

Infectious Diseases in Schools



Introduction

Infectious diseases, also called communicable diseases, are widespread in our society and are a common experience among children. Crowded conditions of schools create a particularly ripe environment for the transmission of a variety of these diseases.

For disease to spread, the infectious agent (virus, bacteria, etc.) must have a place it can live (host), the right environment outside the host to survive, come in contact with a susceptible person, and have a way to infect others. Infectious diseases are spread in several ways:

- Airborne.
- Bloodborne — infected blood contacts another person's blood.
- Contact — direct contact with an open wound, soiled object or infected surface.
- Fecal-oral — swallowing food or liquid contaminated by human or animal waste.
- Food-borne — drinking or eating contaminated food or liquids.
- Animal-borne.
- Insect-borne.



Stopping the spread of infectious diseases can be done in several ways:

- Killing the agent — e.g., cleaning a surface soiled by blood with a disinfectant.
- Creating an environment that the agent cannot survive in after it leaves its host — e.g., good indoor air quality; good personal hygiene.
- Eliminating the mode of transmission — e.g., covering one's mouth when coughing, excluding infectious persons.
- Natural or vaccination immunity.
- Ensure correct use of protective equipment and/or clothing to prevent contact with infectious agents — e.g., using gloves to clean up body fluids.



This fact sheet outlines some of the most common infectious diseases in schools, methods of control and special considerations for schools.

Information about bloodborne diseases such as AIDS and Hepatitis can be found in another NYSUT fact sheet, *Bloodborne Pathogens*.

DISEASE	MODE OF TRANSMISSION	SIGNS AND SYMPTOMS	METHODS OF CONTROL	SCHOOL CONSIDERATIONS
CHICKEN POX Incubation: 14-16 days * Reportable disease.	<ul style="list-style-type: none"> • Direct contact and inhalation of contaminated air-borne droplets. • Highly contagious. 	<ul style="list-style-type: none"> • Mild fever, fatigue. • Pustular rash with lesions and crusting. 	<ul style="list-style-type: none"> • Prevent or avoid exposure to infected persons. • New vaccine (developed 1995) for persons 12 months or older • Individuals should be referred to physician. 	<ul style="list-style-type: none"> • Exclude from school for 1 week or until all sores are dried and crusted. • Persons with weakened immune systems are more susceptible.
CONJUNCTIVITIS Incubation: 24-72 hrs Viral: 5-12 days	<ul style="list-style-type: none"> • Bacteria, virus, allergy or chemicals. • Direct and indirect contact with discharge. • Contaminated fingers, clothing, other articles. 	<ul style="list-style-type: none"> • Irritated, itching or red eyes with yellow discharge. • Matted eyelids. 	<ul style="list-style-type: none"> • Good hand washing. 	<ul style="list-style-type: none"> • Cool compress for comfort. • Possible Rx. • Refer to physician. • Consider exclusion until on antibiotics for 24 hours.
FIFTH DISEASE Incubation: 4-14 days Report outbreaks only.	<ul style="list-style-type: none"> • Contact with airborne droplets from nose and throat. • Direct contact. 	<ul style="list-style-type: none"> • Lace-like rash on face, arms, legs. Resembles a “slapped cheek.” • Low-grade fever. • Person is contagious prior to visible rash. 	<ul style="list-style-type: none"> • Good personal hygiene. • No specific treatment. 	<ul style="list-style-type: none"> • Outbreaks frequently occur in spring. • Slight risk to pregnant employees, fetuses during first trimester. Consult personal physician. • Risk to those with sickle cell disease, anemia, weakened immune system.
IMPETIGO Incubation: 2-5 days. Report outbreaks only.	<ul style="list-style-type: none"> • Bacteria (staph, strep). • Bacteria in nose may spread to face (auto-infection). • Contaminated towels and other toilet articles. 	<ul style="list-style-type: none"> • Cluster of raised bumps filled with fluids. • Open sores or lesions (usually under nose and on face). 	<ul style="list-style-type: none"> • Antibiotic therapy (Bacitracin) for 24 hours generally eliminates ability to spread bacteria. • Frequent hand washing. • Avoid contact with sores or lesions. 	<ul style="list-style-type: none"> • Do not share towels. • Early ID- outbreaks occur late summer and early fall — watch for clustering of cases. • Consider exclusion until on antibiotics for 24 hours.
INFLUENZA (“The Flu”)	<ul style="list-style-type: none"> • Inhalation of infected droplets. • Highly contagious. 	<ul style="list-style-type: none"> • Fever, muscle aches, fatigue, sore throat, headache. 	<ul style="list-style-type: none"> • Bed rest, cold remedies, light exercise. • Drink plenty of liquids. • Vaccination prior to flu season (given Sept. to mid-Nov. 	<ul style="list-style-type: none"> • Offer vaccine to all staff annually. • Education: cover mouth, nose during sneezes and coughs. • Frequent hand washing.
LICE Incubation: days to weeks. Report outbreaks only	<ul style="list-style-type: none"> • Direct contact with infested person or with infested belongings (i.e.: hats, combs, brushes, crowded clothing storage). 	<ul style="list-style-type: none"> • Itching and scratching where lice feed, especially ears and head. • Eggs can be detected on hair shaft. 	<ul style="list-style-type: none"> • Medicated shampoos or cream rinses (permethrin or pyrethrin type). • Retreatment after 7-10 days is recommended to ensure no eggs have survived. • Concurrent disinfection. • Remove all nits (eggs). • Screen family members. • Avoid physical contact with infested individuals. 	<ul style="list-style-type: none"> • Separation of student lockers. • Separation of coat hangers. • Proper treatment, proper laundering of clothing and bedding. • Education of parents and children. • Screen for infestation; repeat 24 hours after treatment. • Exclusion if school has no nit (eggs) policy. • No sharing of clothes, hats.
MEASLES Incubation: 7-10 days * Reportable disease	<ul style="list-style-type: none"> • Sometimes airborne. • Highly contagious. • Direct contact with nose and throat secretions. 	<ul style="list-style-type: none"> • Serious rash illness with fever (103-105°), runny nose, cough and rash lasting 4- 7 days. 	<ul style="list-style-type: none"> • Vaccine. 	<ul style="list-style-type: none"> • Common in winter and spring. • Immunization required for school-enrolled children (including pre-Kindergarten). • Exclude children until physician approved.
MENINGITIS Incubation: 2-10 days * Reportable disease.	<ul style="list-style-type: none"> • Direct contact with nose and throat discharge. 	<ul style="list-style-type: none"> • Sudden fever, headache, vomiting, neck pain or stiffness. 	<ul style="list-style-type: none"> • Antibiotic treatment. • Preventive treatment for infected person’s family and close contacts. 	<ul style="list-style-type: none"> • Verify type of meningitis. • Watch for symptoms in other students/staff. • Communicate with staff and parents about control measures.

