# GUIDELINES FOR THE CONTROL OF COMMUNICABLE DISEASES AMONG SCHOOL CHILDREN

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
DIVISION OF DISEASE CONTROL

OCTOBER 2011

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PHILADELPHIA
Department of Public Health

# 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 working in the school setting. It provides an overview on over 52 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 PDPH

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 new 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 bedbugs, cryptosporidiosis, herpes, human papillomavirus, infectious diarrhea (unspecified), molluscum contagiosum, mosquito-borne diseases, rhinovirus, roseola, respiratory syncytial virus, and vomit.

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)

**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 | 215-685-6838 or 215-685-6869 | 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 Academic Support/- School Health Services
400 N. Broad St; 2nd Floor
Philadelphia, PA 19130

Phone: (215) 400-6094 or (215) 400-4800

# 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 is a key partner in this effort.

When the School District of Philadelphia (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 bacterial meningitis.
- 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 215-400-4800. 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 – 215-685-6748. 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 215-400-4800;
- 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)

**Report: 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) ‡
Amebiasis
Animal bites (wild/stray/domestic)
Anthrax *
Botulism *
Brucellosis *
Campylobacteriosis
*Chlamydia trachomatis* including lymphogranuloma venereum (LGV)
Chancroid
Cholera *
Creutzfeldt-Jakob disease
Cryptosporidiosis
Cyclosporiasis
Diphtheria *
Ehrlichiosis
Encephalitis including all arboviruses *
*Escherichia coli* O157:H7 *
Food poisoning *
Giardiasis
Gonococcal infections
Guillain-Barré syndrome
*Haemophilus influenzae*, invasive disease *
Hantavirus Pulmonary Syndrome *
Hepatitis A
Hepatitis B
Hepatitis C
Hepatitis, other viral
Histoplasmosis
Influenza – pediatric mortality and institutional outbreaks
Lead poisoning
Legionnaires' disease *
Leprosy (Hansen's disease)
Leptospirosis (Weil's disease)
Listeriosis *
Lyme disease
Malaria
Measles (rubeola) *
Meningitis - all types
Meningococcal infections *
Mumps
Pelvic inflammatory disease
Pertussis (whooping cough)
Plague *
Poliomyelitis *
Psittacosis (ornithosis)
Rabies *
Rickettsial diseases
Rubella (German Measles) & Congenital Rubella *
Severe Acute Respiratory Syndrome (SARS) *
Salmonellosis
Shigellosis
Smallpox *
*Staphylococcus aureus*, vancomycin insensitive
Streptococcal disease, invasive group A
*Streptococcus pneumoniae*, invasive disease
Syphilis
Tetanus
Toxic Shock Syndrome
Trichinosis
Tuberculosis §
Tularemia *
Typhoid (*Salmonella typhi* and *paratyphi*) *
West Nile Virus *
Varicella, including zoster
Yellow Fever and other viral hemorrhagic fevers *

* Report suspected and confirmed cases within 24 hours
All other cases should be reported within 5 days
‡Report to AIDS Activities Coordinating Office at **215-685-4781**
§Report to TB Control Program at **215-685-6744 or -6873**
All unusual disease clusters, disease outbreaks, and unusual disease occurrences should be reported immediately

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

| Notifiable Disease Case Report *(Confidential)* | **Philadelphia Department of Public Health**<br>**Division of Disease Control**<br>Communicable Disease Control Program<br>500 S. Broad Street, Philadelphia, PA. 19146 |
|---|---|

## Identification of Patient

| Report Date *(Mo., Day, Yr.)* | Name *(Last, First, M.I.)* | Parent or caretaker (if applicable) |
|---|---|---|
| | | |

| Address *(Number, Street, Apt #, City, Zip Code)* | Telephone (H) _____ (W) _____ (C) _____ |
|---|---|

| DOB *(Mo., Day, Yr.)* | Age | Sex ☐ M ☐ F | Occupation |
|---|---|---|---|
| | | | |

| Name of Employer or School | Address *( Number, Street, City, Zip Code)* |
|---|---|
| | |

## Medical Information

| Disease or Condition | Date of Onset *(Mo., Day, Yr.)* *(If animal bite, Date it occurred)* | Diagnosis (check one) ☐ Clinical ☐ Lab confirmed | Fatal (check one) ☐ Yes ☐ No |
|---|---|---|---|
| | | | |

| Chief Symptoms / Complaints | Suspected source of infection (if known) |
|---|---|
| | |

| If Case Hospitalized *(Name of Hospital)* | Admission Date | Discharge Date |
|---|---|---|
| | | |

## Laboratory Information If Pertinent *(Attach Copies If Applicable)*

| Name of Tests Done | Site/Source | Results | Dates Done |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

## Animal Exposures

| Parts of Body Bitten | Type of Animal | Breed of Animal | Current Location Of Animal *(Indicate if available for testing)* |
|---|---|---|---|
| | | | |

| Name of Owner | Address of Owner *(Number, Street, Apt #, City, Zip Code)* |
|---|---|
| | |

## Reporter Information

| Name of Person Reporting Case | Reporter ☐ ICP ☐ ED ☐ Other_____ | Phone |
|---|---|---|
| | | |

| Reporting Institution | Address (Number, Street, City, Zip Code) |
|---|---|
| | |

***DO NOT WRITE IN AREA BELOW - FOR DEPARTMENT USE***

| Name *(Person Receiving Report)* | Method of reporting ☐ Phone ☐ Fax ☐ Mail ☐ Active Surveillance ☐ Other_____ |
|---|---|
| | |

**Any unusual illness, disease clusters or possible outbreaks should be reported *immediately* by telephone.**
**Please fax all completed reports to 215-545-8362, or call 215-685-6748 to report case by phone.**

