Attendance

Infected persons are excluded from school and contact with other individuals outside the household for seven days after the onset of rash. Students without proof of immunity (medical or religious exemptions) are excluded from school until 23 days after the onset of the last rubella case. For more information on exclusion procedures and control of rubella in schools, please see the Communicable Disease Reporting Rule 410 IAC 1-2.3 Sec. 95. http://www.in.gov/isdh/files/comm_dis_rule.pdf

Prevention / Care

- Vaccinate with a single dose of live, attenuated rubella vaccine at 12-15 months of age and revaccinate with a second dose at 4-6 years of age. School immunization requirements for rubella can be found at: <http://www.in.gov/isdh/17094.htm>
- Check immunization records for all students to assure they have received 2 doses of a measles containing vaccine. To prevent transmission identify non immune students (medical or religious exemptions) for possible exclusion.
- Inform high risk people within the school when a case of rubella has been identified. Exposed pregnant women should be tested for rubella immunity, if unknown, and should be counseled by their healthcare provider.
- School personnel planning a pregnancy should be vaccinated 28 days prior to pregnancy.
- Call caregiver of child to ensure child has been evaluated by a health care provider.

Other Resources

Indiana State Department of Health Quick Fact Link:

<http://www.in.gov/isdh/22237.htm>

Centers for Disease Control and Prevention (CDC) Links:

<http://www.cdc.gov/vaccines/vpd-vac/rubella/default.htm>

<http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/rubella.pdf>

Varicella Chickenpox



Clinical Description

Varicella is a viral illness that is very contagious and is caused by the herpes zoster virus. Early symptoms can include fever and fatigue which begin about 10-21 days after exposure. These symptoms are followed by the appearance of flat, red spots which progresses into an itchy, rash with fluid-filled vesicles that is characteristic of the disease. Lesions appear in crops over several days and lesions will be present in several stages of development. As varicella vaccine coverage increases, most cases are now break-through cases, which are often less severe with less than 50 lesions and do not progress to the vesicular stage. Varicella can cause serious complications including pneumonia, encephalitis, secondary bacterial infections, and even death.

Incubation Period

The incubation period normally ranges from 10-21 days, but most is commonly 14-16 days.

Mode of Transmission

Transmission occurs primarily through contact with infectious respiratory secretions and airborne droplets. Direct contact with open vesicles can also transmit infection.

Period of Communicability

A person can spread the herpes zoster virus 2-5 days before the onset of the rash until all of the lesions have crusted over or faded, typically 7 days.

Exclusion / Attendance

Infected persons are excluded from schools and day care centers, public gatherings, and contact with susceptible persons until vesicles become dry or in cases of mild, "break-through" disease until the lesions have faded or disappeared. For more information, please see the Communicable Disease Reporting Rule 410 IAC 1-2.3 sec 110 http://www.in.gov/isdh/files/comm_dis_rule.pdf.

Prevention / Care

- Vaccinate with a single dose of live, attenuated varicella vaccine at 12-15 months of age and revaccinate with a second dose at 4-6 years of age. School immunization requirements for varicella can be found at: <http://www.in.gov/isdh/17094.htm>
- Review immunization records to identify susceptible individuals or those who have received only one dose of varicella vaccine.
- Varicella vaccine can be administered within 3-5 days of an exposure to prevent or modify the severity of disease.
- School personnel planning a pregnancy should be immunized 3 months prior to pregnancy.
- Promptly report all suspected individual cases and outbreaks to the local health department. Laboratory testing is recommended during outbreak situations.

