

GUIDELINES FOR THE CONTROL OF COMMUNICABLE DISEASES AMONG SCHOOL CHILDREN

THE YELLOWBOOK



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Department of
Public Health
CITY OF PHILADELPHIA
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About this Book

The Philadelphia Department of Public Health's Division of Disease Control's ***Guidelines for the Control of Acute Communicable Diseases among School Children*** is a reference tool designed to be used by healthcare professionals and administrators working in the school setting. It provides an overview on over 50 diseases and conditions and for each specifically details:

- Common signs and symptoms
- Incubation period
- Method of infection
- Recommended therapy and management
- Immunization availability and requirements
- School exclusion recommendations
- School observation period
- Reporting requirements to the health department

Additional resources include a contact list and notifiable disease reporting form, list of required immunizations for school entry, list of reportable diseases and conditions, and a summary chart detailing the most common infectious agents presenting in the school setting.

This updated revision has incorporated the most recent guidance for the prevention and control of communicable diseases in the school setting and incorporates exclusion, treatment, immunization, and infection control recommendations. Additionally, we have added several new conditions to the book including allergies, asthma, herpes simplex, and pneumonia. Finally, links to posters and similar educational materials are also provided.

The information presented within was ascertained from numerous resources including publications by the American Academy of Pediatrics, the Centers for Disease Control and Prevention, and the American Public Health Association. Additional recommended resources include the American Academy of Pediatrics *"Managing Infectious Diseases in Child Care and Schools"* and the *"Red Book: Report of the Committee on Infectious Diseases."* Should you require additional information or guidance please do not hesitate to contact the Division using the numbers, websites, and email addresses provided on the contact information page. Additional resources such as posters, brochures, fact sheets, and template letters are available from the Division.

Your efforts in the prevention and control of communicable diseases in schools and the greater Philadelphia community are appreciated. We look forward to continuing the collaboration we have with our schools in improving the public health of our community.

Guidelines for the Control of Communicable Diseases Among School Children

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Contact Information

Philadelphia Department of Public Health
Division of Disease Control
500 S. Broad Street; 2nd floor
Philadelphia, PA 19146

Phone: (215) 685-6740

Fax: (215) 238-6947

Email: ACD@phila.gov

Websites*: www.phila.gov/health (Public Website)

hip.phila.gov (For Healthcare Professionals)

<https://hip.phila.gov/DiseaseControlGuidance/SchoolsChildcare> (electronic version of Yellow Book)

**Information available on the websites may include fact sheets, brochures, posters, links to additional resources, and Surveillance data.*

Reporting Communicable Diseases

Program Area	Phone Number	Fax Number
Acute Communicable Diseases	215-685-6748	215-238-6947
Sexually Transmitted Diseases	215-685-6737	215-685-6798
Tuberculosis	215-685-6744 or 215-685-6873	215-685-6477
Varicella	215-685-6742	215-238-6941
HIV/AIDS	215-685-4781 or 215-685-4773	----

Immunization Registry/KIDS

<https://kids.phila.gov>

Phone: (215) 685-6784

School District of Philadelphia/School Health Services

**Only for schools and nurses affiliated with the School District of Philadelphia. Please refer to the Interagency Protocol between the School District of Philadelphia and the City of Philadelphia Department of Public Health.*

School District of Philadelphia
Office of Specialized Services/School Health Services
400 N. Broad St; 2nd Floor
Philadelphia, PA 19130

Phone: (215) 400-6094 or (215) 400-4170

INTERAGENCY PROTOCOL
between
THE SCHOOL DISTRICT OF PHILADELPHIA
and
THE CITY OF PHILADELPHIA DEPARTMENT OF PUBLIC HEALTH

The control of communicable diseases is a function of the State and City Departments of Health, governed by State laws and local Department of Public Health regulations. The School District of Philadelphia (SDP) is a key partner in this effort.

When the SDP learns of a reportable communicable disease (see enclosed list) in a member of the school community, the Philadelphia Department of Public Health (PDPH) must be notified at 215-685-6748. Cases of possible tuberculosis are reported to 215-685-6744 or 215-685-6873. Conversely, when PDPH knows of a case of communicable disease in a member of the school community, the SDP Liaison to the PDPH will be notified. Such notice shall occur at the earliest possible opportunity during normal business hours.

SPECIAL SITUATIONS:

There are a small number of special situations, which require immediate sharing of information between both agencies, even during evenings, weekends and holidays. These special situations are:

- Any unexpected death of a student from a reportable communicable disease.
- Any case of meningococcal disease or measles
- Any unusual cluster of a severe communicable disease (e.g., invasive diseases).

Confidentiality regarding the identity of the case being reported will be maintained at all times by all parties.

COMMUNICATION PROCEDURES FOR SPECIAL SITUATIONS:

When the PDPH learns of a special situation, the PDPH will contact the SDP Liaison to the PDPH. When the SDP hears of a possible special situation, the SDP Liaison to the PDPH will contact the PDPH.

During normal business hours, contact:

- School District of Philadelphia - School Health Services, SDP Liaison to the PDPH at 215-400-6094, or 215-400-4170. The SDP Liaison to the PDPH will notify the school principal, the School Nurse, the School Health Coordinator, the Office of Communications, and the Deputy Office of Academic Support.
- Philadelphia Department of Public Health, Division of Disease Control – 215-685-6740. In the event that, during normal business hours, there is no response from SDP within one hour, PDPH staff will contact the school directly.

Outside normal business hours, contact:

- School District of Philadelphia (SDP) – 215-400-4000, ask the dispatcher to connect you to the Director of School Health Services.
- Philadelphia Department of Public Health (PDPH) – 215-686-4514, ask for the Division of Disease Control “on call person.”

RESPONSE TO SPECIAL SITUATIONS:

Whenever a school hears “word” of a possible special situation, regardless of the source, the school **will**:

- Notify the School Nurse or, if the School Nurse is not available, the SDP Liaison to the PDPH at 215-400-6094 or 215-400-4170;
- The School Nurse will gather all relevant information and contact the PDPH
- The School Nurse will notify the School Health Coordinator, who will contact the SDP Liaison to the PDPH;

- *Cases must be discussed with the PDPH before any action is taken by school staff.*

The PDPH will:

- Investigate to confirm the diagnosis.
- Describe the PDPH’s intended response to the situation to the SDP Liaison to the PDPH.
- Advise regarding appropriate and necessary public health actions needed to be taken by the SDP to protect the public health of the school community.
- When necessary, draft a letter or notice to be sent home to the school community.
- Make known when PDPH is available for continued consultation.
- Remind the SDP of the confidential nature of all information being exchanged.

ADDITIONAL INFORMATION IS AVAILABLE TO SCHOOL STAFF IN THE SCHOOL NURSE PROCEDURE MANUAL AND PRINCIPLES, POLICIES AND PROCEDURES OF THE SCHOOL DISTRICT.

**PHILADELPHIA DEPARTMENT OF PUBLIC HEALTH
DIVISION OF DISEASE CONTROL (DDC)**



Phone: 215-685-6748

Fax: 215-238-6947

For after hours immediate reporting & consultation: 215-686-4514 – ask for Division of Disease Control on-call staff

REPORTABLE DISEASES AND CONDITIONS

Acquired Immune Deficiency Syndrome (AIDS/HIV) ‡	Listeriosis
Amebiasis	Lyme disease
Animal bites (wild/stray/domestic)	Malaria
Anthrax *	Measles (rubeola) *
Babesiosis	Melioidosis *
Botulism *	Meningitis (viral, fungal, bacterial)
Brucellosis *	Meningococcal infections *
Campylobacteriosis	Mumps
<i>Chlamydia trachomatis</i> including lymphogranuloma venereum	Pertussis (whooping cough)
Chancroid	Plague *
Cholera *	Poliomyelitis *
Creutzfeldt-Jakob disease	Psittacosis (ornithosis)
Cryptosporidiosis	Rabies *
Cyclosporiasis	Rickettsial diseases (including Rocky Mountain spotted fever, rickettsial pox, typhus fever)
Dengue	Rubella (German Measles) & Congenital Rubella *
Diphtheria *	Salmonellosis
Ehrlichiosis/Anaplasmosis	Severe Acute Respiratory Syndrome (SARS) *
Encephalitis including all arboviruses *	Shigellosis
Escherichia coli O157:H7 and Shiga toxin-producing bacteria *	Smallpox *
Food poisoning *	<i>Staphylococcus aureus</i> , vancomycin insensitive
Giardiasis	Streptococcal disease, invasive group A
Gonococcal infections	Streptococcal disease, invasive group B (neonatal)
Guillain-Barré syndrome	<i>Streptococcus pneumoniae</i> , invasive disease
Haemophilus influenzae, invasive disease *	Syphilis
Hantavirus Pulmonary Syndrome *	Tetanus
Hepatitis A	Toxic Shock Syndrome
Hepatitis B	Trichinosis
Hepatitis C	Tuberculosis §
Hepatitis, other viral	Tularemia *
Histoplasmosis	Typhoid (Salmonella typhi and paratyphi) *
Influenza – novel influenza A *	Vibriosis
Influenza – pediatric mortality and institutional outbreaks*	West Nile Virus *
Lead poisoning †	Varicella, including zoster
Legionnaires' disease	Yellow Fever and other viral hemorrhagic fevers *
Leprosy (Hansen's disease)	Yersiniosis
Leptospirosis	

* Report suspected and confirmed cases within 24 hours ‡ Report to AIDS Activities Coordinating Office at 215-685-4789
 † Report to Lead Poisoning Prevention at 215-685-2788 § Report to TB Control Program at 215-685-6744 or -6873

All other cases should be reported within 5 days

All unusual disease clusters, disease outbreaks, and unusual disease occurrences should be reported immediately

To Report a Case to DDC, Call, Fax or Submit through PA-NEDSS the Following Information:
 Patient Name | Condition | Age/DOB, Sex, Address & Phone | Clinician Name, Address & Phone | Laboratory Testing

For more information, please visit <https://hip.phila.gov>

Notifiable Disease Case Report (Confidential)

Philadelphia Department of Public Health
Division of Disease Control
 Communicable Disease Control Program
 500 S. Broad Street, Philadelphia, PA. 19146



Patient Information

Report Date (Mo., Day, Yr.) ____/____/____		Name (Last, First, M.I.)		Parent or caretaker (if applicable)	
Address (Number, Street, Apt #, City, Zip Code)				Telephone (Home) _____ (Cell) _____ (Work) _____	
DOB (Mo., Day, Yr.) ____/____/____	Age	Sex <input type="checkbox"/> Male <input type="checkbox"/> Female	Occupation		
Name of Employer or School			Employer/School Address (Number, Street, City, Zip Code)		

Medical Information

Disease or Condition		Date of Onset (Mo., Day, Yr.) ____/____/____	Diagnosis <input type="checkbox"/> Clinical <input type="checkbox"/> Lab confirmed	Fatal (check one) <input type="checkbox"/> No <input type="checkbox"/> Yes Date of Death _____
Chief Symptoms / Complaints <input type="checkbox"/> cough <input type="checkbox"/> nausea <input type="checkbox"/> diarrhea <input type="checkbox"/> headache <input type="checkbox"/> joint pain <input type="checkbox"/> coryza <input type="checkbox"/> vomiting <input type="checkbox"/> fever <input type="checkbox"/> body aches <input type="checkbox"/> rash <input type="checkbox"/> other _____		Suspected source(s) of infection (if known) <input type="checkbox"/> school/daycare <input type="checkbox"/> home/relative <input type="checkbox"/> park/outdoors <input type="checkbox"/> work <input type="checkbox"/> restaurant <input type="checkbox"/> recreational water <input type="checkbox"/> travel <input type="checkbox"/> other _____		
If Case Hospitalized (Name of Hospital/Medical Provider)			Admission Date ____/____/____	Discharge Date ____/____/____

Laboratory Information If Pertinent (attach copies if applicable)

Name of Lab	Name of Test	Site Source	Result	Collection Date	Result Date
		<input type="checkbox"/> Blood <input type="checkbox"/> Stool <input type="checkbox"/> CSF <input type="checkbox"/> Other _____			
		<input type="checkbox"/> Blood <input type="checkbox"/> Stool <input type="checkbox"/> CSF <input type="checkbox"/> Other _____			
		<input type="checkbox"/> Blood <input type="checkbox"/> Stool <input type="checkbox"/> CSF <input type="checkbox"/> Other _____			

Antibiotic Sensitivities (if applicable)

Antibiotic	Resistant	Intermediate	Susceptible
Ampicillin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ceftriaxone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ciprofloxacin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Levofloxacin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Penicillin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trimethoprim/ Sulfamethoxazole (Bactrim)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Notes

Reporter Information

Facility Name	Reporter Name	Reporter Phone #	Reporter <input type="checkbox"/> ICP <input type="checkbox"/> ED <input type="checkbox"/> School Nurse <input type="checkbox"/> Lab <input type="checkbox"/> Other _____
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DO NOT WRITE IN AREA BELOW - FOR DEPARTMENT USE

Name (Person Receiving Report)	Method of reporting <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> Mail <input type="checkbox"/> Other _____
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Any unusual illness, disease clusters or possible outbreaks should be reported *immediately* by telephone. Please fax all completed reports to 215-238-6947 or call 215-685-6748 to report by phone.

Revised 08/17/2015

If reporting influenza, animal exposure, TB, please use specific form.



**Summary: Philadelphia Immunization Requirements
For School Entry, 2015-2016**

Grades	Vaccines	Requirements
K – 1	Diphtheria & Tetanus..... Pertussis..... Polio..... Measles..... Mumps..... Rubella..... Hepatitis B..... Varicella.....	4 Doses: at least one on/after 4 th birthday (DTaP/DTP/DT/Td) 4 Doses: at least one on/after 4 th birthday (DTaP or DTP) 3 Doses: (OPV/IPV) 2 Doses: on/after 1 st birthday (MMR or MMRV) 2 Doses: on/after 1 st birthday (MMR or MMRV) 2 Doses: on/after 1 st birthday (MMR or MMRV) 3 Doses: (HBV) 2 Doses: on/after 1 st birthday (Varicella or MMRV) or documentation of chickenpox immunity proven by laboratory testing or a written statement of prior chickenpox disease from a healthcare provider
2-5 and 8-12	Diphtheria & Tetanus..... Polio..... Measles..... Mumps..... Rubella..... Hepatitis B..... Varicella.....	4 Doses: at least one on/after 4 th birthday (DTaP/DTP/DT/Td/Tdap)** 3 Doses: (OPV/IPV) 2 Doses: on/after 1 st birthday (MMR or MMRV) 2 Doses: on/after 1 st birthday (MMR or MMRV) 1 Dose: on/after 1 st birthday (MMR or MMRV) 3 Doses: (HBV) 2 Doses: on/after 1 st birthday (Varicella or MMRV) *
6-7	Diphtheria & Tetanus..... Pertussis..... Polio..... Measles..... Mumps..... Rubella..... Hepatitis B..... Varicella..... Meningococcal.....	4 Doses: at least one on/after 7 th birthday (DTaP/DTP/DT/Td/Tdap)** 1 Dose: at least one on/after 7 th birthday (Tdap) 3 Doses: (OPV/IPV) 2 Doses: on/after 1 st birthday (MMR or MMRV) 2 Doses: on/after 1 st birthday (MMR or MMRV) 1 Dose: on/after 1 st birthday (MMR or MMRV) 3 Doses: (HBV) 2 Doses: on/after 1 st birthday (Varicella or MMRV) * 1 Dose: on/after 2 nd birthday (MCV4)

References: Requirements from The Pennsylvania Code – Subchapter C. *IMMUNIZATION* §23.81, amended May 28, 2010, effective August 1, 2011, and from the Philadelphia Board of Health *Regulations Governing the Health of Newborns, Children and Adolescents*, published 2009.

* Or documentation of a history of chickenpox immunity proven by laboratory testing or a written statement of history of chickenpox disease from a parent, guardian or physician.

** Only 3 doses of Td-containing vaccine are necessary if series is started on/after 7th birthday, if at least one dose is given as Tdap.

PHILADELPHIA DEPARTMENT OF PUBLIC HEALTH COMMUNICABLE DISEASE CHART FOR SCHOOL PERSONNEL

DISEASE	INCUBATION PERIOD	TRANSMISSION	COMMON SYMPTOMS	EXCLUSION REQUIRED
CHICKEN POX (VARICELLA)	10-21 days	Direct contact with skin lesions or airborne droplets	Mild fever, itchy lesions on the head and body	Yes, until all lesions have crusted over.
DIARRHEAL ILLNESS (Norovirus, Shigella, E.Coli, Salmonella)	Shigella: 1-3 days Norovirus: 12-48 hours E.Coli: 3-4 days Salmonella: 12-36 hours	Fecal-oral route	Abdominal pain, watery diarrhea, nausea, vomiting, fever	No. Individuals with adequate hand hygiene are allowed to remain in school. Individuals who work in or attend daycare and food handlers should be excluded until symptoms resolve, consult the Division of Disease Control for assistance.
FIFTH DISEASE	4-14 days	Airborne droplets	Fever, malaise, myalgia, headache, red rash on the extremities and skin, facial flushing	No.
GROUP A STREPTOCOCCAL DISEASE (STREP THROAT & SCARLET FEVER)	2-5 days	Direct contact with nasal secretions, throat secretions, or infected skin/wounds	Strep throat: throat pain, difficulty swallowing, red-denied tonsils, fatigue, fever, and headache Scarlet Fever: fine red rash on the armpits, groin, and around the mouth, sore throat, fever, and swollen lymph nodes	Yes, exclude during acute illness.
HAND FOOT AND MOUTH DISEASE	3-6 days	Respiratory secretions, fecal-oral route, direct contact with fluid filled blisters	Blisters on the mouth, foot, buttocks, fingers, palms of hands, fever, fatigue, cough, vomiting, diarrhea	No, unless the child has weeping blisters on their skin that cannot be covered or is drooling with active mouth blisters.
HEPATITIS A	15-50 days	Fecal-oral route	Jaundice, fatigue, abdominal pain, nausea, vomiting, anorexia	Yes, individuals should be excluded for 1 week after onset of illness.
IMPETIGO	7-10 days	Direct contact with lesions	Small red pimples or blisters that crust and form a yellow scab.	Yes, re-admit to school once antibiotic treatment has been initiated for 24 hours.
INFLUENZA	1-3 days	Airborne droplets	Headache, chills, fever, sore throat, cough	Yes, until child no longer has a fever.
MENINGITIS, BACTERIAL (MENINGOCOCCAL, PNEUMOCOCCAL, H.INFLUENZA)	Meningococcal: 1-10 days Pneumococcal: Variable H. Influenzae: Unknown	Airborne droplets	Fever, chills, purpuric rash, headache, stiff neck, vomiting, sensitivity to light	Yes, exclude during acute illness. Re-admit to school once antibiotic treatment has been initiated for 24 hours.
MRSA (METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS)	Variable	Contact with the bacterium through a break in the skin	Small red lesions that resemble pimples, boils, or spider bites	Individuals who are able to cover the infected area with a dressing do not need to be excluded from school. However they should be excluded from contact sports and gym until the infection is cleared.
MUMPS	16-18 days	Airborne droplets	Swollen salivary (parotid) glands, headache, fever, tiredness, loss of appetite	Yes, should be excluded 5 days after onset of parotid gland swelling.
PEDICULOSIS (HEAD LICE)	6-10 days	Direct contact with contaminated hair or fomites, sexual contact	Small, reddened bumps on the neck, scalp, and skin. Intense itching/tingling of the infected area. Visualization of lice or lice eggs.	Yes, individuals can be re-admitted after pediculosis treatment has been successfully completed.
PERTUSSIS (WHOOPING COUGH)	7-10 days	Airborne droplets	Common cold-like symptoms develop before cough. Coughing fits may be followed by a high-pitched whooping sound or vomiting.	Yes, individuals should be excluded until they have completed 5 days of antibiotic treatment.
PINKEYE (CONJUNCTIVITIS)	24-72 hours	Direct contact with an infected person or contaminated objects. Also may be caused by allergies.	Sensitivity to bright light and watery eyes. Itchiness or redness in one or both eyes. Discharge from the eye that may cause crusting to occur overnight.	Children with clear watery eye discharge without eyelid redness do not need to be excluded. Children with purulent discharge should be excluded until they have received 24 hours of antibiotics.