**CITY OF PHILADELPHIA**
**DEPARTMENT OF PUBLIC HEALTH**
**DIVISION OF DISEASE CONTROL**
**IMMUNIZATION PROGRAM**

# Summary: Philadelphia Immunization Requirements For School Entry, 2010 -2011

| Grades | Vaccines | Requirements |
|---|---|---|
| K – 1 | Diphtheria & Tetanus……<br>Pertussis……<br>Polio……<br>Measles……<br>Mumps……<br>Rubella……<br>Hepatitis B……<br>Varicella…… | 4 Doses: at least one after 4th birthday (DTaP/DTP/DT/Td)<br>4 Doses: at least one after 4th birthday (DTaP or DTP)<br>3 Doses (OPV/IPV)<br>2 Doses: both after 1st birthday (MMR or MMRV)<br>2 Doses: both after 1st birthday (MMR or MMRV)<br>2 Doses: both after 1st birthday (MMR or MMRV)<br>3 Doses: properly spaced (HBV)<br>2 Doses: both after 1st 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 7-12 | Diphtheria & Tetanus……<br>Polio……<br>Measles……<br>Mumps……<br>Rubella……<br>Hepatitis B……<br>Varicella…… | 3 Doses: at least one after 4th birthday (DTaP/DTP/DT/Td/Tdap)<br>3 Doses (OPV/IPV)<br>2 Doses: both after 1st birthday (MMR or MMRV)<br>1 Dose: after 1st birthday (MMR or MMRV)<br>1 Dose: after 1st birthday (MMR or MMRV)<br>3 Doses: properly spaced (HBV)<br>1 Dose: after 1st birthday (Varicella or MMRV) (2 doses if the 1st dose was given after the 13th birthday.) * |
| 6 | Diphtheria & Tetanus……<br>Pertussis……<br>Polio……<br>Measles……<br>Mumps……<br>Rubella……<br>Hepatitis B……<br>Varicella……<br>Meningococcal…… | 4 Doses: at least one after 10th birthday (DTaP/DTP/DT/Td/Tdap)**<br>1 Dose: at least one after 10th birthday (Tdap) **<br>3 Doses (OPV/IPV)<br>2 Doses: both after 1st birthday (MMR or MMRV)<br>1 Dose: after 1st birthday (MMR or MMRV)<br>1 Dose: after 1st birthday (MMR or MMRV)<br>3 Doses: properly spaced (HBV)<br>2 Doses: both after 1st birthday (Varicella or MMRV) *<br>1 Dose (MCV4) |

**References:** Requirements 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.

** Students who received a Td vaccine within 2 years prior to entering sixth grade should not receive the booster dose of Tdap until 2 years have elapsed.

# 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<br>Norovirus: 12-48 hours<br>E.Coli: 3-4 days<br>Salmonellla: 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 STREPTOCCAL 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, reddened tonsils, fatigue, fever, and headache<br><br>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.INFLUENZAE) | Meningococcal: 1-10 days<br>Pneumococcal: Variable<br>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 STAPHYLOCCUS 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. |

# 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 may get infected with 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 an infection 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

## 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.

## 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. An additional dose of vaccine is still required in persons with pre-exposure vaccine after an exposure. Post-exposure prophylaxis is given at day 0, 3, 7 and 14 and is nearly 100% effective in stopping the rabies virus from infecting the victim.

### Exclusion from School

No exclusion is required.

### School Observation Period

No observation is required.

### Reportable to Philadelphia Department of Public Health

**Yes–** report all animal bites regardless of the type of animal to the Division of Disease Control (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. The Division of Disease Control 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 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), 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.

## 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

## Reportable to Philadelphia Department of Public Health

**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.

# 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 may 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.

## Incubation Period

The incubation period varies depending on the etiologic agent.

## 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.

## 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

Yes. 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.

## 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 Philadelphia Department of Public Health

**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. School administrators may want to distribute information to their community informing them of the fact that someone in their program has bacterial meningitis, 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 1 year and they can survive 3-12 months without a blood meal.

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

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. A student with suspected bed bug bites or who has bed bugs in their clothing or belongings should not be excluded from school. Bed bugs are a nuisance but they are not known to transmit diseases.

## 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 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 Philadelphia Department of Public Health

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

# Blood and Bodily Fluid Exposures

### 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.

- 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.

### Exclusion from School
An exclusion from school is not required.

### School Observation Period
None.

### Reportable to Philadelphia Department of Public Health
**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.

# 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 *Campylobacter jejuni*.

### Incubation Period
The incubation period is normally 1–10 days.

### Method of Infection
Campylobacteriosis is spread by ingesting contaminated food or drinks, usually from improperly prepared poultry, unpasteurized milk, or untreated water. Rarely transmission can also occur from direct contact with contaminated feces or person-to-person.

### Recommended Therapy and Management
Erythromycin and azithromycin can shorten the duration of illness and bacterial shedding and help prevent relapse if treated early. Rehydration is also important.

### Immunization Availability and Requirements
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 adequate hand hygiene is practiced.

### School Observation Period
None. Transmission of *Campylobacter* in the classroom is extremely rare.

### Reportable to Philadelphia Department of Public Health
**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.

## 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:* Immununocompromised 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. Postexposure 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:* Acyclovir may be indicated for persons at risk of developing severe chickenpox with complications. **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 now 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 12$^{th}$ 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**.**

## 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.

Given the potential for transmission, individuals with shingles also should be excluded until their rashes have scabbed over. Persons with non-disseminated shingles may return after completion of 24 hours of antiviral therapy (acyclovir, valacyclovir, or famciclovir).

## 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.

## Reportable to Philadelphia Department of Public Health

**Yes –** report all confirmed and suspect cases of chickenpox *and* shingles to DDC 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 215-685-6740 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 on urination may occur. In males, urethral discharge and/or burning on urination may occur.

### 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. 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 azithromycin 1gm orally. Doxycycline 100 mg orally twice daily for 7 days can also be given.

### Immunization Availability and Requirements
None

### Exclusion from School
No exclusion is recommended.

### School Observation Period
No observation period is required.

### Reportable to Philadelphia Department of Public Health
**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.

# Cryptosporidiosis

### Common Signs and Symptoms
Cryptosporidiosis is a protozoan illness caused by *Cryptosporidium parvum* and characterized by diarrhea (which may wax and wane during the course of the illness), cramps, fever, abdominal pain, nausea, vomiting, anorexia, and weight loss.