Other Resources

Indiana State Department of Health Quick Fact Link:

<http://www.in.gov/isdh/21181.htm>

Centers for Disease Control and Prevention (CDC) Links:

<http://www.cdc.gov/vaccines/vpd-vac/varicella/dis-fags-gen.htm>

<http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/varicella.pdf>

Communicable Disease Summary Chart

Disease / Condition	Signs / Symptoms	Incubation Period	Mode of Transmission	Period of Communicability	Exclusion / Attendance	Prevention
Aseptic (Viral) Meningitis	Fever, severe headache and stiff neck	Varies depending on virus or cause. For enteroviral meningitis, 3-6 days	Person-to-person by airborne droplets and direct contact with nose and throat discharges	Varies depending on virus or other organism	Patients generally too sick to attend school and can return when recovered	Hand washing and avoid direct contact with nasal and throat discharges
 Campylobacteriosis	Diarrhea, sometimes bloody, stomach cramps, fever, nausea, and vomiting	2-5 days	Fecal-oral or foodborne	While symptomatic	Exclude while symptomatic	Hand washing and food safety
Conjunctivitis	Redness of eye involving tearing, irritation, swelling and discharge	Bacterial – 1 to 3 days Viral – 12 hours to 3 days	Contact with discharge from conjunctivae or upper respiratory tract of infected persons. Fingers and inanimate objects can also be sources of transmission	Possibly up to 14 days but depending on cause	Exclusion recommended until examination by physician and then approved for readmission	Use precautions in handling eye discharge and hand washing
 Cryptosporidiosis	Watery diarrhea, stomach cramps, fever, nausea, slight fever, weight loss, and vomiting	7 days (range of 1-12 days)	Fecal-oral	While shedding, up to several months	Exclude until completion of effective antiparasitic therapy	Hand washing and water precautions

Communicable Disease Summary Chart

Disease / Condition	Signs / Symptoms	Incubation Period	Mode of Transmission	Period of Communicability	Exclusion / Attendance	Prevention
Diphtheria 	Fever, sore throat, gray or yellow membrane on the throat	2-7 days	Contact with respiratory droplets	2 weeks or less	<i>Index Case:</i> Excluded until 2 cultures 24 hrs apart are negative. <i>Contacts:</i> Observe, culture, and treat	Vaccinations up-to-date for DT, Td, DTaP, or Tdap.
Erythema Infectiosum (Fifth Disease)	Facial “slapped-cheek” rash with “lacy” rash on trunk and limbs	Normally 4-14 days, but up to 20 days	Contact with infectious upper respiratory secretions	The week prior to appearance of rash	Not recommended unless child has fever	Hand washing and proper disposal of used tissues
<i>E. coli</i> infection (shiga-toxin producing) and HUS 	Bloody or non-bloody diarrhea, stomach cramps, and little or fever, nausea, slight fever, weight loss, and vomiting	3-4 days (range of 2-10 days)	Fecal-oral or foodborne	While shedding, up to 3 weeks	Exclude while symptomatic	Hand washing and food safety
Giardiasis 	Diarrhea, gas, greasy stools that tend to float, bloating, stomach cramps, fever, nausea, and constipation	7-10 days (range of 3-25 days)	Fecal-oral	While shedding, up to several months	Exclude until completion of effective antiparasitic therapy	Hand washing and water precautions
Hand, Foot and Mouth Disease	Fever, malaise, sore throat and red blister spots that turn into ulcers in the mouth	3-5 days	Fecal-oral or direct contact with infectious respiratory secretions.	During illness up to several weeks	Exclude during acute illness or while child who has blisters drools from the mouth or has weeping lesions on hands	Hand washing and avoid direct contact with nasal and throat discharges

