Chapter 8

COMMUNICABLE DISEASE CONTROL

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Communicable Diseases

National Association of School Nurses: Position Statement on Infectious Disease

The National Association of School Nurses encourages school nurses to assist school districts with infectious disease prevention programs. Schools need to develop policies to determine appropriate inclusion/exclusion criteria and assist students and staff. School nurses should assist in the development and implementation of educational programs related to disease prevention. They should become involved in the prevention, diagnosis, and treatment of infectious diseases and advocate for public policy to support education services and research.¹

There has been a resurgence of infectious diseases in the school population. These diseases result from drug resistant strains and the emergence of new organisms for which there are no vaccines and no cure. These diseases may be spread by one or more of the following ways:

- Inhalation of aerosolized particles;
- Contact with bloodborne organisms;
- Sexual contact:
- Fecal-oral contact;
- Vertical transmission from mother to unborn child.²

There are five major issues for school nurses:

- Preventing infections by the use of vaccines;
- Educating students and staff about avoiding exposure to pathogens;
- Preventing transmission of infectious diseases at school;
- Providing appropriate nursing care and health counseling; and
- Protecting the confidentiality of persons with infectious diseases who attend school.³

Universal Precautions⁴

Occupational Safety and Health Administration (OSHA) Final Bloodborne Pathogens Standard. The following guidelines are designed to protect persons who may be exposed to blood or body fluids of students or employees in a school.

Overview

Anticipating Potential Contact

Anticipating potential contact with infectious materials in routine and emergency situations is the most important step in preventing exposure to and transmission of infections. Use universal precautions and infection control techniques in all situations that may present the hazard of infection. Diligent and proper handwashing, the use of barriers (e.g., latex or vinyl gloves), appropriate disposal of waste products and needles, and proper care of spills are essential techniques of infection control.

Applying the Concept of Universal Precautions

When applying the concept of universal precautions to infection control, all blood and body fluids are treated as if they contain bloodborne pathogens, such as human immunodeficiency virus (HIV) and hepatitis B virus (HBV). HIV and HBV can be found in:

- Blood
- Spinal fluid
- Synovial fluid
- Vaginal secretions
- Semen
- Pericardial fluid
- Breast milk
- Peritoneal fluid
- Amniotic fluid
- Pleural fluid

Hepatitis B Virus (HBV)

HBV is also found in saliva and other body fluids such as urine, vomitus, nasal secretions, sputum, and feces. It is not possible to know whether these body fluids contain bloodborne pathogens; therefore, all body fluids should be considered potentially infectious. Universal precautions should be observed by all students and staff when handling or coming into contact with any blood or body fluids.

Handwashing

Diligent and proper handwashing is an essential component of infection control. Hands should be washed:

- Immediately before and after physical contact with a student (e.g., diaper changes, assistance with toileting, or assistance with feeding);
- Immediately after contact with blood or body fluids or garments or objects soiled with body fluids or blood;
- After contact with used equipment (e.g., stethoscope, emesis basin, and gloves); and
- After removing protective equipment, such as gloves or clothing.

Procedure:

- 1. Remove jewelry and store it in a safe place prior to initial handwashing (replace jewelry after final handwashing).
- 2. Wash hands vigorously with soap under a stream of running water for approximately 10 seconds.
- Rinse hands well with running water, and thoroughly dry with paper towels.
- 4. If soap and water are unavailable, bacteriostatic/bactericidal wet towelettes, "handi-wipes," or instant hand cleaner may be used.

Ways to Avoid Contact with Body Fluids

Gloves

When possible, avoid direct skin contact with body fluids. Disposable single-use waterproof, latex, or vinyl gloves should be available in school clinics. Vinyl gloves should be used with students who have a latex allergy or a high potential for developing a latex allergy, such as students with spina bifida (see Chapter 9 of this manual for a further discussion of latex allergies). The use of gloves is intended to reduce the risk of contact with blood and body fluids for the caregiver as well as to control the spread of infectious agents from student to employee, employee to student, or employee to employee.

Gloves should be worn when direct care may involve contact with any type of body fluids. Incidents when gloves should be worn include (but are not limited to): caring for nose bleeds, changing a bandage or sanitary napkin, cleaning up spills or garments soiled with body fluids, disposing of supplies soiled with blood, or any procedure where blood is visible. Gloves should also be worn when changing a diaper, catheterizing a student, or providing mouth, nose, or tracheal care.

Do Not Reuse Gloves

After each use, gloves should be removed without touching the outside of the glove and disposed of in a lined waste container. After removing the gloves, the hands should be washed according to the handwashing procedure.