DISEASE	MODE OF TRANSMISSION	SIGNS AND SYMPTOMS	METHODS OF CONTROL	SCHOOL CONSIDERATIONS
MUMPS Incubation: 16-25 days * Reportable disease.	<ul style="list-style-type: none"> • Direct contact with saliva, mucus from nose and throat of infected person. 	<ul style="list-style-type: none"> • Fever. • Swelling and tenderness of salivary glands. 	<ul style="list-style-type: none"> • MMR vaccine. 	<ul style="list-style-type: none"> • Greater risk of infection to older children. • Exclusion of children while infectious.
PERTUSSIS (Whooping Cough) * Reportable disease.	<ul style="list-style-type: none"> • Highly contagious. • Direct contact with mucus from nose and throat discharge. 	<ul style="list-style-type: none"> • Spasms of severe coughing, whooping and posttussive vomiting. • Symptoms can last for many weeks. 	<ul style="list-style-type: none"> • Spasms of severe coughing, whooping and posttussive vomiting. • Symptoms can last for many weeks. 	<ul style="list-style-type: none"> • Exclude for first 5 days of antibiotic treatment. • Persons not on antibiotic treatment exclude for 21 days after onset of cough.
RINGWORM Incubation: 10-14 days after contact.	<ul style="list-style-type: none"> • Direct and indirect contact. • Animals (cats, dogs). • Combs, brushes, hats, clothing, toilet articles, chairs. 	<ul style="list-style-type: none"> • Bald spot on scalp. • Raised bump on head. • Flat, ring-shaped sore on body. 	<ul style="list-style-type: none"> • Oral anti-fungal medication for 4 weeks. • Topical anti-fungal. • Concurrent disinfection. • Launder towels, sheets, hats. 	<ul style="list-style-type: none"> • Exclude student unless infected area is covered. • Inspect pets. • Inspect head and body. • Use anti-fungicidal agent on floors/showers/towels in school.
RUBELLA (German Measles) Incubation: 14-23 days * Reportable disease.	<ul style="list-style-type: none"> • Airborne. • Direct contact. • Highly contagious. 	<ul style="list-style-type: none"> • Rash illness often with low grade fever. 	<ul style="list-style-type: none"> • Screen for immune status of pregnant women (staff and students). • Vaccine. 	<ul style="list-style-type: none"> • Exclude until 7 days after rash begins. • Exclude susceptible staff/students until vaccinated, determine immunity, or outbreak is over.
SALMONELLOSIS Incubation: 1-3 days. * Reportable disease.	<ul style="list-style-type: none"> • Exposure to feces during diapering or toileting. • Eating contaminated food, i.e. raw meat, raw eggs, unpasteurized milk and cheese products. 	<ul style="list-style-type: none"> • Mild/severe diarrhea. • Fever. • Vomiting (sometimes). 	<ul style="list-style-type: none"> • Hand washing before and after food preparation and after handling pets. • Food precautions. • Minimize student contact with reptiles and birds. 	<ul style="list-style-type: none"> • Exclusion of persons with active diarrhea. • Consult local health dept. about excluding children with poor hygiene practices.
SCABIES Incubation: 2-6 wks Report outbreaks only.	<ul style="list-style-type: none"> • Direct skin-to-skin contact (diapering, holding hands). • Caused by mites that burrow under skin and lay eggs. 	<ul style="list-style-type: none"> • Intense itching (red lines), especially in finger webs, bend of elbow, behind knee, lower part of buttocks. 	<ul style="list-style-type: none"> • Prescription skin lotion. • Concurrent disinfection of clothing/linens. Wash with hot water; dry clean. 	<ul style="list-style-type: none"> • Exclude until 24 hrs after treatment. Family members should also be treated. • Education: personal hygiene of parents and children.
SHINGLES Incubation: could be years.	<ul style="list-style-type: none"> • Had chicken pox. • Active case can transmit chicken pox to others. 	<ul style="list-style-type: none"> • Tingling of skin, itching or stabbing pain. • Rash appears after several days, developing into small, fluid-filled blisters. 	<ul style="list-style-type: none"> • Persons with weak immune system should see physician for treatment (antiviral). • Vaccinate against chicken pox. 	<ul style="list-style-type: none"> • Consider exclusion of students and staff if shingles cannot be covered.
STREPTOCOCCAL SORE THROAT Incubation: 1-5 days Report outbreaks only.	<ul style="list-style-type: none"> • Direct contact. 	<ul style="list-style-type: none"> • Sudden headache, fever, sore throat. • Sometimes a rash. 	<ul style="list-style-type: none"> • Antibiotic treatment. • Treatment not necessary unless symptomatic. 	<ul style="list-style-type: none"> • School nurse should keep weekly total case count; watch for clustering. • Consider exclusion of symptomatic students until cleared by physician.
TUBERCULOSIS * Reportable disease.	<ul style="list-style-type: none"> • Coughing, sneezing, sputum, saliva of person with active disease. • Airborne droplets. 	<ul style="list-style-type: none"> • Fatigue, weight loss, night sweats, fever. • Late stages: coughing up blood, chest pain. 	<ul style="list-style-type: none"> • If test is positive, preventive drug therapy. • An adequate amount of fresh air in a building may be the best defense against the spread of TB. • Usually not transmitted by children under 12 due to poor cough reflex. • Children may be infected by adults. 	<ul style="list-style-type: none"> • Annual TB screening. • After exposure, another Mantoux test and again 12 weeks later. • If Mantoux positive, provide x-ray. • Persons with active disease excluded until physician clears. • Train staff.