Communicable Disease Summary Chart

Disease / Condition	Signs / Symptoms	Incubation Period	Mode of Transmission	Period of Communicability	Exclusion / Attendance	Prevention
Hepatitis A 	Diarrhea, nausea, vomiting, fatigue, stomach cramps, fever, dark urine, pale, clay-colored stool, loss of appetite, and jaundice	28-30 days (range of 15-50 days)	Fecal-oral	14 days before and 7 days after the onset of jaundice, or if jaundice does not occur, 7 days before and 14 days after the onset of symptoms	Exclude until after the defined infectious period	Hepatitis A vaccine and Hand washing
Hepatitis B 	Malaise, fever, anorexia, nausea, jaundice	60-90 days	Direct contact with infected persons blood or body fluids	1 – 2 months before and after the onset of symptoms	None	Hepatitis B vaccination and Universal Precautions used when there is contact with blood and other body fluids containing blood, semen, or vaginal secretions
Hepatitis C 	Nausea, vomiting, weight loss, fatigue, dark urine, pale stool, jaundice	2 weeks to 6 months	Direct contact with infected persons blood or bodily fluids	At least one week before onset of symptoms and for the rest of their lifetime	None	Universal Precautions used when there is contact with blood and other body fluids containing blood, semen, or vaginal secretions

Communicable Disease Summary Chart

Disease / Condition	Signs / Symptoms	Incubation Period	Mode of Transmission	Period of Communicability	Exclusion / Attendance	Prevention
HIV/AIDS 	Initially viral flu-like symptoms. Many years later (up to 10 years) swollen lymph nodes, fatigue, fever, night sweats, unexplained weight loss, other co-infections, chronic diarrhea	Variable, 1 week to 10 years or longer	Transmission of HIV infected blood, semen, vaginal secretions or breast milk to an uninfected person's broken skin or mucous membranes in enough quantity to allow for the replication of the virus	Shortly after acquisition of the virus and for the rest of their life.	School children with HIV must be allowed to attend school and may only be excluded if the provision is found in IC16-41-9-3 (i.e. a disease that is transmissible through normal school contacts or poses a substantial threat to health and safety of school community).	Education beginning in elementary school Supportive faculty Universal Precautions used when there is contact with blood and other body fluids containing blood, semen, or vaginal secretions
Impetigo	Skin lesions (red bumps) usually around the nose, mouth or extremities. Bumps break open and form a honey-colored crust	1-3 days for streptococcal infection and 4-10 days for staphylococcal infection	Direct contact with secretions from lesions	In untreated cases as long as drainage from lesions occurs.	Recommended to keep child home until 24 hours after antibiotic therapy begun.	Cover draining lesions and wear disposable gloves when applying treatment to infected skin
Influenza	Fever greater than 100 degrees F, headache, tiredness, cough, sore throat, runny or stuffy nose, and muscle aches. Nausea, vomiting, and diarrhea also can occur in children.	1-3 days	Person to person by direct contact with infected secretions or via large or small droplet aerosols	1 day prior to symptoms through 7 days from clinical onset	Exclusion of the student should be based on the condition of the child and if there is a school policy that warrants exclusion for symptoms of influenza.	Immunizations are available for most students and adults unless contraindicated Cover the mouth and nose in the nook of your elbow and discard tissues immediately

Communicable Disease Summary Chart

Disease / Condition	Signs / Symptoms	Incubation Period	Mode of Transmission	Period of Communicability	Exclusion / Attendance	Prevention
Measles 	Fever, runny nose, cough, rash by 3 rd day	10-14 days (Varies 7-18 days)	Contact with respiratory droplets	4 days before rash onset to 4 days after rash onset	Index Case: Excluded until 4 days after rash onset Contacts: Contacts who are not immunized excluded until 14 days after last case.	Vaccine Available 2 doses of measles containing vaccine (MMR)
Meningococcal Disease 	Fever, severe headache and stiff neck	2-10 days: commonly 3-4 days	Direct contact with saliva or respiratory droplets	Until meningococcus is no longer present in nasal/mouth discharge	None	Vaccine Available 1 dose of meningococcal vaccine at 11-12 years of age
Mononucleosis	Fever, exudative pharyngitis, swollen glands	4-6 weeks	Direct contact with saliva of infected person	Indeterminate, could be many months after infection	None	Good personal hygiene and avoiding saliva sharing activities
MRSA	Abcesses, boils	Variable	Direct contact with infected person or inanimate object	Wound drainage very infectious	Yes, if recommended by HCP or if drainage cannot be covered or contained with a dry covering	Hand washing, open areas covered, avoid contact with others' drainage