Allergies (General)

Common Signs and Symptoms

Allergies are an autoimmune response of the body to a certain allergen / antigen. The two most common forms are environmental and food allergies. Environmental allergies are usually caused by airborne substances such as pollen, mold, dust mites, animals and chemicals. Symptoms include sneezing, runny or clogged nose, coughing and postnasal drip, itchy eyes and throat, allergic shiners (dark circles under the eyes), watering eyes, swelling of the throat, and conjunctivitis. Some indirect symptoms of allergies are irritation of the nose and eyes as a result of itching and rubbing.

Food Allergies are another common form of allergies that are characterized by itching, tingling or burning sensations of the tongue or mouth; swelling of the throat, mouth, tongue or other parts of the body; swelling or itching of the lips; hives, itching or eczema on the skin, mouth or throat; wheezing, nasal congestion or trouble breathing; abdominal pain, diarrhea, nausea or vomiting; and / or dizziness, lightheadedness or fainting. In severe cases, anaphylaxis can develop, which is associated with constriction and tightening of the airways, swollen throat or sensation of lump in the throat causing breathing difficulty, shock with a severe drop in blood pressure, rapid pulse, dizziness, lightheadedness, and/or loss of consciousness. Anaphylaxis can be life-threatening in some cases and requires immediate medical attention.

Incubation Period

Varies greatly from person to person, can range from seconds to hours or even days.

Method of Infection

Since allergies are an autoimmune response, exposure to the allergen causes symptoms. Allergies are not transmittable from person to person.

Recommended Therapy and Management

For most environmental allergies over-the-counter medications are available to prevent allergic responses and lessen symptoms, the most common being antihistamines, decongestants, eye drops and nasal sprays. For more severe cases epinephrine or prescription strength medication can be prescribed by a physician.

Food allergies can also be treated with antihistamines and other over the counter medications for mild reactions. Epinephrine or other prescription strength medication can be used for more serious reactions.

Immunotherapy treatments, such as allergy shots or recently released sublingual therapies, are available as a more long-term solution.

Allergies (General), continued

**Immunization
Availability and
Requirements**

No vaccines are available, though desensitizing to the allergen is possible.

**Exclusion from
School**

Exclusion is not necessary.

**School Observation
Period**

No observation is required.

Reportable to PDPDH

No.

Animal Bites & Rabies

Common Signs and Symptoms

An animal bite can result in a break in the skin, bruise, puncture wound, infection, or disease such as rabies. Even injuries that don't seem to be that serious can hide underlying damage to tissues or pose a risk for infection from germs or the rabies virus. One of the best ways to prevent infection after a bite is to wash the area thoroughly with soap and water.

Initial symptoms of rabies infection in humans are usually vague and tend to increase in severity as the infection spreads to the brain. Once symptoms begin, survival is rare. Early symptoms of rabies in humans include irritability, headache, fever, and pain at the site of exposure. Later symptoms of rabies in humans include paralysis, swallowing difficulties, excess salivation, convulsions, and delirium.

Symptoms of other infections that may result after an animal bite or scratch include the following: fever, discomfort or tenderness at the site of the bite, redness or swelling at the site of the bite, puss or drainage at the site of the bite, and improper healing time.

Symptoms of rabies infection in animals include:

- Changes in behavior (unusual viciousness, erratic behavior, disorientation, no fear of natural enemies, roaming, irritability, restlessness)
- Appearance of choking, dropping of the jaw, inability to swallow (which may lead to drooling and foaming of saliva)
- Paralysis of jaw, throat, and chewing muscles
- Some animals may appear healthy, but may actually be sick with rabies

Incubation Period

The incubation period for human rabies is normally 3 to 8 weeks.

Method of infection

The rabies virus is transmitted to humans via the saliva or brain tissue of an animal that is infected with rabies through bites, breaks in skin, or mucous membranes.

Animal Bites & Rabies, continued

Recommended Therapy and Management

Clean the wound area with soap and water then cover with a clean dry dressing. If the extent of the bite is severe, and or the wound is above the neck, arrange for the child to be taken to the nearest emergency department. If the wound is actively bleeding apply firm continuous pressure to the area for five minutes or until the bleeding stops.

Consult with the Division of Disease Control (DDC) for the need to initiate rabies postexposure prophylaxis (PEP), which is a series of preventative shots. If the biting animal is otherwise healthy and domesticated, the risk of rabies transmission is low. In these cases the animal will be observed for 10 days and if the animal is alive and well after this period no PEP is necessary. Tetanus containing vaccine should be given to those who have not received a tetanus containing vaccine in the last 5 years.

Immunization Availability and Requirements

There is a rabies preexposure vaccine that is recommended for certain persons (e.g., laboratory workers, those traveling to countries where rabies is endemic, veterinarians) who are more likely to come into contact with the virus. This vaccine is given at days 0, 7, and 21 or 28. Two doses of vaccine are still required in persons with pre-exposure vaccine after an exposure. Rabies PEP following an exposure is given at day 0, 3, 7 and 14 to healthy persons who have never received the vaccine previously. For immunocompromised persons who have never received the vaccine, a fifth dose is given on day 21 or 28.

Exclusion from School / Observation

No exclusion or observation is required.

Reportable to PDPH

Yes— report all animal bites and exposures regardless of the type of animal to DDC. Information that will be requested includes: name of school and the location of the incident, body part involved, the victim's name, date of birth, and contact information, information on the biting animal (owner name and contact information, type of animal and brief description) if stray animal (animal type, brief description, and any locating information that is known), any treatment provided, and a description of the incident.

Remarks

Rodents such as rats, mice, and squirrels are not carriers of rabies. Children should be educated to prevent animal bites by being careful around strange animals, avoiding stray and wild animals, and never turning their back to an animal. Parents can help prevent rabies by getting their pets vaccinated for rabies and supervising their children when around animals.

To report a stray or wild animal in your house or neighborhood, please call the Philadelphia Animal Care and Control Team at 267-385-3800. DDC can assist with providing recommendations for rabies post-exposure prophylaxis and/or assist in the observation of domesticated animals for the 10-day quarantine period or testing of animals for the presence of rabies.

Aseptic (Viral) Meningitis

Common Signs and Symptoms

Aseptic or viral meningitis is a relatively common but rarely serious clinical syndrome with multiple viral etiologies, including members of a group of viruses called enteroviruses. Meningitis is the swelling or inflammation of the tissue covering the spinal cord and brain. This condition is called aseptic meningitis because cultures for bacteria are sterile or negative.

The symptoms of aseptic meningitis typically include sudden onset of febrile illness, stiff neck, headache, photophobia (sensitivity to light), loss of appetite, and transient paresis (weakness). Less common symptoms include rash, gastrointestinal disturbances, and respiratory symptoms. Encephalitic manifestations such as altered sensorium and focal neurologic signs may also be present.

Incubation Period

The incubation period for viral meningitis due to enteroviruses is normally 3 to 6 days, but may vary depending on the etiologic agent.

Method of Infection

The method of infection depends on the etiologic agent. Many viruses that cause meningitis are spread through respiratory secretions. Viruses in the enterovirus group can be spread through the fecal-oral route.

Recommended Therapy and Management

There is no specific treatment for aseptic meningitis infections. Treatment of this condition is in the form of supportive symptom management. No post-exposure prophylaxis is necessary for contacts.

Immunization Availability and Requirements

None.

Exclusion from School

No exclusion necessary. Children diagnosed with aseptic meningitis can return to school when they are no longer symptomatic (usually within 7-10 days).

School Observation Period

Children who are diagnosed with viral meningitis do not generally pose a risk to close contacts however; persons with similar symptoms should be evaluated by a healthcare provider

Aseptic Meningitis, continued

Reportable to PDPH Yes– report all confirmed and suspect cases to the Division of Disease Control immediately.

Remarks Viral meningitis is most commonly seen in the summer and early fall and can often be prevented through good personal hygiene.

The diagnosis of meningitis may generate concern among staff and other attendees. School administrators may want to distribute information to their community informing them of the fact that someone in the school had viral meningitis and that there is little to no public health risk to others.

For information on other types of meningitis including bacterial meningitis and meningococcal infections, please refer to those sections.

Asthma

Common Signs and Symptoms	Asthma is a condition in which the airways narrow, swell and produce extra mucus. The severity of asthma varies from person to person, and can be a minor inconvenience to some and a major condition for others. Asthma can be constant, exercise-induced, or allergy induced. Symptoms include: shortness of breath, chest tightness or pain, trouble sleeping caused by shortness of breath or coughing, whistling or wheezing sound when exhaling, and coughing or wheezing attacks.
Incubation Period	There is no true incubation period for asthma, and the duration of symptoms can vary on the order of seconds to hours.
Method of Infection	Asthma is not transmittable from person to person. Some common asthma triggers include airborne allergens, respiratory infections, exercise, cold air, air pollutants and irritants, and medications.
Recommended Therapy and Management	Asthma cannot be cured, but symptoms can be treated by using medication. Long-term solutions help to prevent asthma attacks and flair ups, and involve inhaled corticosteroids, leukotriene modifiers, long-acting beta agonists, combination inhalers and theophylline, and allergy shots for allergy induced asthma. Quick-relief or rescue medications are for short-term relief during an asthma attack and include short-acting beta agonists, ipratropium (Atrovent), and oral / intravenous corticosteroids.
Immunization Availability and Requirements	None.
Exclusion from School	No exclusion from school is necessary, though early removal from a school day or from physical activity may be necessary if a severe asthma attacks arises or if irritants are present in the school that may cause asthma attacks.
School Observation Period	No observation period is necessary.
Reportable to PDPH	No.
Remarks	There are several risk factors for asthma, including: genetics, having allergic conditions, being overweight, smoking, exposure to second hand smoke, having a mother who smoked while pregnant, exposure to exhaust fumes or pollution, and exposure to occupational triggers.

Bacterial Meningitis

Common Signs and Symptoms

Meningitis is the swelling or inflammation of the tissue covering the spinal cord and brain. Several bacterial infections can develop into meningitis. However, *Neisseria meningitidis* (meningococcal), *Streptococcus pneumoniae* (streptococcal), and *Haemophilus influenzae* type b (Hib) are the leading causes of bacterial meningitis in young children. Meningitis due to meningococcal or Hib infection is discussed in separate sections. Other bacteria that commonly cause meningitis are *Listeria monocytogenes*, group B streptococcus, and *Staphylococcus aureus*. Bacterial meningitis is a serious and potentially fatal infection.

The symptoms of bacterial meningitis include: sudden onset of febrile illness, stiff neck, headache, vomiting, photophobia (sensitivity to light), transient paresis (weakness), and encephalitic manifestations such as altered sensorium or focal neurologic signs.

Less common signs and symptoms include rash, loss of appetite, and respiratory symptoms.

Complications that can result from Bacterial meningitis are brain damage, hearing loss, learning disabilities, or death.

Incubation Period

The incubation period varies depending on the etiologic agent, though symptoms typically develop within several hours to 10 days.

Method of Infection

The leading three bacteria that cause meningitis are spread through direct contact with respiratory secretions. Other bacteria may be acquired in the natural environment, through the fecal-oral route, or through the contamination of an infected object or surface; invasive disease in the exposed person is rare in these circumstances. It is rare to observe person-to-person spread for bacteria other than those causing meningococcal or Hib infection.

Recommended Therapy and Management

The treatment for bacterial meningitis depends on the infectious agent but should be started as soon as possible. Generally this condition can be managed with the administration of antibiotics and medication specific to presenting symptoms. Preventive treatment is typically only needed for meningitis due to meningococcal or Hib infection.

Immunization Availability and Requirements

There are vaccines available to prevent the three leading causes of bacterial meningitis (pneumococcal, meningococcal, and Hib). Please refer to the appropriate sections in this manual for specific vaccine information.

Bacterial Meningitis, continued

Exclusion from School

No exclusion necessary. Children can return to school after receiving antibiotics for at least 24 hours.

School Observation Period

Transmission in school is rare and thus there is no observation period for bacterial meningitis caused by bacteria other than *Neisseria meningitidis* or *Haemophilus influenzae* type b (Hib). If either *Neisseria meningitidis* or *Haemophilus influenzae* type b (Hib) is the suspected agent, close contacts of the case should be monitored for similar illness for ~2 weeks from the initial case. Students who develop signs of bacterial meningitis should be evaluated by a health care professional immediately.

Reportable to PDPH

Yes— report all confirmed and suspect cases to the Division of Disease Control immediately.

Remarks

There are no recommendations for post-exposure prophylaxis of contacts that have developed bacterial meningitis from a bacterium other than *Neisseria meningitidis* or *Haemophilus influenzae* type b (Hib); please refer to those sections for more information.

The diagnosis of meningitis often generates concern among staff and other attendees. Although notification to the school community is not typically warranted, school administrators may still consider distributing information to their community. Information which may be distributed includes notification of an ill student/staff and that generally there is no risk to contacts or special precautions that need to be taken.

Bed Bugs

Description

Bed bugs are small, flat, brownish, wingless insects that feed on the blood of people and other animals. Bed bugs usually feed at night while people are sleeping. Bed bug bites are not painful when the bug is feeding; however, the bite may develop into an itchy welt similar to a mosquito bite. The welt produced by a bed bug bite resembles those caused by many other kinds of blood feeding insects, such as mosquitoes and fleas; therefore it is nearly impossible to determine the offending insect by appearance of the bite alone. Bed bugs can live for up to a year and they can survive 3-12 months without a blood meal.

The easiest way to identify bed bugs is to look for bite marks on the face, neck, arms, hand, or other body parts on the student, though they may take up to 14 days to develop. Other signs of bed bugs include presence of exoskeletons after molting, presences in the fold of mattresses and sheets, rusty colored blood spots on mattress or nearby furniture, and a sweet musty odor.

Bed bugs can infest any household and are not an indication of cleanliness or socioeconomic status. There is a stigma associated with bed bugs, so it is important to be sensitive to the student and family when they are suspected.

Recommended Therapy

There is no treatment for bed bug bites. Individuals may see a health care provider who may recommend over-the-counter or prescription steroid creams or oral antihistamines for symptom relief. Promotion of good hygiene will help prevent secondary infections.

When bed bugs infest a home it can be very costly to remove them. A student's family should consult a licensed, professional pest control operator to discuss options for eliminating bed bugs in the home.

Exclusion from School

No exclusion necessary.

Bed Bug Bites on a Student

If bites are found on a student and the student is unable to participate in classroom activities due to itching and discomfort:

- Confirm the cause of the bites by speaking to the student's parents or referring the student to their health care provider.
- If bed bugs are the confirmed offender, educate the parent about bed bugs and encourage the parent to inspect or have a pest management professional inspect their home for bed bugs.
- Ask parents to store the student's freshly laundered clothing and school backpacks, etc. in a plastic storage container with a lid or in a plastic bag to prevent bed bugs from crawling inside them and being transported to school.
- Encourage the student's family to treat the infestation at home with the assistance of a licensed, pest management professional.

Bed Bugs, continued

Bed Bugs on a Student

Bed bugs do not live on humans like body lice; however, they could hitchhike to school by hiding in a student's backpack or clothing. If a bed bug is found on a student, it may have come to school with the student or been brought to school with someone else. If bed bugs are found on a student:

- Discreetly remove the student from the classroom and examine their belongings and clothing.
- Remove any bugs that are found and collect them in a sealed plastic bag for identification. Try to keep the bug intact.
- If the bug is confirmed to be a bed bug, consider notifying the student's caretakers (if not already done) and the affected classroom. Recommend that the student's caretakers:
- Place the student's clothing and belongings in a dryer on high heat for 20 minutes or place the belongings in a plastic container to destroy the bugs.
- Check the home for bed bug infestation and notify the school of their findings.
- Work with school administration to assess the classroom risk and develop a pest management plan (see below).