### Incubation Period
The incubation period is normally 7 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 can resolve on their own however, rehydration is important. Nitazoxanide may be prescribed by a physician for the treatment of cryptosporidiosis in some patients although it's 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 Philadelphia Department of Public Health
**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 with cryptosporidiosis are excluded from work until they are asymptomatic and approved for return.

# 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, fever, cough, sneezing, 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.

### Method of Infection
Rhinovirus is transmitted through direct contact with an infected person's nasal secretions, oral secretions, or contaminated 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. Antibiotics are not recommended for the treatment of rhinovirus.

### Immunization Availability and Requirements
None.

### Exclusion from School
Exclusion from school is not necessary, unless the child cannot participate in daily school activities or the child has a fever and exhibits changes in behavior.

### School Observation Period
None.

### Reportable to Philadelphia Department of Public Health
No.

### Remarks
Staff can prevent the spread of rhinovirus by:

- Frequent hand washing with soap and water or alcohol based gels
- Sanitizing frequently touched surfaces and objects with a bleach solution
- Throwing away tissues containing nasal secretions after one use

# 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. Respiratory diphtheria is characterized by low-grade fever and the gradual onset of symptoms, most distinctively a grayish, membranous patch that develops over a mucous membrane of the nose or throat. Less commonly, diphtheria can also present as a cutaneous, vaginal, conjunctival, or otic infection.

## Incubation Period

The incubation period is normally 2-7 days.

## Method of Infection

Diphtheria is spread person-to-person by airborne droplets generated through sneezing or coughing. Transmission rarely occurs 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 2-6 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

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 10$^{th}$ birthday (Tdap). School regulations in Philadelphia require 4 doses of vaccine for all children entering kindergarten, 1$^{st}$ grade, and 6$^{th}$ grade, with 1 dose given after their fourth birthday. Three doses of vaccine are required for all other grades.

## 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.

### School Observation Period 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.
- Close contacts (regardless of their immunization status) should be: (1) observed for 7 days, (2) cultured for *C. diphtheriae*, and (3) started on prophylactic antibiotics.
- Positive contacts should be treated like cases and excluded until they have 2 negative cultures (see above, School Exclusion)
- Observe classroom contacts, who are not considered to be close contacts, for 7 days for the development of symptoms.
- Review immunization records for classroom contacts to ensure that students are up-to-date on their diphtheria vaccinations.
- 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 Philadelphia Department of Public Health

**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 Stats 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, malaise, myalgia, and headache. These symptoms are followed by the appearance of a rash that is fine and lacy on the extremities and trunk and is accompanied by facial flushing and paleness around the mouth, frequently described as a “slapped cheek” apperance. In immunocompromised persons the virus may cause severe anemia. 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. The rash and joint symptoms occur 2 to 3 weeks after infection. The contagious period precedes the onset of rash.

### Method of Infection
The disease is 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 and Requirements
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 larger amounts of parvovirus and may have 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 low-risk possibility of fetal damage.

### Reportable to Philadelphia Department of Public Health
**No**.

### Remark
Cases may occur sporadically, or in community-wide outbreaks during late winter and early spring, particularly in elementary and middle schools

# Giardiasis

### Common Signs and Symptoms
Giardiasis is caused by a parasite, *Giardia lamblia*, and is characterized by abdominal pain, flatulence and diarrhea (often greasy). 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 7-10 days.

### Method 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). The parasite is shed in the feces for as long as the carrier remains infected, which can be 1 to 3 weeks, or up to months.

### Recommended Therapy and Management
Tinidazole, nitazoxanide, and metronidazole are effective treatments in children. Paromomycin, quinacrine, and furazolidone can be used as alternative treatments. Adults may be treated with any of these agents. Supportive treatment involving rehydration may also be needed.

### Immunization Availability and Requirements
None.

### Exclusion from School
No exclusion recommended if diarrhea is no longer present.

### School Observation Period
None. Transmission of giardiasis in the classroom is extremely rare.

### Reportable to Philadelphia Department of Public Health
**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.

# Gonorrhea (Gonococcal infection)

### Common Signs and Symptoms
Gonorrhea is caused by the bacteria *Neisseria gonorrhoeae*. In females, vaginal discharge and burning on urination may be present; infection is often asymptomatic. In males, infection is usually symptomatic and typically presents with urethral discharge and burning on urination. Gonorrhea may cause severe disease such as pelvic inflammatory disease in females if left untreated.

### Incubation Period
The incubation period is normally 2–7 days.

### Method of Infection
Sexual contact with an infected person; includes vaginal, anal and oral sex. 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.
Children <45kg:
    Ceftriaxone, 125mg IM once, OR
Adolescents:
    Ceftriaxone, 250mg IM once, OR
    Cefixime, 400mg p.o. once

### Immunization Availability and Requirements
None.

### Exclusion from School
There is no exclusion recommended.

### School Observation Period
School observation is not necessary.

### Reportable to Philadelphia Department of Public Health
**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.

# *Haemophilus influenzae* type b (Hib) disease

### Common Signs and Symptoms
Invasive *Haemophilus influenzae* 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.

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).

### Incubation Period
The incubation period is unknown.

### Method of Infection
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.

### Recommended Therapy and Management
Invasive Hib infection is a medical emergency requiring immediate evaluation by a health care provider. The drugs of choice for treatment of Hib are third-generation cephalosporins, meropenem, or ampicillin and chloramphenicol.

### Immunization Availability and Requirements
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 15-18 months. Hib vaccine is not required for school entry.

### Exclusion from School
Persons with Hib disease should be excluded from school until they have received 24 hours of effective therapy.

### School Observation Period
Transmission and subsequent disease development in schools is rare but exposed children who develop similar symptoms should receive prompt medical evaluation.

### Reportable to Philadelphia Department of Public Health
**Yes–** report all confirmed and suspect cases to the Division of Disease Control (DDC) immediately**.**

### Remarks

- Exposed pregnant women should be referred to their health care provider.
- Consult with DDC for assistance with identification and management of cases and susceptible contacts. Antibiotic chemoprophylaxis is recommended for:
    - All persons in a household with an unimmunized/underimmunized child (<48 months of age) or immunocompromised child.
    - Nursery and childcare center contacts when 2 or more cases of invasive Hib have occurred within 60 days.
- Where possible, encourage classroom contacts to minimize disease transmission by practicing respiratory etiquette and hand hygiene.