Protective Clothing

If spattering of body fluids is anticipated, the clothing of the caregiver should be protected with an apron or gown and the face protected with a face mask and eye goggles or face shield. The apron or gown should be laundered or disposed of after it is used and should not be used again until it is clean.

Disposal of Infectious Waste

Contaminated Supplies

All used or contaminated supplies (e.g., gloves and other barriers, sanitary napkins, Band-Aids), except syringes, needles, and other sharp implements, should be placed into a plastic bag and sealed. This bag can be thrown into the garbage out of reach of children or animals.

Used Needles, Syringes, and Other Sharp Objects

Make arrangements to dispose of used needles, syringes, and other sharp objects at a local medical facility or health department. Needles, syringes, and other sharp objects should be placed **immediately after use** in a metal or other puncture-proof container that is leak-proof on the bottom and sides. To reduce the risk of a cut or accidental puncture by a needle, <u>NEEDLES SHOULD NOT BE RECAPPED</u>, <u>BENT</u>, <u>OR REMOVED FROM THE SYRINGE BEFORE DISPOSAL</u>. Once the container is full, it should be sealed, bagged, and kept out of the reach of children until it can be disposed of properly.

Body Waste

Body waste (e.g., urine, vomitus, and feces) should be disposed of in the toilet. If such body fluids as urine and vomitus are spilled, the body fluids should be covered with an absorbent sanitary material, gently swept up, and discarded in plastic bags.

Clean-Up

Spills of blood and body fluids should be cleaned up immediately with an approved disinfectant cleaner.

Procedure:

- 1. Wear gloves.
- 2. Mop up spill with absorbent material.
- 3. Wash the area well, using the disinfectant cleaner supplied in the clinics or a 1:10 bleach solution (mix 1 part household bleach, sodium hypochlorite, in ten parts of water). Replace solution daily.
- 4. Dispose of gloves, soiled towels, and other waste in sealed plastic bags and place in garbage, as indicated earlier.
- 5. Wash hands.

Routine Environmental Clean-Up Facilities

Routine environmental clean-up facilities (e.g., clinic and bathrooms) do not require modification unless contaminated with blood or body fluids. If so, the area should be decontaminated using the procedure outlined above. Regular cleaning of non-contaminated surfaces, such as toilet seats and tabletops, can be done using standard cleaning solutions or the 1:10 bleach solution described above. Regular cleaning of

obvious soil is more effective than extraordinary attempts to disinfect or sterilize surfaces.

Cleaning Tools

Brooms and dustpans must be rinsed in disinfectant. Mops must be soaked in disinfectant, washed, and thoroughly rinsed. The disinfectant solution should be disposed of promptly down the drain.

Laundry

Whenever possible, disposable barriers (e.g., disposable gloves and gowns) should be used if contamination with blood or body fluids is anticipated. If sheets, towels, or clothing become soiled, they should not be handled more than necessary. Wash contaminated items with hot water and detergent for at least 25 minutes. Presoaking may be required for heavily soiled clothing. The most important factor in laundering clothing contaminated in the school setting is elimination of potentially infectious agents by soap and hot water.

Soiled student clothing should be rinsed using gloves, placed in a plastic bag, and sent home with appropriate washing instructions for the parents.

Accidental Exposure

Accidental exposure to blood, body product, or body fluids places the exposed individual at risk of infection. The risk varies depending on the type of body fluid (e.g., blood vs. respiratory vs. feces), the type of infection (e.g., salmonellae vs. haemophilus influenzae virus vs. HIV), and the integrity of the skin that is contaminated.

Procedure:

- 1. Always wash the contaminated area immediately with soap and water.
- 2. If the mucous membranes (i.e., eye or mouth) are contaminated by a splash of potentially infectious material or contamination of broken skin occurs, irrigate or wash area thoroughly.
- 3. If a cut or needle injury occurs, wash the skin thoroughly with soap and water.

If broken skin or mucous membranes are contaminated or a needle puncture occurs, the caregiver should document the incident. The student's parent or guardian should be notified. The person who was exposed to the infection should contact his/her health care provider for further care as outlined in the recommendations by the Centers for Disease Control and Prevention (CDC). ⁵

Pregnant Women

Pregnant women are not at higher risk for infection than other caregivers provided that appropriate precautions are observed. There is, however, the possibility of in utero transmission of viral infections, such as cytomegalovirus (CMV), HIV, or HBV to unborn children.⁶

Reportable Conditions

Prompt and accurate reporting of suspected communicable disease conditions is of utmost importance. It permits health officials to exercise the appropriate measures to prevent the spread of disease. The following section presents conditions that are reportable to the Texas Department of Health (TDH). It also gives instructions for the proper procedure to be followed when a student, faculty member, or staff member of a school is suspected of having a reportable condition.