Bed Bugs in a Classroom

Bed bug infestation in a classroom is uncommon. If a bed bug is found in the classroom, it is important to send the bug for identification to confirm the pest. If bed bugs are confirmed:

- Consider sending notifications to the parents of students in the affected classroom.
- Have a trained staff or pest management contractor inspect the room for evidence of bed bug infestation.
- If no evidence of bug infestation is found, maintain vigilance for bed bugs in the classroom; however, if there is evidence of an infestation, work with school administration to develop a pest management plan.
- A pest management plan may include:
 - Keep records of when and where the pests are found
 - Reduce clutter where bed bugs can hide
 - Clean classrooms each day. Clean hard surfaces with standard cleaning products. Vacuum and immediately place the vacuum bag in a sealed bag.
 - Store book bags and jackets in lockers or cubbies and off the floor
 - Do not allow pillows in the classroom
 - Do not allow used upholstered furniture in the classrooms
 - Contract a licensed pest management professional to apply pesticides
 - Remain vigilant for bed bugs following inspections and any treatment
 - Raise school awareness through education on bed bug prevention

Reportable to PDPH

No- for additional guidance regarding pest management contact the PDPH Vector Control Services Unit at 215-685-9000.

Blood and Bodily Fluid Exposure

Common Signs and Symptoms

Signs and symptoms associated with blood and/or bodily fluid exposures will vary depending on the etiological agent.

Method of Infection

Exposure to blood and other bodily fluids increases an individual's risk for infection. Infections that are caused by exposure to bodily fluids can be transmitted by direct contact with mucous membranes (eyes, nose, or mouth) or through a break in the skin. In addition, needles containing blood or bodily fluids that come into contact with a person's skin are also frequent sources of infection. Common infections associated with a needle stick are: hepatitis B, hepatitis C, and HIV. The risk of transmitting an infection after an exposure to blood or bodily fluids is dependent on:

- The type of bodily fluid involved (e.g., blood, respiratory secretions)
- Amount of blood or bodily fluid in the exposure
- The type of exposure (percutaneous, skin, mucous membrane, etc.)
- The pathogen (HIV, viral hepatitis, bacterial pathogen, etc.)

Recommended Therapy and management

In order to prevent and decrease the risk of infection from blood and bodily fluids it is best to always follow standard precautions including hand and respiratory hygiene, use of personal protective equipment when recommended, and safe handling of sharp devices including needles. Most exposures to blood and bodily fluids do not result in infection, but all exposures require evaluation by a school nurse or healthcare provider, especially those where the skin is broken, the mucous membranes are contaminated, or a needle puncture occurs. Generally the following activities should be conducted to prevent transmission.

- If an area within the school community or daycare is contaminated with blood or bodily fluids sanitize the area with bleach or a similar caustic agent.
- If skin is *not* broken, wash the contaminated area thoroughly with soap and water
- If skin is broken or contaminated by a potentially infectious material, irrigate the wound and wash the area thoroughly with warm soap and water.
- If mucous membranes such as the eyes, nose, or mouth become contaminated, irrigate and flush with sterile water. Do not use soap or other caustic agents.

Blood and Bodily Fluid Exposure

Exclusion from School

An exclusion from school is not required.

School Observation Period

None.

Reportable to PDPH

No- if two or more children are exposed please report the incident to the Division of Disease Control. All exposed children will still need immediate referral to a health care provider or Emergency Department for evaluation and potential post-exposure management of blood borne pathogen exposures.

Remarks

A hotline operated by the University of California San Francisco is available to provide consultation on the need for postexposure prophylaxis to blood exposures. The number is 1-888-448-4911.

Campylobacteriosis

Common Signs and Symptoms	Campylobacteriosis is a bacterial illness characterized by diarrhea (which is often bloody), malaise, fever, abdominal pain, nausea, and vomiting. The disease is typically caused by the bacteria <i>Campylobacter jejuni</i> and <i>Campylobacter coli</i> .
Incubation Period	The incubation period is normally 2 to 5 days, but may range from 1–10 days.
Method of Infection	Campylobacteriosis is spread by ingesting contaminated food or drinks, usually from improperly prepared poultry, unpasteurized (raw) milk, or untreated water. Rarely transmission can also occur from direct contact with contaminated feces or person-to-person.
Recommended Therapy and Management	Rehydration is very important. Most people recover without antibiotic treatment, but with severe illness, erythromycin and azithromycin can shorten the duration of illness and bacterial shedding and help prevent relapse if treated early.
Immunization Availability and Requirement	None.
Exclusion from School	Students with diarrhea due to campylobacteriosis should remain home until symptoms resolve. Food handlers and those attending or working in daycare settings should be excluded until diarrhea has stopped and it is ensured that they are practicing adequate hand hygiene.
School Observation Period	None. Transmission of <i>Campylobacter</i> in the classroom is extremely rare.
Reportable to PDPH	Yes – report all confirmed and suspect cases to the Division of Disease Control (DDC).
Remarks	Children and staff should be encouraged to practice good personal hygiene, with emphasis on handwashing after using the bathroom, and before eating or preparing food.

Chickenpox (*Varicella*) / Shingles (*Herpes Zoster*)

Common Signs and Symptoms

Classic chickenpox is caused by the varicella-zoster virus (VZV) and is characterized by a generalized vesicular rash consisting of 250-500 lesions with fever and malaise.

“Breakthrough” chickenpox infections may occur in previously vaccinated individuals and are typically mild with <50 lesions and few or no vesicles, making them hard to distinguish from other rashes.

VZV also can reactivate later in life in previously infected individuals causing shingles (herpes zoster), a localized, painful rash. Pain, itching, or tingling may occur in the area several days before the rash develops. Vesicles usually form and scab over in 7 to 10 days, and clear up in 2 to 4 weeks.

Incubation Period

The incubation period is normally 14-16 days (range 10-21 days).

Method of Infection

VZV is spread to susceptible persons by direct contact with skin lesions, or by airborne droplets generated by sneezing or coughing. The contagious period begins 2 days before the appearance of the chickenpox rash, and continues until rash has dried and crusted (usually 5-10 days from rash onset). A person with a shingles rash may also spread VZV, which will cause chickenpox in an exposed, susceptible person.

Recommended Therapy and Management

Exposed contacts: Immunocompromised individuals and susceptible pregnant women should notify their healthcare provider as soon as possible following a chickenpox or shingles exposure, since treatment is available that may prevent chickenpox or modify disease severity. Post-exposure vaccination is recommended for other unvaccinated individuals and single dose vaccine recipients and is most effective when given as soon as possible after contact with the chickenpox or shingles case.

Cases: Antiviral medication (i.e., acyclovir, valacyclovir, famciclovir) may be indicated for persons at risk of developing moderate or severe chickenpox with complications and for shingles cases. **DO NOT** administer aspirin, because of possible association with Reye syndrome.

Immunization Availability and Requirements

****Required immunization****

A routine 2-dose varicella vaccination regimen is recommended for eligible, susceptible children with the first dose given at 12-15 months and the second dose given at 4-6 years. Since Fall 2011, school entry regulations in Philadelphia required 2 properly spaced varicella vaccine doses for all children entering kindergarten through 12th grade. Catch-up vaccination with dose 2 of the varicella vaccine should be recommended for any student who has only received 1 dose of the varicella vaccine previously.

Chickenpox / Shingles, continued

Exclusion from School

Children or staff with chickenpox must be excluded until the rash has crusted, which may take several days in mild cases to several weeks in severe cases or in immunocompromised children. Even though the rash may be mild, previously vaccinated children with “breakthrough” chickenpox must still be excluded until all lesions are crusted. Immunocompromised and other children with a prolonged course should be excluded for the duration of the vesicular eruption.

School Observation Period and Control Measures

1 suspected chickenpox or shingles case:

- Identify students who were exposed (4 or more hours within the same classroom or close vicinity of the case).
- Exclude exposed students at high-risk for severe varicella illness (exposed, immunocompromised students and exposed, pregnant students who lack appropriate documentation of 2 doses of varicella vaccine or history of disease). These students may return as per written directions from their physician.
- Send an exposure notification letter to any remaining exposed individuals.
- Inform your school’s principal, so s/he can notify all teachers and staff.
- Exposed, susceptible persons should be monitored and may develop rash up to 21 days after exposure to the last case that occurs.

2-4 suspected chickenpox cases from the same facility in a 3-week period:

- Implement measures for 1 suspected case.
- Review immunization records for students who were exposed and identify students who lack appropriate documentation of 2 doses of varicella vaccine or history of disease.
- Exclude exposed students who lack documentation of varicella immunity from the 8th day after the first case’s rash onset through 21st day after the last case’s rash onset. Students who receive varicella vaccine post-exposure regardless of dose or provide appropriate documentation of varicella immunity may return immediately.

5 or more suspected chickenpox cases from the same facility in a 3-week period (Chickenpox Outbreak):

- Implement measures for 1 suspected case and 2-4 suspected cases.
- Send an outbreak notification letter to the entire school.
- Review immunization records for the affected grades or the entire school as resources permit and identify students who lack appropriate documentation of 2 doses of varicella vaccine or history of disease.
- Exclude those students who lack documentation of varicella immunity from the 8th day after the first case’s rash onset through 21st day after the last case’s rash onset. Students who receive varicella vaccine post-exposure regardless of dose or provide appropriate documentation of varicella immunity may return immediately. If the outbreak persists, the school may consider allowing only those with 2 doses to return immediately.

Chickenpox / Shingles, continued

Reportable to PDPH **Yes** – report all confirmed and suspect cases of chickenpox *and* shingles to DDC at 215-685-6742 as they occur.

Remarks Highly contagious; usually a mild, self-limited illness, but may be complicated by pneumonia, hepatitis, encephalitis or death. Illness is more likely to be severe in immunocompromised persons and adults, especially pregnant women.

For clusters of 2 or more cases, contact DDC at 215-685-6742 for assistance with management of exposed contacts. Electronic varicella outbreak prevention and control template letters are also available from DDC.

Chlamydia (*Chlamydia trachomatis*)

Common Signs and Symptoms	Most commonly, chlamydial disease is asymptomatic. In females, vaginal discharge and/or burning, tingling or itching with urination may occur. In males, urethral discharge and/or burning on urination may occur. In serious cases, it may cause permanent damage to a woman's reproductive system.
Incubation Period	The incubation period is normally 7 to 28 days.
Method of Infection	Sexual contact with an infected person; includes vaginal, anal and oral sex. If Chlamydia may be spread even if ejaculation does not occur. Chlamydial disease can also be passed from mother to child during delivery. Reinfection is common.
Recommended Therapy and Management	Therapy is indicated for all cases and all sexual contacts of cases and consists of a single dose of antibiotics, usually azithromycin 1gm orally. Doxycycline 100 mg orally twice daily for 7 days can also be given. It is important that all medication is taken to clear the infection.
Immunization Availability and Requirements	None.
Exclusion from School	No exclusion is recommended
School Observation Period	No observation period is required
Reportable to PDPH	Yes– by laboratory and diagnosing clinician.
Remarks	<p>Sexual abuse should be considered in pre-pubertal children; infection in those younger than 13 years old <u>must</u> be reported to Childline (800-932-0313) and to the Special Victims Unit (215-685-3251).</p> <p>Students older than 12 years can be referred to the STD Clinic at 1400 Lombard Street (215-685-6570) or to District Health Care Center #5 at 20th and Berks Streets (215-685-2930). Students with symptoms should be encouraged to bring their sex partners with them to the clinic so both can be treated at the same time. Free condoms are available at all District Health Care Centers.</p>

Common Cold (Rhinovirus)

Common Signs and Symptoms	Rhinovirus is a viral infection that is known to cause the common cold. This virus is also associated with infections of the ears, nose, throat, and eyes. Common symptoms of rhinovirus include: nasal discharge, headache, fatigue fever, cough, sneezing, watery eyes and sore or scratchy throat. In rare cases, the virus can cause severe disease, particularly in those with preexisting medical complications.
Incubation Period	The incubation period is normally 2-3 days, with most individuals recovering within 7-10 days.
Method of Infection	Rhinovirus is transmitted through direct contact with an infected person's nasal secretions, oral secretions, droplets produced from sneezing or coughing, or contaminated objects. Rhinoviruses can survive a few hours on inanimate objects.
Recommended Therapy and Management	In most cases rhinovirus will resolve on its own without the use of medication. However, over the counter medications such as antihistamines and decongestants can be used to decrease symptom severity. Rest and drinking plenty of fluids is recommended. Antibiotics are not recommended for the treatment of rhinovirus.
Immunization Availability and Requirements	None.
Exclusion from School	Exclusion from school is recommended if the child has a fever, is coughing excessively, has significant nasal drainage, cannot participate in daily school activities, or if there are unusual changes in behavior.
School Observation Period	None.
Reportable to PDPH	No.
Remarks	<p>The spread of rhinovirus can be prevented by:</p> <ul style="list-style-type: none">• Practicing frequent handwashing with soap and water or using alcohol based gels• Sanitizing frequently touched surfaces and objects with an appropriate disinfectant.• Throwing away tissues containing nasal secretions after one use <p>Individuals should see a doctor if their temperature exceeds 100.4 °F, symptoms last more than 10 days, or if they develop significant respiratory distress.</p>

Cryptosporidiosis

Common Signs and Symptoms	Cryptosporidiosis is a protozoan illness caused by <i>Cryptosporidium parvum</i> and <i>Cryptosporidium hominis</i> . It is characterized by diarrhea (which may wax and wane during the course of the illness), fatigue, dehydration, fever, abdominal cramping, nausea, vomiting, anorexia, and weight loss.
Incubation Period	The incubation period is normally 7 days, with a range of 2 to 14 days.
Method of Infection	Cryptosporidiosis is the most common cause of waterborne disease in the United States and can be spread through both recreational water and drinking water. The outer shell of cryptosporidium allows it to live outside of the body for long periods of time, and be resistant to chlorine. Transmission can also occur from direct contact with contaminated feces of humans and some animals, or contaminated surfaces.
Recommended Therapy and Management	Most cases of cryptosporidiosis will resolve on their own. However, rehydration is important. Nitazoxanide may be prescribed by a physician for the treatment of cryptosporidiosis in some patients, although its effectiveness in persons who are immunosuppressed is unclear.
Immunization Availability and Requirements	No vaccine is available for cryptosporidiosis.
Exclusion from School	No exclusion is recommended if diarrhea is no longer present.
School Observation Period	No school observation period is required as transmission of cryptosporidiosis in the classroom is extremely rare.
Reportable to PDPH	Yes — report all confirmed and suspect cases to the Division of Disease Control (DDC).
Remarks	Children and staff should be encouraged to practice good personal hygiene, with emphasis on handwashing after using the bathroom, and before eating or preparing food. Food handlers with cryptosporidiosis are excluded from work until they are asymptomatic and approved for return. Immunocompromised individuals with cryptosporidiosis should contact their healthcare provider regarding treatment. Those infected should also refrain from swimming for at least two weeks after diarrhea resolves.

Diphtheria

Common Signs and Symptoms

Diphtheria is a contagious bacterial illness caused by *Corynebacterium diphtheriae*. It primarily presents as a respiratory illness affecting the throat or nose, but can affect other areas. The toxin produced by the bacteria is the cause of most complications.

Diphtheria most commonly infects the pharynx and tonsils. Early symptoms include malaise, sore throat, anorexia, and low-grade fever. A bluish-white membrane forms on the tonsils and soft palate within 2-3 days in infected individuals. Less commonly, diphtheria can also present as a nasal, cutaneous, vaginal, conjunctival, or otic infection.

Incubation Period

The incubation period is normally 2-5 days, with a range of 1 to 10 days.

Method of Infection

Diphtheria is spread person-to-person by respiratory droplets generated through sneezing or coughing, or rarely by direct contact with skin lesions. The contagious period for people treated with appropriate antibiotics is fewer than 4 days. Untreated people may be contagious for 2-4 weeks from onset of infection. Asymptomatic carriers may also transmit disease.

Recommended Therapy and Management

Diphtheria is a medical emergency that requires immediate evaluation by a health care provider. Antitoxin and antibiotics are required for effective therapy.

Immunization Availability and Requirements

****Required immunization****

Four doses of DTaP vaccine (Diphtheria, Tetanus, and acellular Pertussis) are given to children during the primary vaccination series at 2 months, 4 months, 6 months, and 15-18 months. Booster doses are given at 4-6 years of age (DTaP) and after the 10th birthday (Tdap). School regulations in Philadelphia require 4 doses of diphtheria-containing vaccine for all children entering kindergarten – 5th grade and 8th-12th grade, with 1 dose given on or after their fourth birthday. Grades 6 and 7 also require 4 doses of diphtheria-containing vaccine; however, one dose must be on or after the child's 7th birthday.

Exclusion from School

Persons with respiratory diphtheria should be excluded from school until they have completed antibiotic therapy and 2 cultures from both the nose and throat are negative for *C. diphtheriae*. Cultures should be taken at least 24 hours apart and 24 hours after the completion of treatment.

Persons with cutaneous diphtheria should be excluded until 2 cultures of skin lesions taken 24 hours apart and 24 hours after antimicrobial therapy are negative.

Diphtheria, continued

School Observation and Control Measures

- Close contacts of the case should be identified. Close contacts include household contacts, boyfriend/girlfriends, daycare contacts and others who may have been exposed to the infected student's oral secretions.
- Symptomatic contacts should be treated with antitoxin at the first sign of illness.
- Close contacts (regardless of their immunization status) should be: (1) observed for 7 days, (2) cultured for *C. diphtheria* from both the throat and nose, and (3) started on prophylactic antibiotics.
- Positive contacts should be treated like cases and excluded until they have 2 negative cultures (see above, Exclusion from School)
- Observe classroom contacts, who are not considered to be close contacts, for 7 days for the development of symptoms.
- Review diphtheria immunization records for classroom contacts and recommend booster doses of diphtheria-containing vaccine if needed.
- Encourage classroom contacts to minimize disease transmission by practicing respiratory etiquette and hand hygiene.
- Disinfect all articles that may be soiled by respiratory secretions from the case.

Reportable to PDPH

Yes— report all confirmed and suspect cases to the Division of Disease Control (DDC) immediately.

Remarks

Diphtheria is an extremely rare disease in the United States with less than five cases reported annually in the United States in recent years. Consult DDC for assistance with the identification and management of cases and susceptible contacts. DDC can also work with healthcare providers to collect and test clinical specimens.