# Hand Foot and Mouth Disease

### Common Signs and Symptoms
Hand foot and mouth disease (HFMD) is usually a mild illness caused most commonly by enteroviruses. Symptoms of HFMD include: sores/blisters in the mouth or fingers, the palms of hands, buttocks, and soles of the feet, fever, fatigue, sore throat, runny nose, cough, vomiting, and diarrhea.

### Incubation Period
The incubation period is normally 3-6 days.

### Method of Infection
Transmission can occur through respiratory secretions, 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 and Requirements
None.

### Exclusion from School
Exclusion of children may help reduce the spread of infection, but will not completely interrupt it. Exclusion may be considered for drooling children with active mouth blisters or children with weeping blisters on their hands that cannot be covered.

### School Observation Period
Monitor students for similar illness (e.g., cold like symptoms, blisters on hands/mouth). These persons should be evaluated by their health care providers.

### Reportable to Philadelphia Department of Public Health
**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 hand washing, 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.

# Hepatitis A

## Common Signs and Symptoms

Hepatitis A is an illness caused by the hepatitis A virus, and is characterized by fatigue, anorexia, nausea, vomiting, and abdominal pain, followed by jaundice (dark urine, light stools, and yellow skin and eyes). 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.

## Method 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 Philadelphia Department of Public Health

**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

## Common Signs and Symptoms

Hepatitis is a viral illness that results in liver inflammation. The likelihood of developing symptoms of acute hepatitis B virus (HBV) infection is dependent on a person's age at the time of infection. Infants less than 1 year of age have a 1% chance of developing symptoms, children 1 to 5 years of age have a 5% to 15% chance, and people older than 5 years of age have a 30% to 50% chance of developing symptoms.

Symptoms of HBV include flu-like symptoms (e.g., muscle aches, nausea, vomiting), jaundice (yellow skin, yellow in whites of the eyes), dark urine, fatigue, loss of appetite, joint pain, and tiredness.

## Incubation Period

The incubation period is normally 90 days.

## Method of Infection

HBV is spread most commonly through exposure to blood or blood products including sharing needles, needlestick injuries, transfusion, and perinatal transmission. The virus can also be spread less commonly through saliva, open sores, or the fluid that comes from open sores. The virus can remain contagious on surfaces for 7 days.

## Recommended Therapy and Management

There is no specific treatment for HBV infection, except for supportive symptom management. 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

Three doses of HBV vaccine should be given at 0-2, 1-4, and 6-18 months. 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 Philadelphia Department of Public Health

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

### Remarks

Athletes infected with hepatitis B should be allowed to participate in all competitive sports. 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

### Common Signs and Symptoms
Hepatitis C is an illness 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. Of persons infected with HCV, 20-30% will experience symptoms.

### Incubation Period
The incubation period is normally 2-24 weeks.

### Method 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.).

### 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.

### Exclusion from School
No exclusion is recommended.

### School Observation Period
No observation period is necessary.

### Reportable to Philadelphia Department of Public Health
**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.

## Method 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.

## 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 Philadelphia Department of Public Health

No.

### Remarks

HSV transmission can be controlled by frequent and careful hand washing, 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) Infection & Acquired Immunodeficiency Syndrome (AIDS)

### Common Signs and Symptoms
HIV infection causes a broad spectrum of diseases 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, 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.

### Method 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.

### 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 Philadelphia Department of Public Health
**Yes–** report all cases of HIV to AACO Surveillance Unit at 215-685-6671.

### Remarks
Maintain confidentiality of the infected individual. 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

### 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
The incubation for HPV is unknown, but is estimated to be 3 months to several years.

### Method 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
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. However, Gardasil and Cervarix are two vaccines that can be used in females 9-26 years of age that can protect against cervical cancer and genital warts. Gardasil can also be used in males 9-26 years of age. Both HPV vaccines consist of three doses with the second and third doses administered two and six months after the first.

### Exclusion from School
None.

### School Observation Period
School observation is not required.

### Reportable to Philadelphia Department of Public Health
No.

### Remarks
Children should be advised to avoid touching warts and frequent hand washing should be encouraged to prevent further spread and infection.

# Impetigo (Impetigo contagiosum)

### Common Signs and Symptoms
Impetigo is a common bacterial infection seen most often in infants and children. It is caused by either streptococcal or staphylococcal bacteria. It is a bacterial infection that is highly contagious but seldom serious.

Symptoms of impetigo include itching and small red pimples or fluid filled blisters that will ooze for several days and then form a crusted yellow scab.

### Incubation Period
The incubation period is normally 7 to 10 days.

### Method of Infection
Transmission can occur through direct contact with lesions or through a cut or scraped skin where bacteria that is normally colonized in that area enters the wound.

### Recommended Therapy and Management
Antibiotics and local skin care.

### Immunization Availability and Requirements
None.

### Exclusion from School
Students should be excluded from school as soon as the infection is suspected. People are considered contagious as long as the rash is present on the skin or up until the student has received 24 hours of appropriate antibiotic treatment. Individuals with impetigo who participate in gym class or other athletic events should have lesions covered to prevent contact transmission.

### School Observation Period
Observe contacts for 10 days for development of symptoms. Refer symptomatic children to their health care provider.

### Reportable to Philadelphia Department of Public Health
No.

### Remarks
Children suspected of having an impetigo infection should be evaluated by their health care provider. Impetigo can be prevented by hand washing and clipping fingernails to reduce subsequent spread through contaminated nails.

# 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*), 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, 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.

### Method 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.

### Recommended Therapy and Management
Treatment for most diarrheal illnesses is supportive, which includes electrolyte/fluid replacement. Whether antibiotic therapy is needed is dependant 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 able to properly toilet themselves and are not wearing diapers do not need to be excluded; however, ill students should not be kept in school. Certain causes of infectious diarrhea require the exclusion of foodhandlers and those attending or working in childcare settings until cleared by PDPH. Please refer to specific disease sections for additional information.

### 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 Philadelphia Department of Public Health
**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.

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

# Flu (Influenza)

### Common Signs and Symptoms
A contagious respiratory illness caused by an influenza virus. Influenza, also known as the flu, 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, persons with chronic illness or who are immunocompromised.