Who Should Report

Under 25 Texas Administrative Code §97.2, school authorities, including a superintendent, principal, teacher, school nurse, or counselor of a public or private school should report those students attending school who are suspected of having a notifiable condition.

Reportable Conditions in Texas

The most current edition of TDH's publication entitled "Identification, Confirmation, and Reporting of Notifiable Conditions" should be used to determine when a notifiable condition should be reported. Copies may be obtained from:

Materials Acquisition and Management Division Texas Department of Health 1100 West 49th Street Austin, TX 78756

The following table, available at the Texas Department of Health (http://www.tdh.state.tx.us/ideas/report/report.htm), lists notifiable conditions as listed in 25 Texas Administrative Code §97.3. The table also outlines when and how to report each condition. Failure to report a suspected reportable condition is a Class B misdemeanor under Section 81.049(b) of the Health and Safety Code. All diseases should be reported by name, age, sex, race/ethnicity, date of birth, address, telephone number, disease, date of onset, method of diagnosis, and name, address, and telephone number of healthcare provider. Reports should be made to the local health authority or regional TDH office.

Forms may be obtained by calling your regional Texas Department of Health office or (512) 458-7218.

NOTIFIABLE CONDITION	WHEN TO REPORT	HOW TO REPORT
Acquired immune deficiency	Within one week	CDC form 50.42A (or 50.42B
syndrome (AIDS)*	Within one week	for <13 years of age)
Amebiasis	Within one week	EPI-1 or EPI-4 form
Anthrax	Immediately	Call (800) 705-8868 or (800)
		252-8239
Asbestosis	Within one week	EPI-1 or EPI-4 form
Botulism, foodborne	Immediately	Call (800) 705-8868 or (800) 252-8239
Botulism, infant	Within one week	EPI-1 or EPI-4 form
Brucellosis	Within one working	Call (800) 705-8868 or (800)
	day	252-8239
Campylobacteriosis	Within one week	EPI-1 or EPI-4 form
Chancroid*	Within one week	EPI-4 or STD 27 form
Chickenpox (varicella)	Within one week	EPI-1 or EPI-4 form
Chlamydia trachomatis	Within one week	EPI-4 or STD 27 form
infection*		
Creutzfeldt-Jakob disease (CJD)	Within one week	EPI-1 or EPI-4 form
Cryptosporidiosis	Within one week	EPI-1 or EPI-4 form
Cyclosporiasis	Within one week	EPI-1 or EPI-4 form
Dengue	Within one week	EPI-1 or EPI-4 form
Diptheria	Immediately	Call (800) 705-8868 or (800) 252-8239
Drowning/near drowning	Within one week	EPI-1 or EPI-4 form
Ehrlichiolsis	Within one week	EPI-1 or EPI-4 form
Encephalitis (specify etiology)	Within one week	EPI-1 or EPI-4 form
Escherichia coli,	Within one week	EPI-1 or EPI-4 form
enterohemorrhagic		
Gonorrhea*	Within one week	EPI-4 or STD 27 form
Hansen's disease (leprosy)	Within one week	EPI-1 or EPI-4 form
Hantavirus infection	Within one week	EPI-1 or EPI-4 form

NOTIFIABLE CONDITION	WHEN TO	HOW TO REPORT
Hamalytia yearsia area larea	REPORT	EPI-1 or EPI-4 form
Hemolytic uremic syndrome (HUS)	Within one week	EPI-1 or EPI-4 form
Haemophilus influenzae type b	Immediately	Call (800) 252-9152
infections, invasive*		
Hepatitis A (acute)	Within one working	Call (800) 705-8868 or (800)
	day	252-8239
Hepatitis B, D, E, and	Within one week	EPI-1 or EPI-4 form
unspecified (acute)		
Hepatitis C (newly diagnosed infection)	Within one week	EPI-1 or EPI-4 form
Human immunodeficiency virus	Within one week	CDC form 50.42 A (or 50.42
(HIV) infection*		B for < 13 years of age)
Lead, adult elevated blood	Within one week	EPI-1 or EPI-4 form
Lead, childhood elevated blood	Within one week	EPI-1 or EPI-4 form
Legionellosis	Within one week	EPI-1 or EPI-4 form
Lyme disease	Within one week	EPI-1 or EPI-4 form
Malaria	Within one week	EPI-1 or EPI-4 form
Meningococcal infections, invasive	Immediately	Call (800) 705-8868 or (800) 252-8239
Meningitis (specify type)*	Within one week	EPI-1 or EPI-4 form
Measles (rubeola)	Immediately	Call (800) 252-9152
Mumps	Within one week	EPI-1 or EPI-4 form
Pertussis	Immediately	Call (800) 252-9152
Pesticide poisoning, acute	Within one week	EPI-1 or EPI-4 form
occupational		
Plague	Immediately	Call (800) 705-8868 or (800) 252-8239
Poliomyelitis, acute paralytic	Immediately	Call (800) 252-9152
Q fever	Within one working	Call (800) 705-8868 or (800)
	day	252-8239
Rabies, human	Immediately	Call (800) 705-8868 or (800) 252-8239
Relapsing fever	Within one week	EPI-1 or EPI-4 form
Rubella (including congenital)	Within one working day	Call (800) 252-9152
Salmonellosis, including typhoid fever	Within one week	EPI-1 or EPI-4 form
Shigellosis	Within one week	EPI-1 or EPI-4 form
Silicosis	Within one week	EPI-1 or EPI-4 form
Smallpox	Immediately	Call (800) 705-8868 or (800) 252-8239
Spotted fever group rickettsioses	Within one week	EPI-1 or EPI-4 form