Fifth Disease (Human Parvovirus B19)

Common Signs and Symptoms	Fifth disease is caused by parvovirus B19 and is sometimes referred to as erythema infectiosum. This condition is a common, nonspecific viral illness that presents with a characteristic rash. Most people with fifth disease have no signs or symptoms and in children most parvovirus infections are mild. Early symptoms of fifth disease include fever, runny nose, malaise, myalgia, and headache. These symptoms are followed by the appearance of a fine and lacy rash on the extremities and trunk; the rash can be accompanied by facial flushing and paleness around the mouth, frequently described as a “slapped cheek” appearance. In immunocompromised persons the virus may cause severe anemia. Infected individuals, particularly adults, can experience joint pain and swelling. If fifth disease occurs in a pregnant woman there may be serious consequences for the fetus.
Incubation Period	The incubation period is normally between 4-14 days, with rash and/or joint pain occurring 2 to 3 weeks after initial onset of infection. The contagious period precedes the onset of rash, with infectivity declining as the rash appears.
Methods of Infection	The disease is most often spread by airborne droplets generated by sneezing or coughing. Transmission can also occur through exposure to blood or blood products or through exposure of a fetus to an infected mother.
Recommended Therapy and Management	There is no specific treatment, only supportive care is indicated.
Immunization Availability	None.
Exclusion from School	No exclusion is necessary unless the child has sickle cell disease or a compromised immune system. Individuals with these conditions tend to shed parvovirus for a longer amount of time in addition to experiencing more severe complications associated with the infection.
School Observation Period	None. However, pregnant students and teachers exposed to children in the early stages of parvovirus infection (5-10 days prior to the appearance of rash) should be referred to their physician due to the slight possibility of fetal damage.
Reportable to PDPH	No.
Remarks	Cases may occur sporadically, or in community-wide outbreaks during late winter and early spring, particularly in elementary and middle schools

Flu (Influenza)

Common Signs and Symptoms

Influenza, a contagious respiratory illness caused by an influenza virus, is commonly known as the flu. Infection is characterized by sudden onset of fever, cough, sore throat, runny or stuffy nose, chills, headache, fatigue, body aches, and sometimes diarrhea and vomiting. Symptoms usually resolve in 3 to 7 days. Influenza may be serious in pregnant women, elderly individuals, persons with chronic illness, and those who are immunocompromised.

Incubation Period

The incubation period is normally 2 days, with a range of 1 to 4 days.

Methods of Infection

Influenza is spread person-to-person by airborne droplets generated by sneezing or coughing, or by direct contact with droplet-contaminated surfaces. The contagious period begins 24 hours before symptoms develop and lasts about 7 days.

Recommended Therapy and Management

Supportive care is usually recommended to relieve the symptoms of the flu. Antiviral medications such as oseltamivir (Tamiflu®) and zanamivir (Relenza®) may be prescribed by a health care provider to treat the flu. Many minor cases of the flu resolve on their own, with over the counter medications lessening symptoms.

Immunization Availability

The flu vaccine is not required for school attendance however seasonal influenza vaccine is recommended for nearly anyone that wants to prevent getting the flu and spreading it to others. The vaccine is available as a shot (inactivated vaccine) or intranasal spray (live vaccine). An annual flu vaccine is recommended for most people: children 6 months to 18 years old; pregnant women; elderly people; anyone who cares for young children; healthcare workers and individuals who come into contact with patients; and those with underlying medical conditions such as lung, cardiac, metabolic (diabetes), renal, and immunosuppressive diseases.

Exclusion from School

Symptomatic children should stay home for at least 24 hours after they no longer have a fever or signs of fever without the use of fever-reducing medication. These recommendations may be altered when a more severe influenza virus is identified or during a concerning community-wide outbreak.

Flu (Influenza), continued

School Observation Period	No specific observation of contacts is necessary. If an outbreak of influenza is suspected in a school, consult with DDC for specific control measures including decisions regarding chemoprophylaxis and environmental control measures.
Reportable to PDPH	Individual cases of influenza are not reportable. However, outbreaks of influenza, hospitalizations and deaths from influenza, and novel influenza A infections are reportable to the Division of Disease Control (DDC). In some influenza seasons, DDC may request reporting of all hospitalizations and deaths due to influenza.
Remarks	<p>General control measures to prevent the spread of influenza in a school include getting the flu vaccine every year, and practicing respiratory etiquette and hand hygiene regularly. During influenza season (typically November-March of each year), individuals suspected of having the flu should be removed from the classroom and separated from other students until they are evaluated by a nurse or sent home. For additional information please refer to “PDPH’s Guidance for the Prevention and Management of Influenza in Philadelphia Schools.”</p> <p>Emerging influenza viruses, such as the novel H1N1 virus first recognized in the U.S. in 2009, may cause more severe illness than normally experienced with seasonal flu. The recommendations above generally apply to all flu viruses. When necessary, DDC will provide more detailed recommendations and guidance for novel influenza viruses. Consult DDC for assistance with or questions about any influenza viruses in the community.</p>

Giardiasis

Common Signs and Symptoms	Giardiasis is caused by the parasite <i>Giardia intestinalis</i> (also known as <i>Giardia lamblia</i> and <i>Giardia duodenalis</i>), and is characterized by abdominal pain, flatulence, malabsorption, weight loss, and diarrhea (often greasy). If untreated, the illness may be protracted and lead to significant weight loss and anemia. Immunocompromised individuals may experience more serious, prolonged illness.
Incubation Period	The incubation period is normally 3–25 days, with an average of 7–10 days.
Methods of Infection	The parasite is spread person-to-person by fecal-oral transmission or by ingestion of contaminated food or water (including recreational water like swimming pools). Giardiasis can also be spread animal-to-person, as cats, dogs, cattle, deer, and beavers can transmit the parasite. <i>Giardia</i> is shed in feces for as long as the carrier remains infected, which can last up to several months.
Recommended Therapy and Management	Most cases will not require treatment, as diarrhea is often self-limiting. Tinidazole, metronidazole, and nitazoxanide are effective treatments. Paromomycin, quinacrine, and furazolidone can be used as alternative treatments. Supportive treatment involving rehydration may also be needed.
Immunization Availability and Requirements	None.
Exclusion from School	Exclusion from school is recommended for confirmed cases and symptomatic siblings until diarrhea resolves. Infected children should avoid swimming and other pool activities for at least 2 weeks after diarrhea has resolved.
School Observation Period	None. Transmission of giardiasis in the classroom is extremely rare.
Reportable to PDPH	Yes — report all confirmed and suspect cases to the Division of Disease Control (DDC).
Remarks	Children and staff should be encouraged to practice good personal hygiene, with emphasis on hand washing after using the bathroom, and before eating or preparing food. Food handlers are excluded until they are asymptomatic and are practicing good hand hygiene. Normal chlorine concentrations used in recreational water do not kill giardiasis cysts. Those infected should avoid swimming, especially in public recreational waters, for at least 2 weeks after diarrhea resolves.

Gonorrhea (Gonococcal Infection)

Common Signs and Symptoms

Gonorrhea is a sexually transmitted disease (STD) caused by the bacteria *Neisseria gonorrhoeae*. Some men may show no symptoms, though they may experience a burning sensation while urinating, discharge from the penis (white, yellow or green), and / or painful or swollen testicles.

Most women show no symptoms, and any symptoms that arise are often mild. However, even without symptoms, women are at a greater risk of developing serious complications from the infection. Symptoms include: painful / burning sensation while urinating, increased vaginal discharge, and vaginal bleeding between periods.

In both men and women, rectal symptoms could arise that include: discharge, anal itching, soreness, bleeding, and painful bowel movements.

Incubation Period

The incubation period is normally 2–7 days.

Methods of Infection

Sexual contact with an infected person; includes vaginal, anal and oral sex. Gonorrhea may be spread even if ejaculation does not occur. Gonorrhea can also be passed from mother to child during delivery.

Recommended Therapy and Management

All cases and sexual contacts of cases should be evaluated and treated, the CDC now recommends dual treatment therapy (use of two drugs) when treating gonorrhea.

The recommended dual therapy for uncomplicated gonococcal infections by the CDC is:

- Ceftriaxone 250 mg IM in a single dose, PLUS Azithromycin 1g orally in a single dose.
- An alternative (if ceftriaxone is not available) is:
 - Cefixime 400 mg orally in a single dose, PLUS Azithromycin 1g orally in a single dose.

The student's physician should be consulted before treatment.

Immunization Availability and Requirements

None.

Exclusion from School

There is no exclusion recommended.

Gonorrhea, continued

**School
Observational Period** School observation is not necessary.

Reportable to PDPH Yes– by laboratory and diagnosing clinician.

Remarks Sexual abuse should be considered in pre-pubertal children; infection in those younger than 13 years old must be reported to Childline (800-932-0313) and to the Special Victims Unit (215-685-3251).

Students older than 12 years can be referred to the STD Clinic at 1400 Lombard Street (215-685-6570) or to District Health Care Center #5 at 20th and Berks Streets (215-685-2930). Students with symptoms should be encouraged to bring their sex partners with them to the clinic so both can be treated at the same time. Free condoms are available at all District Health Care Centers.

Group A Streptococcal Diseases (Strep Throat, Scarlet Fever, Impetigo)

Common Signs and Symptoms

Group A *Streptococcus* (GAS) is a type of bacteria that is commonly found in the throat and skin. Most infections caused by GAS, such as strep throat, Impetigo and scarlet fever, are mild and non-life threatening. However, sometimes this type of bacteria can cause invasive disease and severe illness when it is found in the blood, muscles, or lungs.

Symptoms of scarlet fever include a fine red rash (on the armpits, groin, and around the mouth), sore throat, fever, headache, decreased appetite, and swollen lymph nodes.

Symptoms of strep throat are throat pain, difficulty swallowing, reddened tonsils, fatigue, fever, and headache.

Symptoms of Impetigo are itching and small red pimples / fluid filled blisters that will ooze for several days, then form a crusted yellow scab. Most commonly found in Infants and children.

Incubation Period

The incubation period is normally 2- 10 days, though invasive GAS infections do not have a well-defined incubation period. Exposure period can be considered to be 3 days prior to symptom onset for investigative purposes.

Methods of Infection

Group A streptococci is spread by direct contact with secretions from an infected person's nose or throat, lesions, or rash (depending on which disease it is). Contact with infected wounds or skin may also increase an individual's risk of getting the infection. Bacteria could also be spread through the air.

Recommended Therapy and Management

Infections caused by GAS are often treated with antibiotics prescribed by a healthcare provider. In addition over-the-counter medications such as sore throat relievers and fever reducers may also be used to decrease length of symptoms.

Immunization Availability and Requirements

None.

Group A Streptococcal Diseases, continued

Exclusion from School

A person with a GAS infection should be excluded until antibiotic treatment has been initiated for at least 24 hours. Individuals with impetigo should have lesions covered during gym class or when participating in athletic events to prevent transmission.

School Observation Period

School-based contacts of confirmed cases of strep throat or scarlet fever should be observed for 10 days for signs of GAS infection (fever and sore throat, or fever and rash) and referred to a healthcare provider for evaluation only if symptoms appear.

Reportable to PDPH

No. GAS is not reportable to the Philadelphia Department of Public Health; only invasive diseases caused by GAS such as toxic shock syndrome, necrotizing fasciitis, bacteremia, and meningitis are reportable.

Remarks

Children suspected of having GAS infection should be evaluated by their health care provider / primary care physician. GAS infections can be prevented by handwashing and clipping fingernails to reduce subsequent spread.

Haemophilus influenzae Type b (HiB)

Common Signs and Symptoms	<p>Invasive <i>Haemophilus influenzae</i> type b (Hib) infections are caused by bacteria. Infections usually result in pneumonia, bacteremia (bacteria in the blood), meningitis (inflammation of the tissue covering the spinal cord and brain) or other invasive infections. Hib infections are serious and potentially fatal.</p> <p>Onset of bacteremia is sudden with fever, chills, and malaise. Symptoms of Hib meningitis are the same as those caused by other types of bacterial meningitis and include sudden onset of fever, headache, stiff neck, nausea, vomiting, and sensitivity to light (photophobia).</p>
Incubation Period	<p>The incubation period is unknown.</p>
Methods of Infection	<p>Hib is spread person-to-person by airborne droplets generated by sneezing or coughing or by direct contact with respiratory tract secretions. The contagious period is unknown.</p>
Recommended Therapy and Management	<p>Invasive Hib infection is a medical emergency requiring immediate evaluation by a health care provider. Hib infections require treatment with antibiotics.</p>
Immunization Availability and Requirements	<p>Two or three doses of Hib vaccine are recommended depending on the vaccine type. These are usually given at 2, 4, and 6 (3-dose vaccine) months. A booster is given at 12-15 months. Hib vaccine is not required for school entry.</p>
Exclusion from School	<p>Persons with Hib disease should be excluded from school until they have received 24 hours of effective therapy.</p>
School Observation Period	<p>Transmission and subsequent disease development in schools is rare but exposed children who develop similar symptoms should receive prompt medical evaluation.</p>
Reportable to PDPH	<p>Yes— report all confirmed and suspect cases to the Division of Disease Control (DDC) immediately.</p>
Remarks	<p>Consult with DDC for assistance with identification and management of cases and susceptible contacts. Prophylaxis may be recommended in certain circumstances for unimmunized household contacts. Where possible, encourage classroom contacts to minimize disease transmission by practicing respiratory etiquette and hand hygiene.</p>

Hand, Foot and Mouth Disease

Common Signs and Symptoms	Hand, foot, and mouth disease (HFMD) is usually a mild illness caused by viruses that are part of the Enterovirus family, and is typically seen in infants and young children. Early symptoms of HFMD include fever, reduced appetite, sore throat, and malaise. Within one to two days of fever onset, painful sores can appear in the mouth, often forming blisters that become ulcers. Other symptoms of HFMD include a red, spotty skin rash on the palms of the hands, soles of the feet, knees, elbows, buttocks, and genital area.
Incubation Period	The incubation period is normally 3-6 days.
Methods of Infection	Transmission can occur through contact with respiratory secretions, close personal contact, contact with contaminated objects and surfaces, direct contact with fluid from blisters, or via the fecal-oral route. Infected persons may shed the virus even if asymptomatic.
Recommended Therapy and Management	There is no specific treatment, only supportive care is indicated.
Immunization Availability	None.
Exclusion from School	Exclusion of infected children is recommended to help reduce the spread of infection, but this will not completely interrupt it. Exclusion may be considered for drooling children with active mouth blisters or for children with weeping blisters on their hands that cannot be covered.
School Observation Period	Monitor students for similar illness (e.g., fever, blisters on hands/mouth). These persons should be evaluated by their health care providers.
Reportable to PDPH	No- however clusters should be reported to the Division of Disease Control.
Remarks	HFMD transmission is most common during the summer and early fall, and community wide outbreaks frequently occur. The risk of HFMD can be lowered by good hygienic practices that include covering mouths and noses when sneezing or coughing and frequent handwashing, especially after contact with blisters or other bodily fluids. Contaminated surfaces and items can be cleaned by washing with soap and water followed by a disinfectant, such as a bleach solution.

Hepatitis A

Common Signs and Symptoms	Hepatitis A is an liver disease caused by the hepatitis A virus, and is characterized by fever, loss of appetite, fatigue, nausea, vomiting, abdominal pain, joint pain, jaundice (yellowing of the skin and eyes), dark urine, and elevation of liver enzymes. Most symptoms last a few weeks, but severe cases may last several months. Asymptomatic or mild infections may occur, especially among children. Chronic infection with hepatitis A virus does not occur.
Incubation Period	The incubation period is normally 28 days, with a range of 15 to 50 days.
Methods of Infection	Spread person-to-person by fecal-oral transmission or by ingestion of contaminated food or water. The virus is shed in feces as early as 2 weeks before the onset of symptoms, then until one week after the onset of jaundice.
Recommended Therapy and Management	There is no therapy for acute hepatitis A except supportive care. Post-exposure prophylaxis in the form of vaccine and/or immunoglobulin can be given within 2 weeks of exposure for household and intimate contacts of a patient with hepatitis A, but is not necessary for school contacts except in unusual circumstances.
Immunization Availability and Requirements	Inactivated hepatitis A virus vaccine is not required for school entry, but is recommended for all children >1 years of age and certain high-risk groups. The inactivated hepatitis A vaccine is administered in 2 doses at least 6 months apart. A combination hepatitis A/hepatitis B vaccine (Twinrix) is available for ages > 18 years and is given on a 3-dose schedule or an accelerated 4-dose schedule.
Exclusion from School	If the ill student is not toilet-trained, she/he should be excluded for 1 week after the onset of symptoms. Food-handling workers with hepatitis A are excluded from work for two weeks following the onset of illness and in consultation with DDC.
School Observation Period	Hepatitis A transmission in a classroom is rare; no observation period is recommended.
Reportable to PDPH	Yes – report all confirmed and suspect cases to the Division of Disease Control (DDC).
Remarks	Children and staff should be encouraged to practice good personal hygiene, with emphasis on hand washing after using the bathroom, and before eating or preparing food. Consult DDC for outbreak assistance in identification and management of contacts and the need for post exposure prophylaxis. See also hepatitis B, hepatitis C.

Hepatitis B (HBV)

Common Signs and Symptoms

Hepatitis is a viral illness that results in liver inflammation/disease. The likelihood of developing symptoms of acute or chronic hepatitis B virus (HBV) infection is dependent on a person's age at the time of infection. Individuals older than 5 years of age infected have a 6% - 10% chance of developing chronic hepatitis B. Chronic hepatitis B infection is a major risk factor for cirrhosis and liver cancer. Symptoms of HBV include flu-like symptoms (e.g., muscle aches, nausea, vomiting), jaundice (yellow skin, yellow in whites of the eyes), dark urine, clay-colored bowel movements, fatigue, loss of appetite, abdominal pain, joint pain, and tiredness.

Incubation Period

The incubation period is normally 90 days, with a range of 45 to 160 days.

Methods of Infection

Infected individuals are reservoirs for hepatitis B virus, with the virus being spread through percutaneous or mucosal contact with infected blood, semen, saliva, and other bodily fluids. Skin puncture through a needle stick is the most common form of infection. HBV can survive outside of the body for a week and still be capable of infecting, though common disinfectants can prevent this.