### Incubation Period
The incubation period is normally 2 days.

### Method 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.

### Immunization Availability and Requirements
A flu shot 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. Certain individuals should get a flu shot every year, including all children 6 months to 18 years old, pregnant women, anyone who cares for young children, and those with underlying medical conditions such as lung, cardiac, metabolic (diabetes), renal, or immunosuppressive disease.

### 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.

### 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 Philadelphia Department of Public Health

Individual cases of influenza are not reportable. However, outbreaks of influenza and a death from influenza in any child, ages 0-18 years, are reportable to the Division of Disease Control (DDC). In some influenza seasons, all hospitalizations and deaths due to influenza are also reportable to DDC.

### Remarks

General control measures to prevent the spread of influenza in a school include getting the flu vaccine, respiratory etiquette and hand hygiene. During influenza season (typically November-March of each year), individuals suspected of 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'.

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 develop more detailed recommendations and guidance for novel influenza viruses. Consult DDC for assistance with or questions about any influenza viruses in the community.

# 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) occur in the genital area. Head lice is 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.

## Method 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. 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

## Exclusion from School

Persons with head lice should not be excluded from school but should be advised to seek treatment. “No Nit” polices 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 Philadelphia Department of Public Health

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 bacteria 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.

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 and flu like symptoms (e.g., fever, headache, chills, fatigue, body aches).

If left untreated the following symptoms may develop: arthritic pain especially in the large joints (e.g., knee) and/or neurological problems (e.g., Bell’s palsy, meningitis, 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 31 days.

### Method of Infection

An infected deer tick attaches onto the skin and feeds. The likelihood of disease transmission is greater with increased time of tick attachment (at least 36 hours).

### Recommended Therapy and Management

A 10-21 day course of antibiotics will usually prevent late term manifestations and clear the infection. Depending on the stage of disease a health care provider may also recommend intravenous medication.

### Immunization Availability and Requirements

None.

### Exclusion from School

No exclusion from school is recommended.

### School Observation Period

No observation period is recommended.

### Reportable to Philadelphia Department of Public Health

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

### Remarks

Check for ticks after field trips to tick infested habitats such as tall grassy areas or woodlands. Instruct children to dress in light colored clothing, long pants should be tucked into socks, long sleeve shirts should be tucked into pants, they should wear hats, and closed shoes, and use insect repellant with DEET or Permethrin.

# Measles (rubeola)

## Common Signs and Symptoms

Measles, also known as rubeola, is a highly contagious viral illness caused by a paramyxovirus. Illness is characterized by a prodromal phase and subsequent development of a rash. Measles is usually a mild, self-limited illness.

Symptoms of measles include a sudden onset of prodrome (lasts 2-4 days) characterized by fever, cough, runny nose, and red watery eyes followed by a rash. Measles rash lasts 5-6 days. The rash develops at the hairline and descends down the body. 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 is normally 8-12 days.

## Method of Infection

Measles is spread by direct contact with respiratory secretions or, less commonly, from airborne droplets. The contagious period is 1-2 days before the onset of symptoms (3-5 days before rash onset) 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

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.

### 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 18 days from last contact with a 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 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.
- Susceptible contacts who refuse or are contraindicated to receive live virus vaccine should be excluded for 14 days after rash onset in the last case.
    - Immune globulin (IG) is recommended for post-exposure prophylaxis for people with contraindications, but it must be given within 6 days of exposure.

### Reportable to Philadelphia Department of Public Health

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

### Remarks

Exposed pregnant women, adults 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.

# Meningococcal Infection

## Common Signs and Symptoms

Invasive meningococcal infections are caused by the gram-negative diplococcus bacteria, *Neisseria meningitidis*. Meningococcal infections usually result in bacteremia (bacteria in the blood), meningitis (inflammation of the tissue covering the spinal cord and brain) 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 less than 4 days.

## Method of Infection

Meningococcal disease is spread person-to-person by airborne droplets generated by coughing and sneezing or by direct contact (e.g., kissing, sharing cups). 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 15-30% 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 is recommended for close contacts of a case of meningococcal disease (see Control Measures section below).

## Immunization Availability and Requirements

There are 2 meningococcal vaccines (MCV4 and MPSV4). One dose of meningococcal vaccine (MCV4) is recommended for all children at age 11, as well as unvaccinated adolescents at high school entry. Vaccination with MCV4 is also recommended for certain other high risk individuals aged 2-55 (e.g., asplenic persons, persons with complement deficiency). MPSV4 can be used in these populations when MCV4 is not available. Children are required to get 1 dose of MCV4 vaccine prior to 6$^{th}$ grade enrollment.

### 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 and Control Measures

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 bacterial meningitis 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 contacts, 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 Philadelphia Department of Public Health

**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 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 a viral infection that causes small (2-5 mm), flesh-colored painless bumps (papules) to appear on the face, neck, armpits, hands, and arms. The papules can be easily removed by scratching them, which may cause infection to other areas of the skin. This type of infection is common in children, but it can also affect adults.

### Incubation Period
The incubation period is normally 2-7 weeks.

### Method of Infection
Molluscum contagiosum is transmitted by sharing personal items such as towels, sexual contact, and direct contact with papules on the skin. 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 because papules in most cases resolve without medication. However if the papules do not resolve on their own the following treatments can be used:

- Scrapping (cutterage)
- Freezing (cryptotherapy)
- Laser therapy
- Oral or topical therapy

### Immunization Availability and Requirements
None.

### Exclusion from School
Exclusion from school is not recommended.

### School Observation Period
No.

### Reportable to Philadelphia Department of Public Health
No.

### Remarks
In order to reduce the spread of Molluscum contagiosum consider the following:

- Decrease the amount of direct contact with the infected person.
- Restrict the sharing of fomites that may increase spread of the infection.
- Frequently wash hands with soap and water after touching the papules.

# Mononucleosis

### Common Signs and Symptoms
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.

Symptoms of mononucleosis include: fever, sore throat, fatigue which can last for months, lymphadenopathy, splenomegaly, and rash in those treated with ampicillin or other penicillins.