* Report to local health department immediately



What You Can Do To Protect Yourself

1. Hand washing is the single most effective method to combat the spread of non-bloodborne infectious disease. Make sure your employer has a policy that encourages hand washing by all staff and students. Hands should be washed after using the bathroom; before and after preparing food; handling animals or objects used in animal care; and before and after assisting ill students or having contact with body fluids, such as blood, feces, urine, or mucus.
2. Know your risk of infection. Pregnant women and their fetuses may be more vulnerable to some specific infectious diseases. Individuals with chronic illnesses that weaken their immune system, such as cancer and diabetes, may also be more susceptible to infectious diseases. Discuss your health status with your physician.
3. Minimize student contact with animals such as reptiles and birds. They are a common carrier of Salmonella infection.
4. Make sure all staff use universal precautions when dealing with body fluids.
5. Help your own immune system by taking care of yourself. Remember that one of the requirements for the spread of disease is that there must be a susceptible person who can be infected. Research confirms that if you exercise regularly, eat sensibly, and get plenty of sleep, you will have significantly fewer infectious illnesses than if you don't.



What Your Employer Can Do

1. Adopt a comprehensive infectious disease policy for students and staff. Include a cleaning and disinfection program for classroom surfaces, bathrooms, diapering areas. Provide adequate equipment and supplies to implement policy.
2. Train staff annually on all aspects of infectious diseases.
3. Consult with the local health department to discuss possible outbreaks of infectious disease and coordinate parent and staff training with health officials.
4. Good air quality can reduce the spread of airborne diseases such as influenza. If the indoor air does not include enough outside air, have the carbon dioxide (CO²) level tested. If the CO₂ levels are above the outdoor levels plus 700 parts per million (PPM), the district should check the ventilation system and make necessary changes to increase the amount of outside air. Renovated or newly designed ventilation systems should be built to bring in enough outside air to keep CO₂ levels at acceptable levels.
5. Encourage staff to be fully vaccinated against measles, mumps, rubella, chickenpox (if they have never had chickenpox), influenza and pneumococcal disease (if they have a high-risk medical condition).



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