Recommended Therapy and Management

There is no specific treatment for acute HBV infection however there are treatment options available for chronic HBV infection. If exposure to HBV is suspected, post exposure prophylaxis (PEP) should be initiated within 24 hours to be most effective. Hepatitis B immune globulin (HBIG) and hepatitis B vaccine are recommended for PEP and should be given immediately or within 7 days.

Immunization Availability and Requirements

Required Immunization

Three doses of HBV vaccine should be given at birth, 1-2 months, >2 months, and a 4th dose later in life if necessary. For adults (>18 years of age) three doses should be given, with spacing depending on the vaccine type. This is a required immunization for school entry.

Exclusion from School

Exclusion is generally not recommended. However, if a child with known hepatitis B has weeping sores or a bleeding problem they should be excluded until the skin lesions are dry or covered and/or cleared to return by a healthcare professional.

School Observation Period

The risk of hepatitis B transmission in schools is minimal; no observation period is recommended.

Reportable to PDPH

Yes— report all confirmed and suspect cases to the Division of Disease Control.

Remarks

Individuals infected with hepatitis B should be allowed to participate in all physical activity. Hepatitis D is also transmitted through the blood but only occurs in those previously infected with HBV. For more information on hepatitis A or C consult those sections.

Hepatitis C (HCV)

Common Signs and Symptoms

Hepatitis C is a liver disease caused by the hepatitis C virus (HCV). Infection with HCV can be acute or chronic. Of people that are infected with HCV, 20% will have an acute infection and clear the infection on their own. Eighty percent of people infected with HCV will become chronically infected. If a person has an acute infection and clears the infection, they can still become re-infected with HCV.

Symptoms of HCV include fever, fatigue, loss of appetite, nausea, vomiting, abdominal pain, dark urine, pale-colored stools, joint pain, and jaundice. About 90% of HCV infections are asymptomatic or mild.

Incubation Period

The incubation period is normally 6 to 7 weeks, with a range of 2 to 26 weeks.

Methods of Infection

Hepatitis C transmission may occur through sharing needles, syringes, and other injection drug equipment or personal items such as razors, perinatal spread, blood transfusions prior to 1992, unclean tattoo or piercing equipment, sex, or occupational exposure (needle sticks, etc.). HCV can survive outside the body from 16 hours to 4 days where it can cause infection, though common disinfectants can deactivate the virus.

Recommended Therapy and Management

There is no specific treatment for acute HCV infection. There are treatment options available for chronic HCV, although not everyone who has chronic hepatitis C is recommended for treatment. A number of factors will be taken into consideration by the treating physician when deciding whether or not treatment should be given.

Immunization Availability and Requirements

None, infected individuals are recommended to receive hepatitis A & B vaccines to prevent further infection.

Exclusion from School

No exclusion is recommended.

School Observation Period

No observation period is necessary.

Reportable to PDPH

Yes— report all confirmed and suspect cases to the Division of Disease Control (DDC).

Remarks

People should not be excluded from work, school, play, sports, childcare, or other settings because they have hepatitis C. For more information on hepatitis A or B consult those sections.

Herpes Simplex

Common Signs and Symptoms

Herpes simplex virus (HSV) is a viral infection that causes a variety of infections. Two distinct types of HSV exist: HSV-1 and HSV-2. HSV-1 infections generally involve the face and skin above the waist. Infections with HSV-2 usually involve the genitalia and skin below the waist in sexually active adolescents. However, either virus can infect either region.

Children are most commonly infected with HSV-1. Symptoms are fever, irritability, tender swollen lymph nodes, and painful small blisters in the mouth, on the gums, or lips that weep clear fluid and are slow to crust over. Adolescents and adults are most commonly infected with HSV-2. Symptoms are blister or ulcer-type lesion on genitalia, or perineum, or both.

Incubation Period

The incubation period is normally 2 days to 2 weeks.

Methods of Infection

The virus is spread person-to-person by direct contact with saliva and contact with open sores. HSV infections are common and can be transmitted from people who are symptomatic or asymptomatic. The contagious period for people with primary lesions is at least 1 week from onset. People with recurrent lesions shed virus for only 3-4 days.

Recommended Therapy and Management

Antiviral medications are used to treat HSV infections. Over the counter medications can also provide symptom relief, particularly for oral blisters.

Immunization Availability and Requirements

None.

Exclusion from School

Generally, children with cold sores should not be excluded from school. However, children with mouth ulcers and blisters who are unable to control their drooling should be excluded from school until those symptoms resolve.

School Observation Period

It is not necessary to monitor students for the development of HSV infections.

Reportable to PDPH

No.

Remarks

HSV transmission can be controlled by frequent and careful handwashing, avoiding direct contact with cold sores, covering any active exposed cold sores on a young child, and washing and sanitizing objects that may come into contact with saliva from any child.

Human Immunodeficiency Virus (HIV) & Acquired Immunodeficiency Syndrome (AIDS)

Common Signs and Symptoms	HIV infection causes a broad spectrum of symptoms and has a varied clinical course. The initial acute infection usually occurs as a flu-like illness. Later manifestations include, but are not limited to, the following: failure to thrive, malaise, weight loss, coughing and shortness of breath, seizures and lack of coordination, fever, vision loss, confusion and forgetfulness, fatigue, diarrhea, generalized lymphadenopathy, recurrent bacterial infections and opportunistic infections such as oral thrush, lymphoid interstitial pneumonia, and systemic cytomegalovirus and herpes virus infections.
Incubation Period	Serum antibody to HIV usually develops within 6 to 12 weeks after infection. Onset of symptomatic infection in children may occur within 3 to 5 years but varies greatly. HIV infection may remain asymptomatic for years.
Methods of Infection	Transmission occurs by sexual contact (both homosexual and heterosexual), sharing needles with an infected person, accidental needle sticks or mucous membrane exposure to blood and body fluids, or from an infected mother to her child before and during birth. Transmission can also occur from mother to child through breastfeeding. Transfusion of blood or blood products is now a rare mode of transmission. HIV transmission does not occur with casual contact.
Recommended Therapy and Management	Antiviral therapy, prophylaxis and treatment of opportunistic infections as indicated. While there are treatments to maintain and manage HIV/AIDS, there is no known cure.
Immunization Availability and Requirements	None
Exclusion from School	Though HIV itself is not a reason for school exclusion, each case will be determined in consultation with the AIDS Activities Coordination Office (AACO), Philadelphia Department of Public Health, 215-685-6671.
School Observation Period	Consult with AACO.
Reportable to PDPH	Yes — report all cases of HIV to AACO Surveillance Unit at 215-685-6672.
Remarks	Maintain confidentiality of the infected individual and reference the PSD policy on HIV/AIDS. Standard precautions for the prevention of transmission of bloodborne pathogens should be observed. Counsel infected individual concerning possibility and means of transmitting infection to others. Ensure that family is linked to primary medical care and social services, as needed.

Human Papillomavirus (HPV)

Common Signs and Symptoms

The Human Papillomavirus or HPV is an infection that can cause lesions or warts that occur on or near the genitals or anus. Genital warts can be small, large, raised, flat, or cauliflower shaped lesions. These types of warts rarely cause pain or discomfort. However, lesions located within the female genital tract are associated with malignancy.

Warts may also occur on a person's hands (common wart), feet (plantar warts), mouth, or upper respiratory tract. Warts that appear in these areas are non-malignant and may cause some discomfort.

Incubation Period

Unknown, but is estimated to be 3 months to several years.

Methods of Infection

HPV infections that cause genital warts are transmitted by sexual contact or skin-to-skin contact with an infected person. The infection can be transmitted even when there is no evidence of genital warts. Other warts associated with HPV such as common and plantar warts can be spread person to person or indirectly via contaminated fomites.

Recommended Therapy and Management

There is no treatment for HPV infection, but rather for symptoms and associated problems. In many cases warts will spontaneously resolve. Treatment for genital warts includes the following: laser surgery, surgical removal, cryotherapy (freezing with liquid nitrogen), and electrocautery (electrical current used to burn off warts). Treatment for other warts is: laser surgery, surgical removal, topical treatments, and cryotherapy.

Immunization Availability and Requirements

Immunization against HPV is not required to attend school. There are three HPV vaccines (Cervarix, Gardasil, and Gardasil 9) which can help protect against cervical, vulvar, and vaginal cancer in females. Gardasil and Gardasil 9 can also protect against genital warts and anal cancer in both females and males. HPV vaccines consist of three doses with the second and third doses administered two and six months after the first. It is recommended that vaccination be initiated in 11-12 year olds although women may get the vaccine up until the age of 26 and men until the age of 21 (up to the age of 26 for men who are immunocompromised or who have sex with men).

Exclusion/Observation from School

None.

Reportable to PDPH

No.

Remarks

Children should be advised to avoid touching warts and frequent handwashing should be encouraged to prevent further spread and infection. HPV infection increases an individual's risk for developing certain cancers, especially in females. Almost all cervical cancer cases are caused by HPV.

Infectious Diarrhea

Common Signs and Symptoms

Traditionally, diarrhea has been defined as three or more loose or watery stool in a 24-hour period. There are many reasons for diarrhea, from medications to change in diet. Different bacterium (e.g., *Shigella*, *Campylobacter*, *Escherichia coli*, *Clostridium difficile*), parasites (e.g., *Cryptosporidium parvum*, *Giardia lamblia*) and viruses (e.g., norovirus, enterovirus, rotavirus) cause infectious diarrhea. The symptoms can include: loose watery stools (can be bloody, mucousy, or greasy), abdominal pain and cramping, flatulence, dehydration, fever and malaise. Many diarrheal illnesses have marked seasonality, such as salmonellosis and giardiasis in the summer and norovirus and rotavirus in the winter.

Incubation Period

The incubation period varies depending on the organism.

Methods of Infection

Infectious diarrhea can be spread by ingestion of contaminated food or water (including swimming pools), contact with infected animals, or by person-to-person via fecal-oral transmission. Some forms of infectious diarrhea such as *Clostridium difficile* may result from long-term exposure to antibiotics.

Recommended Therapy and Management

Treatment for most diarrheal illnesses is supportive, which includes electrolyte/fluid replacement. Whether antibiotic therapy is needed is dependent on the organism and antibiotic resistance testing.

Immunization Availability and Requirements

There are vaccines to prevent the following diarrheal diseases: rotavirus, hepatitis A, and typhoid fever. Refer to the individual disease section for more information.

Exclusion from School

School aged children who are symptomatic (those with diarrhea) should be excluded until symptoms resolve. Certain causes of infectious diarrhea require the exclusion of food handlers and those attending or working in childcare settings until cleared by PDPH. Please refer to specific disease sections for additional information or consult with PDPH for any conditions not detailed in this reference.

Infectious Diarrhea, continued

School Observation Period Diarrheal transmission in school-aged children is rare. Clusters of diarrhea may indicate a common exposure such as food or a field trip.

Reportable to PDPH **Yes**– Infectious diarrhea due to the following diseases is reportable: *Campylobacter*, *Cryptosporidium*, *Giardia*, *E. coli*, hepatitis A, *Salmonella*, and *Shigella*. Clusters of infectious diarrhea are also reportable to the Division of Disease Control (DDC).

Remarks Children and staff should be encouraged to practice good personal hygiene, with emphasis on handwashing after using the bathroom and before eating or preparing food. Careful attention should be made to ensure adequate hand hygiene after animal contact on field trips such as visits to farms and/or petting zoos.

In order to identify the cause of the diarrhea, the collection of stool specimens and evaluation by a healthcare provider is recommended. Laboratory testing is the only mechanism to confirm the cause of infectious diarrhea and it also aids in demonstrating clearance of the causative organism.

For specific information regarding diarrhea due to campylobacteriosis, *E. coli* infection, giardiasis, hepatitis A, norovirus, rotavirus, salmonellosis, and shigellosis, please refer to those sections.

Lice (Pediculosis)

Common Signs and Symptoms

Lice are tiny parasitic insects that survive by feeding on human blood. There are several different species of lice named for the location of the body they inhabit. *Pediculosis capitis* occurs on the head, *pediculosis corporis* occur on the body, and *pediculosis pubis* (or crabs) occurs in the genital area. Head lice are the most common form of pediculosis in children.

Symptoms of lice include: intense itching of the skin where the lice feed, tingling feeling from movement of lice in the hair, small red bumps on the scalp, neck, or shoulder, visualization of lice or lice eggs in the hair or other body region.

Incubation Period

The incubation period is usually 6 to 10 days from laying to hatching eggs. Lice can reproduce 2 to 3 weeks after hatching.

Methods of Infection

Lice do not walk or fly; they are transmitted through the following routes:

- Head lice are spread by direct contact with infested hair or by indirect contact with contaminated combs, brushes, hats, blankets, or sheets.
- Pubic lice are spread by sexual contact or by sharing towels.
- Body lice are transmitted by direct contact or through contaminated items such as clothing.

Recommended Therapy and Management

There are several non-prescription and prescription shampoo and lotion options available to effectively treat lice. Non-prescription methods include mechanical removal of lice using a special fine-tooth comb and over the counter shampoo and creams. If the infestation is not cleared using non-prescription methods, a health care provider can be consulted to determine which prescription option is best for treatment. Items such as clothing and bedding must be laundered in hot water or dry cleaned.

Immunization Availability and Requirements

None

Lice (Pediculosis), continued

Exclusion from School

Persons with head lice do not need to be sent home early and can return following the initiation of treatment. “No Nit” policies requiring that children be free of nits before returning to school have generally not been effective in controlling head lice transmission. Those with other forms of pediculosis may return to school following their first treatment with an effective pediculicide. Removal of nits (eggs) is not required if effective treatment has been given.

School Observation Period

Classroom contacts should be examined and treated if infested. Lice can only survive for days away from a host.

Reportable to PDPH

No.

Remarks

Lice do not cause disease but having an infestation may result in a secondary skin infection due to intense scratching. There has been reported resistance of over-the-counter treatment options so persons with lice infection may need a prescription from their health care provider for an appropriate pediculicide.

Additionally, children should be encouraged not to share combs, brushes, hats, hair ornaments, or other personal items until the infestation has been treated adequately. To prevent further spread within households, household members should also be examined using lice combs or small flat wooden sticks to determine if they are also infested and need treatment.

Lyme Disease

Common Signs and Symptoms

The bacterium that causes Lyme disease, *Borrelia burgdorferi*, is transmitted to a person from the bite of an infected tick. Signs and symptoms of Lyme disease vary because it can affect different parts of the body. Not all people will experience all of the symptoms listed below.

Early symptoms of Lyme disease include a characteristic circular rash (erythema migrans) that may clear in the center as it expands giving it a “bull’s eye” like appearance, joint pain, and flu-like symptoms (e.g., fever, headache, chills, fatigue, myalgias). If left untreated, the *Borrelia* bacteria can spread from the initial site of infection to other areas of the body. People with disseminated disease may develop arthritic pain, especially in the large joints, (e.g., knee), neurological problems, including Bell’s palsy, meningitis, and numbness or weakness in the limbs. Less common manifestations include irregular heartbeat, hepatitis, and eye inflammation.

Incubation Period

The incubation period is normally 3 to 32 days with an average of 7-10 days.

Methods of Infection

The *Borrelia* bacteria are transmitted when an infected deer tick (or blacklegged tick) attaches onto the skin and feeds. The likelihood of disease transmission is greater with increased time of tick attachment, and usually a tick must be attached for 36-48 hours before the bacterium is transmitted. The majority of cases occur in the Northeast and eastern mid-Atlantic regions of the United States, with less frequent occurrences in the upper Midwest and Northwest.

Recommended Therapy and Management

A 14-21 day course of antibiotics will usually prevent late term manifestations and clear the infection. Depending on the stage of disease and severity of symptoms a health care provider may also recommend intravenous medication.

Immunization Availability

None.

Exclusion from School / Observation Period

No exclusion from school or observation period is recommended.

Reportable to PDPH

Yes— report all confirmed and suspect cases to the Division of Disease Control (DDC).

Remarks

The best way to prevent Lyme disease is to avoid tick bites. Check for ticks after field trips where students could come into contact with potential tick habitats, such as tall grassy areas or woodlands. If an outdoor field trip is planned, instruct children to dress in light colored clothing, and to cover exposed skin by wearing long sleeves and pants (weather permitting), a hat, and closed shoes. Cautious use of insect repellent with 20 to 30% DEET or Permethrin is also recommended.

Measles (rubeola)

Common Signs and Symptoms

Measles, also known as rubeola, is a highly contagious viral illness caused by a paramyxovirus. Measles is usually a mild or moderately severe illness, but can be complicated by pneumonia, encephalitis, and death.

Symptoms of measles include a sudden onset of prodrome (lasts 2-4 days) characterized by high fever, cough, runny nose, and red watery eyes followed by a maculopapular rash, lasting 5-6 days. The rash develops at the hairline and descends down the body to the trunk and limbs. It fades in the same order that it appears. Small red spots in the mouth, called Koplik spots, appear 1-2 days before to 1-2 days after the development of the rash. Other symptoms include loss of appetite, diarrhea, and generalized lymphadenopathy.

Incubation Period

The incubation period from exposure to rash onset is 7-21 days, with an average of 14 days.

Methods of Infection

Measles is spread via respiratory droplets which may be airborne and present for 2 hours after an infected person leaves a closed space. The contagious period is 4 days before the onset of rash to 4 days after the appearance of the rash. Immunocompromised people may shed virus for the duration of their illness.

Recommended Therapy and Management

There is no medical therapy for measles, except supportive care.

Immunization Availability and Requirements

Required Immunization

Measles-containing vaccine is usually given as measles, mumps, rubella (MMR) or measles, mumps, rubella, and varicella (MMRV) vaccine. Two doses of vaccine are given to children at 12-15 months old and 4-6 years old. Two doses of vaccine, given after the first birthday, are required to attend school.

Exclusion from School

Persons with measles should be excluded from school for 4 days from the onset of rash. After 4 days these persons are no longer considered infectious and they can return to the school community.