### Incubation Period
The incubation period is normally 30 to 50 days.

### Method of Infection
Mononucleosis is spread through close personal contact (e.g., kissing, sharing objects contaminated with saliva such as toys, toothbrushes, eating utensils, cups). It may also be spread through blood transfusions.

### Recommended Therapy and Management
There is no specific treatment. Supportive management of symptoms is recommended and may include acetaminophen for fever and pain or a short course of corticosteroid therapy for the treatment of acute symptoms.

### Immunization Availability and Requirements
None.

### Exclusion from School
No exclusion from school is necessary, however those participating in contact sports should be excluded until fully recovered.

### School Observation Period
Students, especially close contacts of the case, should be monitored for the development of mono symptoms for one month.

### Reportable to Philadelphia Department of Public Health
No.

### Remarks
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 regarding any outbreaks of mono in a school.

# Mosquito Borne Diseases

## Common Signs and Symptoms

There are several diseases that can be transmitted to humans by infected mosquitoes. A group of conditions called arboviruses include the following: West Nile Virus (WNV), St. Louis Encephalitis, Eastern Equine Encephalitis (EEE), Western Equine Encephalitis (WEE), La Crosse Encephalitis, and Dengue fever. Arboviruses can result in no symptoms at all, mild flu-like symptoms, or more serious complications such as meningitis, encephalitis, meningoencephalitis, or even death.

Other diseases caused by mosquitoes that are not endemic in the United States but may be seen in travelers or immigrants of foreign countries include malaria and 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. Most mosquito borne disease occur from mid-summer to early fall when mosquitoes are most active.

Mild symptoms of arboviral infection include: flu-like symptoms (e.g., fever, headache, muscle aches, nausea, vomiting), seizures, and fatigue.

Severe symptoms of arboviral infection include: stiff neck, disorientation, coma, and paralysis.

Symptoms of malaria include: flu-like symptoms (e.g., fever, chills, sweats, headache, cough, nausea, vomiting), diarrhea, arthralgia, myalgia, abdominal pain, and back pain.

## Incubation Period

The incubation period for arbovirus is normally several days to several weeks. Specifically, the incubation period for West Nile Virus is 5 to 15 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.

## Method of Infection

Viruses and/or parasites are transmitted through the bite of an infected mosquito. 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.

Treatment for malaria includes malaria chemotherapy. The type of chemotherapy the case will receive depends on what type of malaria parasite the case has and the region where it was acquired. Malaria medications may be administered orally or by IV depending on the severity of the case. Treatment should be started as soon as possible.

### 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 recommended.

### School Observation Period

No school observation period is required.

### Reportable to Philadelphia Department of Public Health

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

### Remarks

Contact the Division of Disease Control 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 insect repellants 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," 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.

## Method 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.

### 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 Philadelphia Department of Public Health

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 hand washing 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 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), fever, headache, muscle aches, tiredness, and loss of appetite. Symptoms decrease after 1 week and usually resolve after 10 days.

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.

## Method of Infection

Mumps is spread by airborne droplets generated by sneezing or coughing. The contagious period is 1-2 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

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 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 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.

### 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 Philadelphia Department of Public Health

**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
The symptoms of norovirus infection usually include the sudden onset of nausea, vomiting, watery, non-bloody diarrhea, and stomach cramps. Fever may or may not be present. Symptoms may be severe and the ill person may feel very sick. Generally, the illness is self-limiting and lasts only 1-2 days. Norovirus is often referred to as the "stomach flu" or "cruise ship virus."

### Incubation Period
The incubation period is normally 24 to 48 hours.

### Method 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.

### Immunization Availability and Requirements
None.

### Exclusion from School
Students with active diarrhea should remain home until 24 hours after symptoms resolve.

### 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 Philadelphia Department of Public Health
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 covers the eye and eyelid. Bacterial or viral infections are the most common causes of conjunctivitis. However, it can also be caused by allergens, a chemical splash, foreign object in the eye, or blocked tear duct.

Conjunctivitis is characterized by itchiness and redness in one or both eyes, tearing, 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.

## Method 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).

## 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 is the source of infection, conjunctivitis may resolve on its own without medication. However, antibiotics can be prescribed by a healthcare provider to decrease the length of illness, symptoms, and the risk of transmission to others.

## 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.

## 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 Philadelphia Department of Public Health

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 infection control and prevention guidance.

### 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

### Common Signs and Symptoms
Pinworm infestations 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. Symptoms of a pinworm infection include itching around the anus or vaginal area and difficulty sleeping and restlessness due to itching at night.

### 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.

### Method 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, 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 Philadelphia Department of Public Health
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.

An emphasis on good personal hygiene, handwashing, and regular cleaning of toys and surfaces used for eating, toileting, food preparation, and diapering will help prevent the spread of pinworms.

# Polio

### Common Signs and Symptoms
Poliomyelitis, also known as the polio, is a contagious viral illness caused by an enterovirus. Up to 95% of all polio infections are inapparent or asymptomatic. A nonspecific, minor illness presentation (low-grade fever and sore throat) occurs in 4%-8% of polio-infected individuals. Characteristic acute flaccid paralysis presentation occurs in less than 2% of all polio infections.

### Incubation Period
The incubation period is normally 6-20 days.

### Method of Infection
Polio is spread person-to-person by fecal-oral contamination or contact with nasal or oral secretions. Poliovirus is highly infectious.

The contagious period begins shortly (usually 7-10 days) before onset of illness. Poliovirus may be shed in stool for several weeks after the onset of illness. The virus persists in the throat for approximately 1 week after illness onset.

### Recommended Therapy and Management
There is no medical therapy for polio, except supportive care.

### Immunization Availability and Requirements
Inactivated polio vaccine (IPV) is usually given to children at 2, 4, and 6-18 months and 4-6 years of age. Three doses of polio vaccine, either oral poliovirus (OPV) vaccine or IPV are required to attend school.

### Exclusion from School
Consult with the Division of Disease Control.

### School Observation Period
No specific observation period is recommended.

### Reportable to Philadelphia Department of Public Health
**Yes–** report all confirmed and suspect cases to the Division of Disease Control (DDC).

### Remarks.
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 underimmunized persons.

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.