Communicable Disease Summary Chart

Disease / Condition	Signs / Symptoms	Incubation Period	Mode of Transmission	Period of Communicability	Exclusion / Attendance	Prevention
Mumps 	Swelling and pain of the parotid gland, fever, mild URI symptoms	12-25 days Average of 18 days	Direct contact with saliva or respiratory droplets	2 days before through 9 days after the onset of parotitis	<i>Index case:</i> Exclude for 9 days following the onset of symptoms <i>Contacts:</i> Susceptible contacts shall be excluded from the 12 th – the 25 th day from exposure.	Vaccine Available 2 doses of mumps containing vaccine, (MMR)
Norovirus infection	Watery diarrhea, stomach cramps, nausea, vomiting, headache, muscle aches, and fatigue	24-48 hours (range of 12-72 hours)	Fecal-oral	While shedding, up to 72 hours after symptoms cease	Exclude while symptomatic	Hand washing
Pediculosis (Lice)	Main symptom is itching of scalp. Lice (or eggs) can be identified by close examination of scalp.	Eggs hatch in a week with resultant lice able to multiply within 8-10 days	Direct contact with person who has live infestation or sharing personal belongings that are harboring lice (i.e. hats, scarves)	As long as live lice are present or eggs in hair are within ¼ inch of scalp	No applicable state laws for exclusion. Follow school policy	Inform parents of infestations and proper control measures for home elimination.

Communicable Disease Summary Chart

Disease / Condition	Signs / Symptoms	Incubation Period	Mode of Transmission	Period of Communicability	Exclusion / Attendance	Prevention
Pertussis 	Initial cough, coryza, eye irritation, leading to a progressive cough that comes in bursts, may be followed by a 'whoop'	Usually 10 days, may vary from 6-20 days	Direct contact with infectious respiratory secretions.	From onset of cough and cold-like illness through 5 days of appropriate antibiotic therapy. If not on antibiotics, 21 days from the onset of the cough/cold-like illness.	Symptomatic Index case: Exclude for 5 days while receiving appropriate antibiotic therapy. Symptomatic Contacts of a Confirmed Case: Exclude for 5 days while receiving antibiotic therapy. Asymptomatic Direct Contacts: Do not exclude asymptomatic contacts. They should receive prophylaxis.	Vaccine Available Age appropriate vaccination: DTaP, Tdap Antibiotic prophylaxis for direct contacts
Pneumococcal Disease 	Fever, chills, cough, pain in the chest, disorientation	Normally 1-3 days	Direct contact with the nose and throat secretions of an infected person	Until after 24 hours of antibiotic therapy	None Applicable	Vaccine Available Age appropriate Vaccination Proper hand washing and tissue disposal
Ringworm	Small red bump or papule that spreads outward, taking on the appearance of a red scaly outer ring with a clear center	Depends on type: <i>Tinea capitis</i> -10 to 14 days <i>Tinea corporis</i> and <i>cruris</i> – 4-10 days <i>Tinea pedis</i> – unknown	Direct contact with human or animal source; also less commonly by inanimate objects	As long as lesions are present or viable fungus is present on contaminated objects and surfaces	Generally students can attend school with ringworm infections.	Varies depending on type; certain activities should be restricted. Clean and drain shower areas frequently.