Measles (rubeola), continued

School Observation Period and Control Measures

- One case of measles in a school is considered an outbreak.
- Observe all school students for the development of rash for 21 days after rash onset in the last case.
- Review all student immunization records to ensure that students are up-to-date on vaccinations. Any student who is not up-to-date is considered susceptible to measles and should be vaccinated immediately, unless contraindicated. Vaccination after exposure to measles is not harmful and may protect against development of disease if given within 72 hours of exposure. Vaccination will also provide protection against subsequent measles exposures.
- Exposed staff who do not have documented evidence of immunity are considered susceptible and should be vaccinated, unless contraindicated. Acceptable evidence of immunity for staff is documentation of two doses of vaccine, serologic evidence of immunity, or born before 1957.
- Susceptible contacts may be readmitted following measles immunization, if given within 72 hours of exposure. Otherwise, these individuals require exclusion for 21 days after rash onset in the last case.
- Susceptible contacts who refuse or are contraindicated to receive live virus vaccine should be excluded for 21 days after rash onset in the last case.
 - Immune globulin (IG) is recommended for post-exposure prophylaxis for people with contraindications to live virus vaccine, but it must be given within 6 days of exposure.

Reportable to PDPH

Yes— report all confirmed and suspect cases to the Division of Disease Control (DDC) immediately.

Remarks

Exposed pregnant women, infants and immunocompromised people should be referred to their health care provider. Consult with DDC for assistance with identification and management of cases and susceptible contacts. DDC may also be able to assist with vaccine and postexposure prophylaxis needs following an exposure.

Meningococcal Infection

Common Signs and Symptoms

Invasive meningococcal infections are caused by the gram-negative diplococcus bacteria, *Neisseria meningitidis*. Meningococcal infections usually result in meningitis (inflammation of the tissue covering the spinal cord and brain), bacteremia (bacteria in the blood), or both. Meningococcal infections are serious and potentially fatal.

Onset of bacteremia is sudden with: fever, chills, malaise, and either a petechial or purpuric rash.

Symptoms of meningococcal meningitis are the same as those caused by other types of bacterial meningitis and include sudden onset of fever, headache, stiff neck, nausea, vomiting, and sensitivity to light (photophobia).

Incubation Period

The incubation period is normally 3-4 days, with a range of 2 to 10 days.

Methods of Infection

Meningococcal disease is spread person-to-person by respiratory droplets generated by coughing and sneezing or by direct contact (e.g., kissing, sharing cups) with an infected individual. Someone infected with *N. meningitidis* is contagious for about a week before they become ill until 24 hours after the initiation of appropriate antibiotics. *N. meningitidis* lives in the upper respiratory tract of about 5-10% of the population, without causing illness (asymptomatic carriage).

Recommended Therapy and Management

Meningococcal infection is a medical emergency requiring immediate evaluation by a health care provider. The drug of choice for treatment of meningococcal infection is penicillin, but several other antibiotics are also effective. Antibiotic chemoprophylaxis (ciprofloxacin, ceftriaxone, or rifampin) is recommended for close contacts of a case of meningococcal disease (see School Observation section on next page).

Immunization Availability and Requirements

****Required Immunization****

There are 3 meningococcal vaccines (meningococcal conjugate vaccines (MCV4), meningococcal polysaccharide vaccine (MPSV4), and serogroup B meningococcal vaccine (MenB)). Children aged 11-12 years should receive a dose of quadrivalent meningococcal vaccine (MCV4), followed by a booster dose at age 16 years. One dose of MCV4 on or after the 2nd birthday is required for 6-7 grade entry. Vaccination with MCV4, MPSV4, and MenB is also recommended for certain other high risk individuals.

Meningococcal Infection, continued

Exclusion from School

Persons with meningococcal disease should be excluded from school until they have received 24 hours of effective therapy. Infected persons are not considered contagious after 24 hours of appropriate antibiotic treatment.

School Observation Period

Transmission and subsequent disease development in schools is rare. Students should be monitored for similar illness for 2 weeks from the initial case. Those who develop signs of meningitis or bacteremia should be evaluated by a health care professional immediately.

Antibiotic chemoprophylaxis (ciprofloxacin or rifampin) is recommended and should be offered immediately to close contacts of a case. Close contact includes household members, girlfriends/boyfriends, members of the same sports team, as well as preschool contacts and others who have been exposed to the oral secretions of an infected student.

Reportable to PDPH

Yes— report all confirmed and suspect cases to the Division of Disease Control (DDC) immediately.

Remarks

Casual contact with a case in a school is not a risk for disease transmission. Consult DDC at 215-685-6742 for questions about meningococcal disease and management of exposed persons. For additional information on meningitis see the following sections: bacterial meningitis, viral meningitis, and *Haemophilus influenzae* type B.

Molluscum Contagiosum

Common Signs and Symptoms	Molluscum contagiosum is an infection caused by a poxvirus. It is characterized by small (2-5 mm), smooth, firm, painless bumps (called Mollusca) that can appear anywhere on the body, although lesions on the palms of the hands or soles of the feet are uncommon. Mollusca usually show a white, pink, or flesh color with a dimple or pit in the middle. They can become itchy, sore, red, and/or swollen. This type of infection is common in children, but it can also affect adults.
Incubation Period	The incubation period is normally 2-7 weeks.
Methods of Infection	Molluscum contagiosum is transmitted through direct person-to-person contact and by sharing contaminated personal items (such as towels, toys, and clothing). An infected individual can also spread molluscum onto other parts of their body by touching or scratching a lesion and then touching their body somewhere else. This illness is not considered to be highly infectious; however a few outbreaks in childcare centers have been reported along with common exposure to a swimming pool and its environment.
Recommended Therapy and Management	In children with healthy immune systems, treatment is not recommended, most cases resolve without medication within 6–12 months (although more severe cases may take up to 4 years). However if the lesions do not resolve on their own then scraping (cutterage), freezing (cryotherapy), laser therapy, or oral / topical therapy may be used.
Immunization Availability	None.
Exclusion from School / Observation	Exclusion from school and observation are not recommended.
Reportable to PDPH	No.
Remarks	<p>In order to reduce the spread of Molluscum contagiosum, consider the following:</p> <ul style="list-style-type: none">• Decrease the amount of direct contact with the infected person.• Lesions not covered by clothing should be covered with a watertight bandage.• Restrict the sharing of inanimate objects (fomites) that may increase the spread of infection.• Frequently wash hands with soap and water, especially after contact with lesions.

Mononucleosis (Mono)

Common Signs and Symptoms	<p>Mononucleosis (mono) is caused by the Epstein-Barr virus and usually results in an acute viral illness. Young children usually have mild or no symptoms at all, while adolescents or young adults may have more severe illness.</p> <p>Symptoms of mononucleosis include: fever, sore throat, fatigue which can last for months, head and body aches, lymphadenopathy, splenomegaly, and rash.</p>
Incubation Period	<p>The incubation period is normally 30 to 50 days.</p>
Methods of Infection	<p>Mononucleosis is spread through close person-to-person contact via bodily fluids, especially saliva (e.g., through kissing or sharing objects contaminated with saliva such as toys, toothbrushes, eating utensils, or cups). It may also be spread through blood transfusions, sexual contact, and organ transplantations.</p>
Recommended Therapy and Management	<p>There is no specific treatment. Supportive management of symptoms is recommended and may include over the counter medications for fever and pain, drinking fluids to stay hydrated, and getting plenty of rest. In some cases, a short course of corticosteroid therapy may be used for the treatment of acute symptoms.</p>
Immunization Availability and Requirements	<p>None.</p>
Exclusion from School	<p>No exclusion from school is necessary. However, those participating in contact sports should be excluded until fully recovered.</p>
School Observation Period	<p>Students, especially close contacts of the case, should be monitored for the development of mononucleosis symptoms for one month.</p>
Reportable to PDPH	<p>No.</p>
Remarks	<p>Prior infection with the virus will usually provide long-lasting immunity. Persons with mononucleosis should not participate in contact sports until fully recovered to avoid the risk of spleen rupture. Contact the Division of Disease Control at 215-685-6742 regarding any outbreaks of mono in a school.</p>

Mosquito Borne Diseases

Common Signs and Symptoms

There are several diseases that can be transmitted to humans by infected mosquitoes. Arboviruses, which are spread by mosquitoes or ticks can result in no symptoms at all, mild flu-like symptoms, or more serious complications such as meningitis, encephalitis, meningoencephalitis, or even death. Types of arboviral infections that can cause encephalitis include the following: West Nile Virus (WNV), St. Louis Encephalitis, Eastern Equine Encephalitis (EEE), Western Equine Encephalitis (WEE), and La Crosse Encephalitis. In temperate climates, most locally-acquired mosquito borne infections occur from mid-summer to early fall when mosquitoes are most active.

Dengue virus and chikungunya virus are also arboviral infections that are spread by mosquitoes found in warmer climates usually outside the United States and can cause febrile illness in travelers returning from tropical and subtropical regions. Most chikungunya cases also have polyarthralgia, while dengue infections can progress to more severe illness (hemorrhagic fever or shock syndrome) that can be fatal.

Other travel-related diseases caused by mosquitoes that may be seen in travelers or immigrants of foreign countries include malaria and in extremely rare instances yellow fever (also an arboviral disease). Malaria is not caused by a virus but rather a parasite that infects the red blood cells of the host. Signs and symptoms of malaria include: flu-like symptoms (e.g., fever, chills, sweats, headache, cough, nausea, vomiting), diarrhea, arthralgia, myalgia, abdominal pain, jaundice, back pain, and blood abnormalities (e.g., anemia).

Incubation Period

The incubation period for arbovirus is normally several days to several weeks. Specifically, the incubation period for West Nile Virus, dengue virus, and chikungunya virus can range from 1 to 3 days and up to 12 to 14 days. The incubation period for malaria normally varies from 7 to 30 days although a person may feel ill as late as 1 year later.

Methods of Infection

Viruses and/or parasites are transmitted through the bite of an infected mosquito, there is no person to person transmission. Malaria and WNV can be spread through blood transfusions or organ donation as well.

Recommended Therapy and Management

There is no specific treatment for arboviral infections, management is supportive depending on the symptoms. Given the consequences of severe dengue infection, patients with suspected chikungunya should be managed as dengue until it is ruled out, with acetaminophen recommended for initial fever and pain control.

Treatment for malaria varies based on the infecting species, drug resistance, and severity of disease. Severe cases require intensive care and parenteral antimalarial treatment. Malaria medications may be administered orally or by IV depending on the severity of the case and should be started as soon as possible.

Mosquito Borne Diseases, continued

Immunization Availability and Requirements

With the exception of yellow fever, there is no vaccine to prevent arboviral infections. The yellow fever vaccine is recommended for adults and children over 9 months of age who are traveling to an area where yellow fever is endemic. The vaccine is a live virus vaccine and will confer immunity for 10 years.

There is no vaccine to prevent malaria but anti-malarial medications can be taken prior to and during travel to an area with known transmission to prevent infection.

Exclusion from School

No exclusion from school is necessary, as diseases are not spread from person to person. Exclusion from school should be based on health of child and ability to participate in class.

School Observation Period

No school observation period is required.

Reportable to PDPH

Yes— report all confirmed and suspect cases to the Division of Disease Control (DDC) immediately.

Remarks

Contact the Division of Disease Control at 215-685-6742 with any questions about mosquito borne diseases or malaria chemoprophylaxis. Because the signs and symptoms of these conditions are so similar, evaluation by a healthcare provider along with laboratory testing is required for a diagnosis.

In order to prevent mosquito-borne illnesses, it is important to prevent mosquito bites by using (with caution) insect repellents that contain DEET or a similar product, staying inside during dusk and dawn when mosquitoes are most active, wearing long sleeves and pants to cover skin, check windows to prevent mosquitoes from flying indoors, and emptying standing water in wading pools, buckets, pots, etc. that can serve as mosquito breeding grounds.

MRSA (Methicillin Resistant *Staphylococcus aureus*) Infections

Common Signs and Symptoms

Methicillin-resistant *Staphylococcus aureus* (MRSA) is a type of bacterium that is resistant to treatment with certain antibiotics. Usually, MRSA causes skin infections that may be mistaken at first for “spider bites,” resembling pimples or small red boils, but it can also cause more serious infections such as blood stream infections or pneumonia. Until recently, MRSA occurred mainly in hospitals and nursing homes, but now it is more common in community settings such as schools, colleges and fitness facilities (gyms) and among groups of people who have frequent close contact (i.e., household contacts, college dorm students, sports teams, military personnel).

Incubation Period

The incubation period is variable.

Methods of Infection

MRSA is acquired by contact with the bacterium, usually through a small break in the skin, either by direct contact with someone who has a MRSA infection or by contact with contaminated bandages, clothing or surfaces. MRSA is not spread through the air.

Recommended Therapy and Management

All skin or soft tissue infections should be reported to the school nurse. School nurses should refer children with skin lesions that appear to be staph infections to a healthcare provider for evaluation. In some instances healthcare providers will provide oral or topical medication to help the infection resolve. A laboratory culture is required for confirmation of MRSA infection.

All skin and soft tissue infections must be covered with a clean bandage until completely healed. Gloves should be used when changing bandages and soiled bandages should be disposed of in infectious waste containers or placed inside a plastic zip lock bag before being discarded.

Immunization Availability and Requirements

None.

Exclusion from School

Exclusion from school is not necessary provided the infection site can be completely covered with a clean dressing and the child is feeling well. However, students should be excluded from contact sports and gym class until the infection is healed. Students who are not able to keep their wounds covered or maintain good hand hygiene are to be excluded from school until the infection is cleared.

MRSA Infections, continued

School Observation Period None, however ongoing surveillance for soft tissue infections should be initiated once a single case has been confirmed in the school. Refer to the Philadelphia Department of Public Health’s “Recommendations for the Prevention and Control of MRSA in Schools and Childcare Settings” for additional information.

Reportable to PDPH Individual cases of MRSA are NOT reportable to PDPH. However, clusters of MRSA infections are reportable to the Division of Disease Control (DDC).

Remarks Good personal hygiene is very important in preventing and controlling the spread of MRSA, and should include:

- Frequent handwashing with soap and water or use of an alcohol based hand sanitizer
- Avoiding sharing personal items (e.g., clothing, bar soap, towels, uniforms, deodorant)
- Showering after playing sports or using gym equipment

Because staph bacteria are primarily carried on people, there are no routine disinfection measures that are recommended for schools or offices to eliminate staph from the environment. Common-use equipment used by sports teams and other groups may require additional cleaning, if there appears to be transmission in these settings. Cleaning of shared surfaces/equipment is recommended in settings where a risk for direct skin contact is identified (e.g., gym equipment, athletic gear), particularly when there is possible MRSA spread among users of the shared facility or equipment. Many common disinfectants are approved by the EPA to be effective against MRSA.

For additional information regarding the prevention and control of MRSA in the school setting, including posters, fact sheets, and guidance regarding communication to the school community, contact the Division of Disease Control at 215-685-6740, or consult PDPH’s “Recommendations for the Prevention and Control of MRSA in Schools and Childcare Settings.”

Mumps

Common Signs and Symptoms

Mumps is a contagious viral illness caused by a paramyxovirus. It is characterized by painful salivary gland swelling. Mumps is usually a mild, self-limited illness. Symptoms of mumps include: swollen salivary glands (either unilateral or bilateral), low-grade fever, headache, muscle aches, tiredness, and loss of appetite. Symptoms decrease after 1 week and usually resolve after 10 days.

At least one-third of infections do not cause clinically apparent parotitis and may manifest as a respiratory tract infection. Infections may also be asymptomatic. Complications can include orchitis (inflammation of the testicles), oophoritis (inflammation of the ovaries), temporary or permanent deafness and meningitis.

Incubation Period

The incubation period is normally 16-18 days, with a range of 12-25 days.

Methods of Infection

Mumps is spread by airborne droplets generated by sneezing or coughing. The contagious period is 3 days before to 5 days after the onset of parotitis.

Recommended Therapy and Management

There is no medical therapy for mumps, except supportive care.

Immunization Availability and Requirements

****Required Immunization****

Mumps containing vaccine is usually given as measles, mumps, rubella (MMR) or measles, mumps, rubella, and varicella (MMRV) vaccine. Two doses of vaccine are given to children at 12-15 months old and 4-6 years old. Two doses of vaccine, given after the first birthday, are required for school entry.

Exclusion from School

Persons with mumps should be excluded from school for 5 days from the onset of parotid gland swelling. After 5 days these persons are no longer considered infectious and they can return to the school community.

Mumps, continued

School Observation Period and Control Measures

- Observe school contacts for the development of symptoms for 25 days from last contact with a case.
- Review student immunization records for school contacts to ensure that students are up-to-date on MMR vaccinations. Any student who is not up-to-date is considered susceptible to mumps and should be vaccinated as soon as possible unless they have contraindications to live virus vaccine. Vaccination after exposure to mumps is not harmful and may protect against subsequent exposures.
- Exposed staff who do not have documented evidence of immunity are considered susceptible. Acceptable evidence of immunity for staff is documentation of at least one dose of MMR vaccine or, serologic evidence of immunity or, born before 1957.
- Susceptible contacts may be readmitted following mumps immunization.
- Susceptible contacts who refuse or are contraindicated to receive live virus vaccine should be excluded from day 12 to day 25 after exposure to a case.
- Where possible, encourage classroom contacts to minimize disease transmission by practicing respiratory etiquette and hand hygiene.

Reportable to PDPH

Yes— report all confirmed and suspect cases to the Division of Disease Control (DDC).

Remarks

Most mumps cases in the United States occur among people who have received 2 doses of vaccine because the vaccine is not 100% effective in places with high vaccination coverage. Pregnant women should notify their medical provider if exposed. Consult with DDC for assistance with identification and management of susceptible contacts.