# Respiratory Syncytial Virus

### Common Signs and Symptoms
Respiratory Syncytial Virus (RSV) is a virus that causes acute respiratory tract illnesses, such as the common cold, pneumonia, and bronchiolitis in infants, young children, and older adults. The virus most commonly occurs during the winter and early spring.

Illness in young children is characterized by cold-like symptoms, which may include: coughing, sneezing, runny nose, fever, or decreased appetite.
In infants symptoms may present as: lethargy, irritability, poor feeding, or cyanosis (turning blue while coughing or no breathing).

### Incubation Period
The incubation period is normally 4-6 days.

### Method of Infection
RSV is transmitted by direct or close contact with infected nasal or oral secretions through respiratory droplets or fomites. The virus can be shed for 3 to 8 days, however infants may shed the virus for several weeks. RSV can live on contaminated surfaces for many hours.

### 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.

### Immunization Availability and Requirements
None.

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

### 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 Philadelphia Department of Public Health
No.

### Remarks

Staff can prevent the spread of RSV by:

- Frequent hand washing with soap and water or alcohol based gels
- Sanitize frequently touched surfaces and objects with a bleach solution
- Throwing away tissues containing nasal secretions after one use

During peak RSV-activity (typically in the winter and early spring), healthcare providers may prescribe palivizumab to prevent severe RSV illness in infants and children who are at high risk for severe RSV disease.

# 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), 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, intense itching, and dry, cracking skin in and around the affected area.

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

## Incubation Period

The incubation period is unknown.

## Method 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.

## 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 systemic anti-fungal medications are needed.

## Immunization Availability and Requirements

None.

## 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 Philadelphia Department of Public Health

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.

# Roseola (Human Herpesvirus 6)

## Common Signs and Symptoms

Roseola is a viral infection caused by human herpesvirus 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.

Symptoms of roseola include a high fever (above 103$^{o}$F) lasting 3 to 7 days and a red, raised rash lasting from hours to several days that becomes apparent the day the fever breaks (usually the fourth day).

## Incubation Period

The incubation period is normally 9-10 days.

## Method of Infection

The virus is spread person-to-person. Children are most likely infected by an asymptomatic caregiver. It may be spread by contact with saliva or mucus from the nose. 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 and Control Measures

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

## Reportable to Philadelphia Department of Public Health

No.

## Remarks

Roseola transmission can be prevented primarily through hand washing.

# Rotavirus

### Common Signs and Symptoms
Rotavirus is a viral infection that begins with acute onset of fever and vomiting followed 24 to 48 hours later by watery, non-bloody diarrhea. The disease is more prevalent during cooler months of the year. Symptoms 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.

### Method of Infection
The virus is spread person-to-person by the fecal-oral route. Transmission may also occur via fomites and airborne droplets generated by coughing and sneezing. Virus is present in stool when diarrhea begins and can persist for up to 3 weeks after the illness.

### Recommended Therapy and Management
There is no medical therapy for rotavirus, except supportive care.

### 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 Philadelphia Department of Public Health
**No-**the Division of Disease Control may be consulted if an outbreak is suspected.

### Remarks
Rotavirus primarily affects infants and young children. Most children contract rotavirus by 5 years old, but symptoms are most severe in children 3 and 24 months of age.

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.

# 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:

- Sudden onset of prodrome (lasts 1-5 days) characterized by low-grade fever, malaise, and upper respiratory symptoms.
- The rubella rash (lasts 3 days) is an erythematous, maculopapular rash. The rash usually occurs initially on the face and then progresses from head to foot.
- Lymphadenopathy (lasts 5-8 days) may begin a week before the rash.

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 16-18 days.

## Method of Infection

Rubella is spread by airborne droplets generated by sneezing or coughing 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. Two doses of MMR 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 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 (German measles)

### 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 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 21 days after rash onset in the last case.

### Reportable to Philadelphia Department of Public Health

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

### Remarks

Consult with DDC 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.

### Incubation Period
The incubation period is normally 12–36 hours. The incubation period for typhoid fever is normally 1 to 2 weeks.

### Method 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.

### 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.

### 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. Students and staff with confirmed typhoid fever should be excluded until three negative stool cultures are obtained.

### School Observation Period
None. Transmission of salmonellosis in the classroom is extremely rare.

### Reportable to Philadelphia Department of Public Health
**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 are excluded until they are asymptomatic and are practicing good hand hygiene.

# Scabies

### Common Signs and Symptoms
Scabies occurs when small mites called *Sarcoptes scabiei* infest the skin by burrowing into the upper layers of the epidermis.

Symptoms of scabies include rash and itchy red bumps or blisters found in the skin folds between the fingers, toes, wrists, elbows, armpits, waistline, thighs, penis, abdomen, and lower buttocks. Itching is increased at night.

Children younger than 2 years of age are more likely to be infested on the head, neck, palms, and soles of the feet.

### Incubation Period
The incubation period is usually 4 to 6 weeks. People who have been previously infested usually will have a milder illness that will develop in 1 to 4 days.

### Method of Infection
Scabies is spread through prolonged close personal contact and sharing of bedding, towels, and clothing.

### Recommended Therapy and Management
A scabicide lotion or cream treatment such as permethrin, lindane, and crotamiton should be applied to the entire body from the neck down (consult with your doctor to determine which treatment is best for you). Prophylactic therapy for scabies is recommended for the household members at the same time the case is being treated.

### Immunization Availability and Requirements
None.

### Exclusion from School
Persons with scabies should be excluded from school until treatment with an effective scabicide is completed.

### School Observation Period
Persons with similar symptoms of infection (e.g., rash, itching, blisters) should be referred to their health care provider.

### Reportable to Philadelphia Department of Public Health
No.

### Remarks
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. Mites cannot live off the skin for more than 3 days so environmental disinfection is not recommended.

# Shigellosis

### Common Signs and Symptoms
Shigellosis is caused by the bacterium *Shigella sp.* and is characterized by the acute onset of abdominal pain and watery diarrhea (sometimes bloody or mucousy), with or without nausea, vomiting, headache, or fever (gastroenteritis).