Communicable Disease Summary Chart

Disease / Condition	Signs / Symptoms	Incubation Period	Mode of Transmission	Period of Communicability	Exclusion / Attendance	Prevention
Rubella (German Measles) 	Mild rash illness, significant risk to the fetus	14-17 days	Direct or droplet contact with nose and throat secretions if an infected person	7 days from the appearance of the rash through 4 days afterward	Index Case: Excluded for 7 days after the onset of the rash Susceptible Contacts: Students without proof of immunity shall be excluded until 23 days after last reported case	Vaccine Available 2 doses of a rubella containing vaccine (MMR)
Salmonellosis 	Diarrhea, nausea, vomiting, stomach cramps, and fever	12-36 hours (range of 6-72 hours)	Fecal-oral and foodborne	While symptomatic	Exclude while symptomatic	Hand washing and food safety
Scabies	Itching and blister-like sores in the burrows of the skin	2 – 6 weeks	Direct contact with an infested persons skin, clothing or linens	From infection until eggs/mites are destroyed by treatment	Exclude until the day after treatment	Inform parents of infestations and proper control measures for home elimination. Prophylactic treatment of home contacts
Shigellosis 	Diarrhea, blood, pus, or mucus in the stool, sudden stomach cramps, nausea, vomiting, and fever	24-72 hours (range of 12 hours to 5 days)	Fecal-oral	While shedding, up to several weeks	Exclude until: 1) 2 negative stools, collected 24 hours apart and at least 48 hours after antimicrobial therapy 2) Or after 48 hours of effective antimicrobial therapy	Hand washing

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Shingles (Herpes Zoster)	Rash that develops lesions appearing along nerve pathways	Not applicable	Transmission can occur through direct contact with the rash resulting in a case of varicella.	If lesions are not covered, transmission of varicella disease may occur from 10-21 days following contact	<i>Index Case:</i> Exclude only if the site of infection cannot be covered <i>Susceptible Contacts:</i> Do not Exclude	2 doses of age appropriate varicella vaccine One dose of the Zostavax vaccine for adults 60 and over
Scarlet Fever and Streptococcal Sore Throat	Fever, exudative tonsillitis or pharyngitis and tender cervical nodes; in addition, a fine-red rash occurs with scarlet fever	Usually 1-3 days, rarely longer	Large respiratory droplets or direct contact with patient or carrier	Appropriate antibiotic treatment eliminates organism within 24 hours; untreated cases- as long as they are ill usually 10-21 days	Exclude until 24 hours after initiation of antibiotic therapy.	Encourage good personal hygiene.
Tick Borne Infections 	Varies by specific disease, but generally includes fever, rash, muscle aches, fatigue	Lyme – 3-31 days, usually 7-10 days Rocky Mtn. Spotted Fever – 3-14 days Ehrlichiosis – varies but generally 7-14 days	Transmitted from ticks to humans	Not applicable	None	Appropriate removal of tick.

Disease / Condition	Signs / Symptoms	Incubation Period	Mode of Transmission	Period of Communicability	Exclusion / Attendance	Prevention
Tuberculosis 	Cough that lasts longer than 3 weeks, hemoptysis, night sweats, fever, pain in chest, weight loss, fatigue, chills, etc.	8 – 10 weeks for positive TST or IGRA. It can take decades for active disease to develop	Airborne	3 months prior to onset of symptoms until no longer infectious	Yes until no longer infectious (usually at least 2 weeks after the initiation of antibiotic therapy that produces a significant reduction in symptoms)	Avoid close contact with an infectious person. Treatment with Isoniazid for LTBI.
Varicella 	Fever, fatigue, followed by rash illness that progresses into itchy, fluid-filled blisters. "Break-through" cases appear as macular and popular lesions (small flat or raised red bumps)	10-21 days	Contact with infectious respiratory secretions, airborne droplets or fluid from vesicles	2-5 days prior to the onset of the rash through the stage when the lesions have crusted over or have faded in mild, "break-through" disease, usually 7 days	Index Case: Exclude until the vesicles become dry or lesions have faded. Susceptible Contacts: May consider exclusion during outbreak situations	Vaccine Available 2 doses of age appropriate varicella vaccine The vaccine is effective in preventing disease within 5 days of exposure; a varicella-zoster immunoglobulin may be given within 3 days of exposure to lessen the severity of disease in those who can not safely receive the vaccine