Norovirus

Common Signs and Symptoms	Foodborne illnesses are a common public health issue, infecting 1 in 6 Americans yearly. Norovirus is the most common of the foodborne illnesses, accounting for 58% of occurrences. The symptoms of norovirus infection usually include the sudden onset of watery non-bloody diarrhea, nausea, vomiting, dehydration and stomach cramps. Fever (typically low grade), headaches, and body aches may also occur. Symptoms may be severe and the ill person may feel very sick. Generally, the illness is self-limiting and lasts only 1-3 days. Norovirus is often referred to as the “stomach flu” or “cruise ship virus.”
Incubation Period	The incubation period ranges from 12 to 48 hours.
Methods of Infection	Norovirus is highly contagious and is transmitted through the fecal-oral route or through contact with infected vomitus. It can also be transmitted through the ingestion of contaminated food or drink and through contact with contaminated environmental surfaces.
Recommended Therapy and Management	Treatment is supportive and should include electrolyte/fluid replacement. Occasionally, administration of intravenous fluids in the hospital is necessary for persons who become dehydrated from the virus. Over the counter medications can be taken to lessen the symptoms of nausea, diarrhea, fever, and vomiting.
Immunization Availability and Requirements	None.
Exclusion from School	Students with active diarrhea should remain home until at least 24 hours after symptoms resolve. Ill foodhandlers should refrain from foodhandling activity for 48-72 hours after symptom resolution.
School Observation Period	Norovirus often occurs in clusters and can be spread easily person-to-person. Contacts who develop similar symptoms should be sent home.
Reportable to PDPH	No. However, clusters of norovirus infection are reportable to the Division of Disease Control (DDC).
Remarks	Children and staff should be encouraged to practice good personal hygiene, with emphasis on handwashing after using the bathroom, and before eating or preparing food. Facilities management staff should be consulted to clean highly-touched surfaces. Contaminated, non-porous surfaces can be effectively cleaned with a 10% bleach solution. Consult with DDC for assistance with management of outbreaks and for additional infection control guidance.

Pink Eye (Conjunctivitis)

Common Signs and Symptoms

Conjunctivitis, or pink eye, is inflammation of the clear membrane (conjunctiva) that lines the inside of the eyelid and covers the white part of the eye. Bacterial, allergens or viral infections are the most common causes of conjunctivitis. However, it can also be caused by chemical splash, foreign object in the eye, or blocked tear duct.

Conjunctivitis is characterized by itchiness, burning and redness in one or both eyes, tearing, crusting of eyelids / eyelashes, and sensitivity to bright light. If the condition is caused by a bacterial infection, purulent discharge from the eye may also be present.

Incubation Period

The incubation period depends on the etiology but can range from hours (chemical, traumatic, or allergic etiologies) to days.

Methods of Infection

Conjunctivitis is transmitted by direct contact with an infected person or surfaces that have been contaminated by secretions from the infected eye(s). Allergic conjunctivitis is not passed from person to person.

Recommended Therapy and Management

Conjunctivitis caused by a virus is generally mild and will resolve in 7-14 days without treatment. If the infection does not get better, artificial tears and cold compresses can be used to help decrease inflammation and dryness.

If bacteria are the source of infection, conjunctivitis may resolve on its own without medication, typically within 5-6 days. However, antibiotics can be prescribed by a healthcare provider to decrease the length of illness, symptoms, and the risk of transmission to others.

Allergic Conjunctivitis usually improves when the allergen is removed. Allergy medications and eye drops can also provide relief.

Immunization Availability and Requirements

None.

Exclusion from School

Exclusion is only required for conjunctivitis that is caused by bacteria (purulent conjunctivitis). Individuals can be re-admitted into school once antibiotic treatment has been initiated for 24 hours.

Pink Eye (Conjunctivitis), continued

School Observation Period	No specific observation period is recommended. Conjunctivitis of viral or bacterial etiology may result in secondary cases several days to week after an index case.
Reportable to PDPH	No. If more than two children in a school or childcare setting begin exhibiting signs and symptoms of conjunctivitis you may want to consider notifying the Division of Disease Control for additional infection control and prevention considerations.
Remarks	In order to prevent or reduce the risk of getting conjunctivitis that is caused by a bacterial or viral infection, children and staff should be encouraged to: carefully and frequently wash their hands with soap and water, not rub or touch their eyes, and avoid sharing objects such as pillows, eye glasses, make-up, eye drops, and wash cloths.

Pinworms (Enterobiasis)

Common Signs and Symptoms

Pinworm infestations (Enterobiasis) are the most common type of intestinal worm infestation in the United States. A small (0.25" to 0.5" long) white round worm called *Enterobius vermicularis* is the parasite that infects the intestines. Most people infected with pinworms will not experience any symptoms. The most common symptom of a pinworm infection is itching around the anus, which can lead to difficulty sleeping and restlessness at night. Pinworms are most likely to infect children <18 years of age, primary caretakers of infected children, and people living in institutional settings.

Incubation Period

It takes 1 to 2 months or longer from the time of ingesting the pinworm egg until an adult worm matures in the intestine and migrates to the anal area.

Methods of Infection

Pinworms are spread person to person through the fecal-oral route. Transmission also occurs indirectly through clothing, food, bedding, or other items that have been contaminated with the pinworm's eggs. Pinworm eggs can remain infective for 2-3 weeks in indoor environments.

Recommended Therapy and Management

A pinworm infestation can be treated with oral anti-parasitic medications such as pyrantel pamoate (over-the-counter), albendazole, or mebendazole. Some mild infestations may not require any treatment. Medications may be prescribed for an entire family to prevent subsequent transmission.

Immunization Availability and Requirements

None.

Exclusion from School

None.

School Observation Period

Transmission in classrooms is extremely rare; no observation is recommended.

Reportable to PDPH

No.

Remarks

Pinworms are relatively common among pre-school and school aged children and are easily shared within these groups. Infestation commonly occurs in clusters within families. Washing hands and anal area in the morning, washing possibly infected laundry (e.g., underwear, linens, etc.) in warm water, and avoiding scratching the anal area helps to prevent the spread of pinworms. An emphasis on good personal hygiene, hand washing, and regular cleaning of toys and surfaces used for eating, toileting, food preparation, and diapering will also help prevent the spread of pinworms.

Pneumonia

Common Signs and Symptoms

Pneumonia infections inflame the air sacs in one or both lungs, which then may fill with fluid. A variety of bacteria, viruses and fungi can cause pneumonia. The most common cause of viral pneumonia is respiratory syncytial virus (RSV), with *Streptococcus pneumoniae* being the most common form of bacterial pneumonia. Symptoms include:

- Fever, sweating and shaking chills
- Cough, which may produce phlegm
- Chest pain when breathing or coughing
- Shortness and loss of breath
- Fatigue
- Nausea, vomiting or diarrhea

Incubation Period

The incubation period will vary based on the organism causing the infection.

Methods of Infection

Pneumonia does not spread person to person. Persons may acquire pneumonia through inhalation of contaminated droplets.

Recommended Therapy and Management

Antimicrobial treatments may be used for treatment and vary based on the severity and type of pneumonia infection.

Immunization Availability and Requirements

There is no specific vaccine for pneumonia, but vaccines against causes of pneumonia are recommended for at risk populations. Pneumococcal vaccines, influenza vaccines, and vaccines against other respiratory illnesses are effective at reducing the risk of pneumonia.

Exclusion from School

No exclusion necessary as long as the child is well enough to participate in routine activities.

School Observation Period

No school observation period is required.

Reportable to PDPH

No.

Remarks

Individuals who have chronic conditions such as asthma or chronic obstructive pulmonary disease, are immunosuppressed, are smokers, or are hospitalized are at greater risk to develop pneumonia.

Polio (Poliomyelitis)

Common Signs and Symptoms	Poliomyelitis, also known as the polio, is a highly contagious viral illness caused by an enterovirus. Up to 72% of all polio infections are asymptomatic. A nonspecific, minor illness presentation (low-grade fever and sore throat) occurs in approximately 24% of polio-infected individuals. Characteristic acute flaccid paralysis presentation occurs in less than 1% of all polio infections.
Incubation Period	The incubation period for nonparalytic polio is 3-6 days; however the incubation period for the onset of paralysis in paralytic polio is typically 7 to 21 days.
Methods of Infection	<p>Polio is spread person-to-person primarily by the fecal-oral route, but oral-oral transmission is also possible. Poliovirus is highly infectious.</p> <p>The contagious period begins shortly (usually 7-10 days) before onset of illness. Poliovirus may be shed in stool for 3-6 weeks after the onset of illness.</p>
Recommended Therapy and Management	There is no medical therapy for polio, except supportive care.
Immunization Availability and Requirements	<p><i>*Required Immunization*</i></p> <p>Inactivated polio vaccine (IPV) is usually given to children at 2, 4, and 6-18 months with a booster at 4-6 years of age. Three doses of polio vaccine, either oral poliovirus (OPV) vaccine or IPV are required to attend school.</p>
Exclusion from School	Consult with the Division of Disease Control (215-685-6742).
School Observation Period	No specific observation period is recommended.
Reportable to PDPH	Yes – report all confirmed and suspect cases to the Division of Disease Control (DDC).
Remarks	<p>Consult with DDC for assistance with identification and management of susceptible contacts. If a confirmed case of polio is identified, immunization records should be reviewed and vaccine may be recommended for under-immunized persons.</p> <p>The last case of wild-type (not vaccine-associated) polio in the United States occurred in 1979. The last case of vaccine associated paralytic polio (VAPP) was reported in 1999.</p>

Respiratory Syncytial Virus (RSV)

Common Signs and Symptoms

Respiratory Syncytial Virus (RSV) is a virus that can cause a variety of respiratory illnesses, ranging from mild cold-like symptoms to more serious infections like pneumonia and bronchiolitis. RSV infections can be severe in very young children, people with chronic illnesses, and in elderly people. RSV infections tend to occur in the Philadelphia region from late fall through early spring. By the age of 2 years most children have been infected with RSV.

Symptoms of RSV infection include fever (usually low-grade), cough, sneezing, runny nose, decreased appetite, sore throat, earache, and wheezing. RSV does not lead to severe disease in most healthy, school aged children. Infants with RSV infection may also present as lethargic, irritable, and not feeding well. Infants may also appear cyanotic due to a lack of oxygen.

Incubation Period

The incubation period is normally 4-6 days.

Methods of Infection

RSV is transmitted by large droplet aerosols or contact with contaminated surfaces. The virus can be shed for 3 to 8 days; however infants may shed the virus for several weeks. RSV can live in the environment for many hours, and fomites may play an important role in the spread of the infection.

Recommended Therapy and Management

Treatment for RSV is supportive and in most cases does not require medication since children typically recover on their own. It is important to provide adequate hydration and monitor the child's respiratory status. If the infection is severe and the child/infant begins to exhibit difficulty breathing, they should be seen by a healthcare provider immediately. Additional treatment may be necessary if the child develops more severe complications, including pneumonia and bronchiolitis.

Immunization Availability

None.

Exclusion from School

Exclusion from school is not necessary, unless the child is febrile, becomes cyanotic, has difficulty breathing, cannot participate in daily school activities, or exhibits changes in behavior.

RSV, continued

School Observation Period None, however school or childcare staff should be notified of a confirmed case of RSV and monitor children for symptoms.

Reportable to PDPH No.

Remarks Staff can prevent the spread of RSV by

- Practicing frequent handwashing with soap and water or using alcohol based gels
- Sanitizing frequently touched surfaces and objects with a bleach solution
- Throwing away tissues containing nasal secretions after one use

During months of peak RSV activity (typically in the winter and early spring), healthcare providers may prescribe palivizumab (Synagis), an antibody against RSV, to prevent severe respiratory tract infections in infants and children who are vulnerable to severe RSV illness.

Ringworm (Tinea)

Common Signs and Symptoms

Tinea or ringworm is a common fungal infection that affects the scalp (tinea capitis), body (tinea corporis), groin (tinea cruris), beard (tinea barbae), and feet (tinea pedis) and is typically characterized by a circular, erythematous rash that is mildly pruritic.

Tinea capitis symptoms include: reddening and scaling of the scalp, subtle or extensive hair loss, intense itching, and patch areas of dandruff-like scaling.

Tinea corporis symptoms consist of circular lesions on the face, trunk, or limbs that appears reddened and inflamed along the edges and round, flat patches of itchy skin.

Tinea pedis symptoms include scaly lesions that involve areas of the foot and in between toes, redness, swelling, intense itching, and dry, cracking skin in and around the affected area. In severe cases the skin can blister.

Tinea cruris symptoms are groin rash, redness and blistering in and around the groin, and scaly, itchy skin.

Tinea barbae symptoms include scaly, itchy, red spots on the cheeks, chin and upper neck. Spots may become crusted or fill with pus. Loss of hair is also possible.

Incubation Period

The incubation period is unknown for most cases. Ringworm of the scalp is usually seen 10-14 days after contact, and ringworm of the body is 4-10 days after contact.

Methods of Infection

Tinea is spread by direct or indirect contact with infected humans, animals, or contaminated objects such as combs, brushes, towels, clothing, or bedding. Fungal infections caused by tinea are communicable as long as the infection is present. Ringworm can also live on surfaces (especially damp areas) for 18 months or longer, depending on environmental conditions, and cause infection.

Recommended Therapy and Management

Most tinea infections can be treated with topical anti-fungal medications. However, tinea capitis cannot be treated with topical medications, instead prescription systemic anti-fungal medications are needed.

Immunization Availability and Requirements

None.

Ringworm, continued

Exclusion from School	If the child has tinea capitis or tinea corporis they should be excluded at the end of the school day. Re-admission into school should be initiated once treatment has begun for the infection.
School Observation Period	None.
Reportable to PDPH	No.
Remarks	Children should be encouraged not to share combs, brushes, hats, helmets, hair ornaments, clothing, or other personal items until the infestation has been treated. Additionally, skin lesions should be covered and household contacts should be alerted to watch for symptoms. Environmental contraction of ringworm can be avoided by wearing proper footwear (flip-flops, sandals) in damp / wet environments, like public showers.

Roseola (Human Herpesvirus 6)

Common Signs and Symptoms

Roseola is a viral infection caused by human herpes virus 6. Roseola is characterized by a febrile rash illness occurring in young children. Nearly all children get this infection by the time they are 4 years of age, some children will not have any signs or symptoms of illness. Human herpes virus 7 can present as typical roseola as well.

Symptoms of roseola include a high fever (above 103°F) lasting 3 to 7 days and a slightly raised, spotty pink rash lasting from hours to several days that becomes apparent the day the fever breaks (usually the fourth day). Other symptoms include: irritability, mild diarrhea, decreased appetite, swollen eyelids. Some children exposed to roseola may experience febrile seizures, though they are rare.

Incubation Period

The incubation period is normally 7-14 days.

Methods of Infection

The virus is spread person-to-person through contact with an infected person's respiratory secretions or saliva, mainly through coughing and sneezing. Children are most likely infected by an asymptomatic caregiver. The contagious period is unknown.

Recommended Therapy and Management

There is no medical therapy for roseola, except supportive care.

Immunization Availability and Requirements

None.

Exclusion from School

None.

School Observation Period

Students should be monitored for similar illness (e.g., fever and rash). Symptomatic children should be evaluated by a health care provider.

Reportable to PDPH

No.

Remarks

Roseola transmission can be prevented primarily through hand washing.

Rotavirus

Common Signs and Symptoms	Rotavirus is a viral infection that presents with severe watery diarrhea, vomiting, fever, and abdominal pain. The disease is more prevalent during winter and spring. Symptoms usually persist for 3 to 8 days. In severe cases dehydration, electrolyte abnormalities, and acidosis may occur. Immunocompromised children may develop persistent infections and diarrhea.
Incubation Period	The incubation period is normally 1-3 days, usually less than 48 hours.
Methods of Infection	The virus is primarily spread person-to-person by the fecal-oral route and can be spread by contaminated toys and other objects, hands, food, and water. Virus is present in stool when diarrhea begins and can persist for up to 3 weeks after the illness. Transmission may also occur via fomites and airborne droplets generated by coughing and sneezing.
Recommended Therapy and Management	There is no medical therapy for rotavirus, except supportive care. Drinking plenty of fluids is important to prevent dehydration.
Immunization Availability and Requirements	Yes. There are 2 recommended vaccines for rotavirus (RotaTeq and Rotarix). Two doses of Rotarix are recommended at 2 and 4 months of age; alternatively, 3 doses of RotaTeq are recommended at 2, 4, and 6 months of age. Vaccination is not required for school entry.
Exclusion from School	None, although symptomatic children should remain home until symptoms have resolved.
School Observation Period	Students should be monitored for similar illness (e.g., vomiting or diarrhea). Symptomatic children should be sent home and evaluated by a health care provider.
Reportable to PDPH	No -the Division of Disease Control may be consulted if an outbreak is suspected.
Remarks	<p>Rotavirus primarily affects infants and young children. Most children contract rotavirus by 5 years old, but symptoms are most severe in children 3 to 24 months of age.</p> <p>Hand washing, especially after using the bathroom or changing diapers and before preparing or eating food, will minimize disease transmission. Additionally, where possible, surfaces should be washed with soap and water. A 70% ethanol solution or other disinfectant may help prevent disease transmission.</p>

Rubella (German Measles)

Common Signs and Symptoms

Rubella, also known as the German measles, is a contagious viral illness caused by a togavirus. Illness is characterized by a prodromal phase and development of a rash. Rubella is usually a mild, self-limited illness lasting 3-8 days; however, rubella in a pregnant woman can cause catastrophic congenital abnormalities in the fetus.

Symptoms of rubella include a sudden onset of prodrome, lasting 1-5 days, characterized by low-grade fever, malaise, lymphadenopathy, and upper respiratory symptoms, followed by a rash lasting about 3 days. The rubella rash is an erythematous and maculopapular. The rash initially occurs on the face and then progresses from head to foot.

Symptoms are often mild and up to 50% of infections may be subclinical or inapparent. In children, rash is usually the first manifestation and a prodrome is rare.

Incubation Period

The incubation period is normally 14 days, with a range of 12-23 days.

Methods of Infection

Rubella is spread by direct or droplet contact with respiratory secretions and from mother to fetus during pregnancy. The contagious period is 1-2 days before the onset of symptoms until 7 days after the onset of rash. Infants with congenital rubella may shed virus until they are at least 1 year of age.

Recommended Therapy and Management

There is no specific medical therapy for rubella, except supportive care.

Immunization Availability and Requirements

Rubella-containing vaccine is usually given as measles, mumps, rubella (MMR) or measles, mumps, rubella, and varicella (MMRV) vaccine. MMR vaccine is given to children at 12-15 months old and 4-6 years old. Two doses of vaccine, given after the first birthday, are required for kindergarten and first grade entry. One dose of vaccine, given after the first birthday, is required for all other grades.