### Incubation Period
The incubation period is normally 1–3 days.

### Method 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
Although many persons will recover without treatment, antibiotics may shorten the duration of illness and length of carriage of the bacteria in the stool. Supportive treatment including electrolyte/fluid replacement may be necessary.

### Immunization availability and requirements
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 Philadelphia Department of Public Health
**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*-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 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* 0157:H7, also referred to as *E. coli* 0157.

## Incubation Period

The incubation period is normally 3-4 days.

## Method 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. Antibiotic treatment and anti-diarrheals 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.

## 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 Philadelphia Department of Public Health

**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. 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.

Food handlers and daycare employees/attendees with STEC are excluded from work/daycare until approved to return by DDC.

# Strep Throat and Scarlet Fever (Group A Streptococcal Disease)

## 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 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.

## Incubation Period

The incubation period is normally 2-5 days.

## Method of Infection

Group A streptococci is spread by direct contact with secretions from an infected person's nose or throat. Contact with infected wounds or skin may also increase an individual's risk of getting the infection.

## 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.

## Exclusion from School

A person with a GAS infection should be excluded until antibiotic treatment has been initiated for at least 24 hours.

## School Observation Period

School-based contacts of confirmed cases of strep throat or scarlet fever should be observed 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 Philadelphia Department of Public Health

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. See the impetigo contagiosum section also.

# Syphilis

### Common Signs and Symptoms
Syphilis is caused by *Treponema pallidum* and occurs in three stages:

Primary Stage: A painless sore usually occurs at the site of inoculation (penis, vagina, mouth, anus, etc.) 10 to 90 days after exposure.

Secondary Stage: A rash can occur anywhere on the body including palms of hands and soles of feet, generalized flat or raised body rash, alopecia, condylomata lata around moist areas of the body (usually vagina, rectum).

Early and Late Latent Stages: Asymptomatic, diagnosed by blood test**.**

### Incubation Period
The incubation period for syphilis ranges from 10–90 days.

### Method of Infection
Intimate and sexual contact with an infected person; includes vaginal, anal and oral sex. Syphilis can also be passed to the fetus during pregnancy.

### Recommended Therapy and Management
Penicillin (Dose and form are stage-dependent)

### Immunization Availability and Requirements
None**.**

### Exclusion from School
No exclusion from school is recommended.

### School Observation Period
No observation period is recommended.

### Reportable to Philadelphia Department of Public Health
**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.

## 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.

## Method of Infection

Spread is person-to-person by airborne droplets from a patient with active pulmonary or laryngeal TB. Transmission usually requires prolonged, close contact.

## Recommended Therapy and Management

Treatment for TB requires a combination of antituberculosis medications that may differ, depending on the resistance patterns of the bacteria.

## 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 Philadelphia Department of Public Health

**Yes –** report all confirmed and suspect cases to the Tuberculosis Control Program, 215-685-6744 or 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.

# Vomit

## Method of Infection

Vomit is a non-specific symptom that is associated with many acute illnesses or underlying conditions. Common etiological agents include norovirus, enteric bacteria, and toxins. Vomiting occurs when the stomach expulses its contents through the oral or nasal passageways. This usually occurs after a person has been infected with a virus or bacteria. Viruses and bacteria are able to invade the body through: breaks in the skin, contact with contaminated objects, inhalation of respiratory droplets, and direct contact with infected nasal and oral secretions. Common causes of vomiting include the following:

- Infections
- Medications and medical treatments
- Migraines
- Head injuries
- Acute/Chronic medical conditions

## Recommended Therapy and Management

In order to prevent and decrease the risk of infection from vomit, it is best to always follow standard precautions. Some exposures to vomit do result in infection, and all exposures require evaluation by a school nurse.

- If an area within the school community or daycare is contaminated with vomit, cover the area with towels to decrease aerosolization of the pathogen
- Wear disposable gloves and mask
- Clean soiled areas with a sanitizer and hot water
- Use paper towel or disposal cloths to clean area and dispose of items in tightly sealed garbage bags
- Disinfect the area with a bleach solution or similar caustic agent
- Wash hands carefully with soap and warm water or an alcohol based gel

## Exclusion from School

Exclusion from school is not required unless the following occurs:

- Vomiting 2 or more times within a 24 hour period
- Child is at risk for dehydration
- Vomit is associated with a communicable infection

## School Observation Period

No observation period is recommended.

## Reportable to Philadelphia Department of Public Health

Reporting cases of vomiting in a daycare center or school is dependent upon whether it is caused by a communicable pathogen.

# Whooping cough (Pertussis)

## Common Signs and Symptoms

A very contagious respiratory disease caused by bacteria (*Bordetella pertussis*). Pertussis, commonly known as whooping cough, 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 symptoms begin with cold-like signs or symptoms and progress to more serious coughing that may cause vomiting, cyanosis (turning blue), and a high-pitched whooping noise after coughing fits. Although the cough gradually disappears, coughing fits may recur for months.

## Incubation Period

The incubation period is normally 7-10 days.

## Method of Infection

Pertussis is spread by airborne 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). People are no longer contagious after 5 days of appropriate antibiotic medications.

## 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

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 10$^{th}$ birthday (Tdap). School regulations in Philadelphia require 4 doses of vaccine for all children entering kindergarten and 1$^{st}$ grade, with one dose after the fourth birthday. Children entering 6$^{th}$ grade are also required to have 1 dose of Tdap.

## Exclusion from School

Persons with pertussis 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.

### School Observation Period and Control Measures

- Observe contacts in the same classroom for respiratory symptoms for 20 days after last contact with a case. Children that develop a cough illness may need to be evaluated by their health care provider.
- Chemoprophylaxis for close contacts (household members, intimate contacts) of cases is recommended to prevent disease transmission. For children, additional doses of pertussis-containing vaccine may also be required.
- Consider reviewing immunization records for classroom contacts to ensure that students are up-to-date on their pertussis vaccinations.
- 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 Philadelphia Department of Public Health

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

### Remarks

Consult with DDC for assistance with identification and management of cases and susceptible contacts or when a pertussis outbreak (generally 2 or more unrelated cases) is suspected.

Philadelphia Department of Public Health
Division of Disease Control
www.phila.gov/health or hip.phila.gov