Rash Illness Information

Illness	Rash Description	Other Symptoms	Agent	Period of Communicability	Exclusion / Attendance
<u>Chickenpox</u>	- Rash begins on face and trunk and progresses to extremities where it is most concentrated - Lesions progress from flat to raised and become a vesicle before crusting; several stages are present at the same time - Vesicles are very itchy “Break-through” cases may have a mild flat and raised rash that may be itchy	Low-grade fever and malaise	Herpes Zoster virus	Up to 5 days prior to onset of rash until lesions have crusted over (usually 7 days) or in cases of “break-through” disease until the lesions have faded	Exclude from school and public gatherings until vesicles become dry or lesions have faded
<u>Fifth Disease (erythema infectiosum)</u>	- Rash begins as a slapped-cheek appearance with warmth to the cheeks that may disappear before progresses to the trunk, extremities and feet - Flat and raised red rash that appears “lace-like” - Rash may be itchy	Low-grade fever, malaise and mild cold symptoms	Human parvovirus (B-19)	7 days prior to onset of rash	Recommend exclusion if fever is present, individual is no longer contagious after appearance of rash Pregnant women with illness or exposure need to seek medical advice

Hand/Foot and Mouth Disease (vesicular stomatitis with exanthema)	• Rash begins as small red spots that blister and become ulcers on the tongue, gums and inside of cheeks and progresses to a rash that is located on the palms of hands, soles of feet and appear on the buttocks and genitalia. • Flat and raised red spots that may form blisters • No itch – oral lesions can be very painful	Low-grade fever, sore throat and malaise prior to onset of rash	Enteroviruses	Acute stage of illness and possibly longer – virus is shed in the stool	Recommend exclusion during first 2-3 days of acute illness. May consider exclusion for those with oral blisters who drool or have lesions on hands that are weeping.
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Illness	Rash Description	Other Symptoms	Agent	Period of Communicability	Exclusion / Attendance
Measles	- Rash begins at hairline and ears progressing to trunk, arms and legs - Flat and raised, pinkish-red, color changes to reddish-brown and becomes confluent on trunk - Slight itch (if any)	High fever, malaise, cough, coryza conjunctivitis, runny nose, Koplik spots	Measles virus	4 days before onset of rash through 4 days after the rash appears	Index Case: Exclude from school and contact with individuals outside home for 4 days after appearance of rash Contacts: Contacts with no history of immunization excluded until 14 days after onset of last measles case.
Pityriasis rosea	- Rash begins as an initial (herald) patch in ½ of cases that is salmon-pink, scaly and enlarges in size to about 0.5" that is on the trunk or upper extremities. Within 21 days secondary lesions spread over the trunk and extremities - Secondary lesions are red and scaly - Rash is usually itchy	None	Inflammatory skin disease	Not a communicable condition – treated with anti-pruritic therapy	Do not exclude

Illness	Rash Description	Other Symptoms	Agent	Period of Communicability	Exclusion / Attendance
Rubella	- Rash begins on face and progresses to trunk within 24 hours - Flat and raised pink, discrete, rash that may be absent and often fades or turns red without desquamation. Most evident after hot shower - Slight to no itch	Low-grade fever, joint pain (adolescents and adults), enlarged and tender lymph nodes at the back of the neck	Rubella virus	7 days prior to the onset of rash through 4 days after the rash appears	Index Case: Exclude from school and contact with individuals outside the home for 7 days after the onset of rash Contacts: Students without proof of immunity are excluded until 23 days after the onset of last rubella case Pregnant women with illness or exposure need to seek medical advice
Scabies	- Rash is manifested as crusts, vesicles, pustules, blisters or tiny papules that are usually very itchy - Most common in webs of fingers, hands, wrists, armpits, groin and elbows	Scratching of rash can become infected with <i>Streptococcal</i> or <i>Staphylococcal</i> bacteria	<i>Sarcoptes scabiei</i>	From time of infection until 1 day after treatment	Exclude from school until 1 day after treatment.
Scarlet Fever	- Rash begins upper chest and progresses to trunk, neck and extremities within 24 hours - Pinkish-red pinhead spots that blanch under pressure and feel similar to sandpaper (can often be felt easier than seen)	High fever, sore throat and nausea. The tongue is covered with white "fur" before peeling and developing into strawberry tongue. Diagnosis is made with positive throat cultures for strep	Group A Strep	Onset of symptoms until 24-48 hours after treated with antibiotics	Exclude until at least 24 hours after beginning antibiotic therapy