Exclusion from School

Persons with rubella should be excluded from school for 7 days from the onset of rash. After 7 days these persons are no longer considered infectious and they can return to the school community.

Rubella, continued

School Observation Period and Control Measures

- Observe all school students for the development of rash for 23 days from last contact with a case.
- All exposed pregnant students and staff should be referred to their health care provider for evaluation.
- Review all student immunization records to ensure that students are up-to-date on MMR vaccinations. Any student who is not up-to-date is considered susceptible to rubella and should be vaccinated, unless contraindicated. Vaccination after exposure to rubella is not harmful and may protect against development of disease if given within 72 hours of exposure. Vaccination will also provide protection against subsequent rubella exposures.
- Exposed staff who do not have documented evidence of immunity are considered susceptible and should be vaccinated, unless contraindicated. Acceptable evidence of immunity for staff is documentation of at least one dose of MMR vaccine or, serologic evidence of immunity or, born before 1957.
- Susceptible contacts may be readmitted following rubella immunization.
- Susceptible contacts who refuse or are contraindicated to receive live virus vaccine should be excluded for 23 days after rash onset in the last case.

Reportable to PDPH

Yes— report all confirmed and suspect cases to the Division of Disease Control (DDC) immediately.

Remarks

Consult with DDC (215-685-6742) for assistance with identification and management of cases and susceptible contacts.

Salmonellosis and Typhoid Fever

Common Signs and Symptoms

Salmonellosis is a bacterial illness characterized by the acute onset of abdominal pain and diarrhea, with or without nausea, vomiting, or fever. Salmonellosis can be caused by many different serotypes of *Salmonella*, a gram-negative bacillus.

Typhoid fever is caused by the serogroup *S. Typhi* and usually causes more severe and prolonged illness which includes a high fever, weakness, stomach pain, headache, loss of appetite, and possible rash.

Incubation Period

The incubation period for Salmonellosis is normally 12–36 hours, but can range from 6-72 hours.

The incubation period for typhoid fever is normally 1 to 2 weeks

Methods of Infection

Salmonellosis is spread by the ingestion of contaminated food, contact with infected animals, or less commonly person-to-person by the fecal-oral route. Transmission can occur as soon as a person has become infected with the bacteria and continue for several days to weeks.

Most cases of typhoid fever in the US are associated with international travel.

Recommended Therapy and Management

Most people with salmonellosis will recover without the use of antibiotics. If *Salmonella* spreads from the intestines, antibiotic therapy such as ampicillin, trimethoprim-sulfamethoxazole, or ciprofloxacin may be considered based on antibiotic sensitivity testing. Supportive treatment including electrolyte/fluid replacement may be necessary.

Typhoid fever is treated with antibiotics.

Immunization Availability and Requirements

No vaccine is available for salmonellosis.

There is a vaccine for typhoid fever, which is very uncommon in the United States. The vaccine is recommended for travelers to areas where typhoid is common, close contacts of a confirmed typhoid carrier, and laboratory personnel who work with *S. Typhi*.

Exclusion from School

Symptomatic persons (those with diarrhea) should be excluded until symptoms resolve.

Attendees and staff in daycare settings as well as foodhandlers with salmonellosis are excluded until they have two (or three for typhoid fever) negative stool cultures.

Salmonellosis and Typhoid Fever, continued

School Observation Period	None. Transmission of salmonellosis in the classroom is extremely rare.
Reportable to PDPH	Yes– report all confirmed and suspect cases to the Division of Disease Control (DDC).
Remarks	Children and staff should be encouraged to practice good personal hygiene, with emphasis on handwashing after using the bathroom, and before eating or preparing food. Food handlers are excluded until they are asymptomatic and are practicing good hand hygiene.

Scabies

Common Signs and Symptoms	<p>Scabies occurs when small mites called <i>Sarcoptes scabiei</i> infest the skin by burrowing into the upper layers of the epidermis.</p> <p>Symptoms of scabies include intense itching and a pimple-like rash that commonly occurs in the skin folds between the fingers, shoulder blades, toes, wrists, elbows, armpits, waistline, thighs, penis, and lower buttocks. Itching is increased at night.</p> <p>Children younger than 2 years of age are more likely to be infested on the head, neck, palms, and soles of the feet.</p>
Incubation Period	<p>The incubation period is usually 2 to 6 weeks. People who have been previously infested usually will have a milder illness that will develop in 1 to 4 days.</p>
Methods of Infection	<p>Scabies is spread through prolonged close personal contact and sharing of bedding, towels, and clothing.</p>
Recommended Therapy and Management	<p>Permethrin 5% cream, a topical scabicide should be applied to the entire body from the neck down and left on for at least 8 hours (consult with your doctor to determine which treatment is best for you). There are no over-the-counter / non-prescription products that have been tested and approved for treatment of scabies. Prophylactic therapy for scabies is recommended for the household members and other close contacts who have had skin to skin contact with the infected individual at the same time the case is being treated.</p>
Immunization Availability	<p>None.</p>
Exclusion from School	<p>Persons with scabies should be excluded from school until treatment with an effective scabicide is completed.</p>
School Observation Period	<p>Persons with similar symptoms of infection (e.g., rash, itching, blisters) should be referred to their health care provider.</p>
Reportable to PDPH	<p>No.</p>
Remarks	<p>Bedding or clothing worn next to the skin during the 3 days before initiation of therapy should be washed in hot water and dried using a hot cycle, or placed in a sealed plastic bag for 3 days. Mites cannot live off the skin for more than 3 days so environmental disinfection is not recommended.</p>

Shigellosis

Common Signs and Symptoms	Shigellosis is caused by the bacterium <i>Shigella sp.</i> and is characterized by the acute onset of abdominal pain, watery diarrhea (sometimes bloody), fever, and tenesmus (a painful sensation of needing to pass stool even when the bowels are empty).
Incubation Period	The incubation period is normally 1–3 days.
Methods of Infection	Shigellosis is spread person-to-person by fecal-oral transmission, or by ingestion of contaminated food or water. Ingesting as few as 10-200 organisms can cause infection, making shigellosis highly transmissible.
Recommended Therapy and Management	Most people will recover without treatment, although in severe cases antibiotics may shorten the duration of illness and length of carriage of the bacteria in the stool. However, antibiotic resistance in <i>Shigella</i> is common and care must be taken when prescribing antibiotics for <i>Shigella</i> infections. Supportive treatment including electrolyte/fluid replacement may be necessary.
Immunization Availability	None.
Exclusion from School	Symptomatic students (those with diarrhea) should be excluded until symptoms resolve. Food handlers and those attending or working in childcare settings should be excluded until diarrhea has stopped and two negative stool cultures have been obtained.
School Observation Period	None. Transmission of shigellosis in the classroom is rare.
Reportable to PDPH	Yes – report all confirmed and suspect cases to the Division of Disease Control (DDC).
Remarks	Children and staff should be encouraged to practice good personal hygiene, with emphasis on handwashing after using the bathroom, and before eating or preparing food. Foodhandlers and employees and attendees of childcare centers with shigellosis are excluded from work/child care until approved for return by the PDPH.

STEC / *Escherichia Coli* (*E. Coli* - Shiga toxin producing)

Common Signs and Symptoms

E. coli is a bacterial illness which can fall under six different categories: enterohemorrhagic, enterotoxigenic, enteroinvasive, enteropathogenic, enteroaggregative, and diffuse-adherence. The enterohemorrhagic group, also known as Shiga toxin-producing (STEC) is characterized by the acute onset of severe abdominal pain, diarrhea (often bloody), vomiting, and occasionally low grade fever. In some untreated cases (5-15%), illness can result in the hemolytic-uremic syndrome (HUS). The most common serogroup of STEC is *E. coli* O157:H7, also referred to as *E. coli* O157.

Incubation Period

The incubation period is normally 3-4 days, with a range of 1-10 days. If HUS develops it usually occurs 7 days after symptom onset.

Methods of Infection

E. coli is spread person-to-person by fecal-oral transmission, or by ingestion of contaminated food or water. Common sources of transmission include consumption of raw or undercooked meat, unpasteurized milk or juice, fresh produce, or contact with infected animals such as in petting zoos, farms, etc. *E. coli* is communicable for usually one week, but it can be spread for up to three weeks in children.

Recommended Therapy and Management

Persons with STEC should be under the care of a medical provider. Maintaining hydration and correcting electrolyte abnormalities as needed is extremely important. Antibiotics and anti-diarrheals should not be used as they may be associated with an increased risk of developing HUS.

Immunization Availability and Requirements

None.

Exclusion from School

Students with diarrhea due to STEC infection should remain home until symptoms resolve. Food handlers and those attending or working in childcare settings should be excluded until diarrhea has stopped and two negative stool cultures have been obtained.

STEC / *Escherichia Coli*, continued

School Observation Period	Transmission in schools is rare, but children with similar symptoms should be referred to a medical provider for evaluation. Classrooms should be monitored for additional cases for 7 days from the first known case.
Reportable to PDPH	Yes – report all confirmed and suspect cases to the Division of Disease Control (DDC).
Remarks	<p>Children and staff should be encouraged to practice good personal hygiene with emphasis on hand-washing after using the bathroom and before eating or preparing food. Careful attention should be made to ensure adequate hand hygiene after animal contact on field trips such as visits to farms and/or petting zoos. STEC may also be prevented by thoroughly cooking ground beef, consuming only pasteurized milk, egg, and juice products, and thoroughly washing produce.</p> <p>Food handlers and daycare employees/attendees with STEC are excluded from work/daycare until approved to return by DDC.</p>

Syphilis

Common Signs and Symptoms

Syphilis is caused by *Treponema pallidum* and typically occurs in stages:

Primary Stage: A painless sore usually occurs at the site of inoculation three weeks after exposure that will heal on its own after six weeks. However, the sore is often not noticed by an infected person.

Secondary Stage: A rash that begins on the trunk and moves towards the rest of the body. The rash is usually not itchy, but may be accompanied by wart-like sores on the mouth or genital area. Muscle aches, fever, sore throat and swollen lymph nodes can also be symptoms of secondary syphilis. These symptoms disappear after a few weeks, but can come and go for as long as a year.

Early Latent Stage: “Hidden stage” Asymptomatic, diagnosed by blood test.

Late Latent Stage: Around 15-30% of cases develop into this stage. Possible symptoms include damage to the brain, nerves, eyes, heart, blood vessels, liver, bones and joints. It could take many years after the original infection for the late latent stage to develop

Incubation Period

The incubation period for syphilis ranges from 3 weeks to 3 months.

Methods of Infection

Intimate and sexual contact with an infected person is the most common form of transmission; this includes vaginal, anal and oral sex. Syphilis can also be passed to the fetus during pregnancy or through direct contact with an active lesion, though these two methods of transmission are less common.

Recommended Therapy and Management

Penicillin (dose and form are stage-dependent) or doxycycline. Occasionally, treatment may cause the infected individual to experience a Jarisch-Herxheimer reaction, which would occur within the first day after treatment and causes fever, chills, nausea, achy pain and headache. This reaction does not typically last more than one day.

Immunization Availability

None.

Exclusion from School / Observation Period

No exclusion from school or observation period are recommended.

Reportable to PDPH

Yes– by laboratory and diagnosing clinician.

Remarks

Sexual abuse should be considered in pre-pubertal children; infection in those younger than 13 years old must be reported to Childline (800-932-0313) and to the Special Victims Unit (215-685-3251).

Students older than 12 years can be referred to the STD Clinic at 1400 Lombard Street (215-685-6570) or to District Health Care Center #5 at 20th and Berks Streets (215-685-2930). Students with symptoms should be encouraged to bring their sex partners with them to the clinic so both can be treated at the same time. Free condoms are available at all District Health Care Centers.

Tuberculosis (TB)

Common Signs and Symptoms

Tuberculosis (TB) is a bacterial infection caused by *Mycobacterium tuberculosis*. Commonly, TB manifests in the lungs (pulmonary TB). Pulmonary TB is a disease characterized by a productive cough, fever, night sweats, and weight loss. Extrapulmonary (outside the lungs) TB may affect lymph nodes, the meninges, kidneys, bone, or joints; this type of disease is more common in children. Infection with TB may be asymptomatic, and is identified by a reactive tuberculin skin test or by a positive interferon gamma release assay (IGRA) result for the detection of *M. tuberculosis* infection. Complications that can arise for TB infection are spinal pain, joint damage, meningitis, liver or kidney problems, and heart disorders.

An individual infected with the TB bacterium may be in one of two different types of TB, Latent or Active. Persons with Latent (or inactive) TB have a TB infection, but the bacteria are in an inactive state and cause no symptoms. Latent TB can turn active, so treatment is still important to control the spread of TB and prevent development of Active TB.

With Active TB, the infected individual is showing symptoms and can spread the infection to others. Symptoms include: coughing that lasts three or more weeks, coughing up blood, chest pain / pain when breathing or coughing, unintentional weight loss, fatigue, fever, night sweats, chills, and loss of appetite.

Incubation Period

The time from exposure to the bacteria until development of a reactive tuberculin skin test or a positive IGRA result is usually 2-12 weeks. The risk of developing active TB is highest during the 6 months following infection, and remains high for 2 years.

Methods of Infection

Spread is person-to-person by airborne droplets from a patient with active TB who is untreated. This can happen when an infected individual sneezes, coughs, speaks, spits, laughs, or sings. TB is not highly contagious, meaning transmission usually requires prolonged, close contact. Infected individuals with active TB are usually no longer contagious after 2 weeks of treatment.

Recommended Therapy and Management

Treatment for TB requires a combination of antituberculosis / antibacterial medications that may differ, depending on the resistance patterns of the bacteria. Antibiotics must be taken for at least 6-9 months, depending on the infected individuals age, health, drug resistance, and form of TB.

Tuberculosis (TB), continued

Immunization Availability and Requirements

Bacillus-Calmette-Guerin (BCG) is a live vaccine, prepared from *M. bovis*, which is closely related to *M. tuberculosis*. This vaccine is not used in the United States, but is given routinely to children in over 100 countries. It may be difficult to interpret tuberculin skin test reactions (PPD) in children who have received BCG; however, as a general rule, PPD interpretation is the same as for people who have not received BCG vaccine if 18 months or more have lapsed since BCG vaccination. An IGRA is preferred for testing persons who have received BCG as it is expected to increase diagnostic specificity and improve acceptance of treatment for LTBI.

Exclusion from School

Students or staff with active pulmonary or laryngeal TB must be excluded from school until all the following have been demonstrated: 1) Initiation of effective antituberculosis therapy. 2) Improvement of clinical symptoms. 3) Decrease in the number of bacteria (acid-fast bacteria [AFB]) seen on stained smear of sputum.

School Observation Period

Contacts of persons with active pulmonary or laryngeal TB should be evaluated by a tuberculin skin test (PPD) or by an IGRA for the detection of *M. tuberculosis* infection.

Reportable to PDPH

Yes – report all confirmed and suspect cases to the Tuberculosis Control Program, 215-685-6873.

Remarks

Consult with the Tuberculosis Control Program for assistance with identification and management of contacts or if multi-drug resistant (MDR) TB is suspected.

Individuals at a higher risk for contracting TB are those traveling to or living in areas that have high rates of TB, lacking medical care, substance abuse, tobacco use, health care employees, living or working in a residential care facility, living in a refugee camp or shelter.

Whooping cough (Pertussis)

Common Signs and Symptoms

Pertussis, commonly known as whooping cough is a contagious respiratory disease caused by bacteria (*Bordetella pertussis*). Pertussis is characterized by severe cough, whooping, and vomiting after cough. Symptoms usually last for several weeks, but the disease may be milder in vaccinated children and adults. Symptoms are more severe in infants younger than 6 months of age.

Pertussis begins with cold-like symptoms and progress to more serious coughing that may cause vomiting, apnea (absence of breathing), and a high-pitched whooping noise after coughing fits. The cough gradually disappears, with coughing fits that may continue for months.

Incubation Period

The incubation period is normally 7-10 days, with a range of 4-21 days.

Methods of Infection

Pertussis is spread by respiratory droplets generated by sneezing or coughing. The contagious period begins when symptoms first start until 2 weeks after the cough develops (i.e., approximately 21 days).

Recommended Therapy and Management

Antibiotic macrolides (e.g., erythromycin, azithromycin or clarithromycin) are appropriate first-line antibiotics for infected people and their contacts. Trimethoprim-sulfamethoxazole is an alternative for people allergic to macrolides.

Immunization Availability and Requirements

****Required Immunization****

Four doses of vaccine (usually DTaP) are given to children during the primary vaccination series at 2 months, 4 months, 6 months, and 15-18 months. Booster doses are given at 4-6 years of age (DTaP) and after the 10th birthday (Tdap). School regulations in Philadelphia require 4 doses of vaccine for all children entering kindergarten and 1st grade, with one dose after the fourth birthday. Children entering 6th grade are required to have 1 dose of Tdap on or after the 7th birthday.

Exclusion from School

Persons with pertussis and their sick (with cough illness) household contacts should be excluded for 5 days from the initiation of appropriate antibiotics, or for 3 weeks from the onset of cough if the infection is untreated.

Whooping cough, continued

School Observation Period

- Observe contacts in the same classroom for respiratory symptoms for 21 days after the onset of the last case's symptoms. Children that develop a cough illness should be evaluated by their health care provider.
- Chemoprophylaxis for close contacts (household members, intimate contacts) of cases is recommended to prevent disease transmission.
- Review immunization records for classroom contacts to ensure that students are up-to-date on their pertussis vaccinations. Students and staff who are not up-to-date should be encouraged to get vaccinated.
- Where possible, encourage classroom contacts to minimize disease transmission by practicing respiratory etiquette and hand hygiene.
- During outbreaks, chemoprophylaxis of classmates and exclusion of unvaccinated children may be recommended to prevent disease transmission.

Reportable to PDPH

Yes— report all confirmed and suspect cases to the Division of Disease Control (DDC).

Remarks

Consult with DDC (215-685-6742) for assistance with identification and management of cases and susceptible contacts or when a pertussis outbreak (generally 2 or more unrelated cases) is suspected. Persons who have been vaccinated with pertussis-containing vaccine may still become ill with pertussis as no vaccine is 100% effective. Vaccination history should not exclude pertussis as a possible cause of cough illness.



Division of Disease Control
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