Illness	Rash Description	Other Symptoms	Agent	Period of Communicability	Exclusion / Attendance
Shingles	• Unilateral rash in a line distribution of a sensory nerve • Clusters of blisters on a red base that scab in 3-5 days • No itch – can be painful	Pain, itching or tingling in the area where the rash develops (prior to the appearance of rash), fever, headache, chills and nausea	Herpes Zoster virus	From the time blisters appear until lesions have crusted over Susceptible persons who come in direct contact with lesions would acquire chickenpox, not shingles	Do not exclude if site of infection can be covered as the individuals are not considered to be highly contagious Individuals who are immunosuppressed are at the greatest risk for getting shingles

Appendices

Web sites

Legal Resources

In addition to the Communicable Disease Reporting Rule for Physicians, Hospitals and Laboratories (410 IAC 1-2.3) described in the manual, there are other legal resources schools should consult when appropriate. They include:

- Indiana code (IC 20-34-3-9) describes the process for sending ill children home and for readmission of child to school. It also provides a mechanism for reimbursement of medical care if the parents are financially unable to pay. You can access this section of Indiana code at:

<http://www.in.gov/legislative/ic/code/title20/ar34/ch3.html>

- Immunization Requirements:

<http://www.in.gov/legislative/ic/code/title20/ar34/ch4.html>

http://www.in.gov/legislative/iac/iac_title?iact=410&iaca=1&submit=+Go

<http://www.in.gov/isdh/17094.htm>

- Meningitis Education Requirements (section 18):

<http://www.in.gov/legislative/ic/code/title20/ar30/ch5.html>

It is suggested that school nurses and administrators download and print out these laws and rules and file for quick reference when needed.

Hand washing

Hand washing is the single most effective way to prevent a wide variety of diseases. There are many resources available for schools and parents to access.

- ISDH hand washing Quick Fact Sheet and Campaign:

<http://www.in.gov/isdh/21926.htm>

<http://www.in.gov/isdh/24036.htm>

- CDC Web Link to hand washing info:

http://www.bam.gov/sub_yourbody/yourbody_buzzonscuzz.html

- Other hand washing websites

http://www.kidshealth.org/parent/general/sick/hand_washing.html

<http://www.mayoclinic.com/health/hand-washing/HQ00407>

Immunization

- Advisory Committee on Immunization Practices (ACIP) Recommendations which can be found at:

<http://www.cdc.gov/vaccines/pubs/ACIP-list.htm>

- The Epidemiology and Prevention of Vaccine-Preventable Diseases, 10th Edition, **UPDATED 11th Edition, (June 2009)**. This book is available on line at:

<http://www.cdc.gov/vaccines/pubs/pinkbook/default.htm>

- Immunization Action Coalition. This website provides publications and print materials available for distribution to parents/guardians and teachers.

<http://www.immunize.org/>

Blood-borne Pathogens

- Occupational Health and Safety Administration (OSHA) Blood-borne Pathogens Standards:

http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10051

<http://www.osha.gov/SLTC/bloodbornepathogens/recognition.html>

- CDC websites:

<http://www.cdc.gov/ncidod/dhqp/bp.html>

http://www.cdc.gov/ncidod/dhqp/bp_universal_precautions.html