NOTIFIABLE CONDITION	WHEN TO REPORT	HOW TO REPORT
Streptococcal disease (group A	Within one week	EPI-1 or EPI-4 form
or B), invasive*		
Syphilis	Within one week	EPI-4 or STD 27 form
Tetanus	Within one week	EPI-1 or EPI-4 form
Trichinosis	Within one week	EPI-1 or EPI-4 form
Tuberculosis	Within one working	TB-400 form
	day	
Tularemia	Within one working	Call (800) 705-8868 or (800)
	day	252-8239
Typhus	Within one week	EPI-1 or EPI-4 form
Vibrio infection, including	Within one working	Call (800) 705-8868 or (800)
cholera	day	252-8239
Viral hemorrhagic fever	Immediately	Call (800) 705-8868 or (800)
		252-8239
Yellow fever	Immediately	Call (800) 705-8868 or (800)
		252-8239
Yersiniosis	Within one week	EPI-1 or EPI-4 form

Special Instructions:

- Acquired Immune Deficiency Syndrome (AIDS) should only be reported once following the initial diagnosis. The report date and type and results of tests, including a CD4+T lymphocyte cell count below 200 cells per microliter/percentage<14%, must also be included with the report.</p>
- Chancroid, Clamydia trachomatis infection, gonorrhea, human immunodeficiency virus (HIV), and syphilis reports must also include the report date and type and results of tests, including a CD4+T lymphocyte cell count below 200 cells per microliter/percentage<14%, for HIV infection.
- Meningitis types include aseptic/viral, bacterial (specify etiology), fungal, parasitic, and other.
- Invasive streptococcal disease or invasive me ningococcal infection refers to isolates from normally sterile sites and includes meningitis, septicemia, cellulitis, epiglottitis, osteomyelitis, pericarditis, and septic arthritis.

Selected Communicable Diseases

Impetigo⁷

Impetigo is a common skin infection caused by streptococcal (strep) or staphylococcal (staph) bacteria. The first indication of infection may be discharge at an injured spot on the skin such as an insect bite, cut, or burn that can be spread easily by the individual's hands to other areas of the skin. Impetigo most commonly occurs on the face. The red, rounded, and "oozing" rash may have a flat, honey-colored crust and may be itchy. Impetigo sometimes causes blisters that break easily leaving raw, "oozing" skin exposed. In rare cases, impetigo caused by strep bacteria may cause kidney disease. Impetigo most commonly occurs during warm summer months.

As long as lesions from impetigo exist, bacteria can be spread to another person who has direct contact with the skin or a surface contaminated by discharge or crusts.

Treatment

Typically some combination of a special soap, antibiotic ointment, and occasionally an oral antibiotic is prescribed.

School Attendance Guidelines

Students and staff do not need to be sent home in the middle of the day if a suspected impetigo rash is noticed. Wash the rash area with soap and water and cover it lightly. *Those who touch the rash should wash their hands immediately*. Affected students and staff may return to school after using medicine for 24 hours. The sores should be kept lightly covered until they have dried up completely.

Stop-spread guidelines:

- When students suffer an injury that causes a break in the skin, wash the area thoroughly with soap and water and dry it carefully.
- When there is a risk of impetigo, wash the rash with soap and water and cover it loosely with gauze, a bandage, or clothing.
- Be sure those who touch the rash wash their hands well.
- Dispose of any soiled tissues or bandages carefully, and keep any possibly contaminated clothing in a plastic bag.

- Instruct the parents to have the student examined by their health care provider.
- Be alert to an outbreak. If there are any cases associated with rheumatic fever, kidney disease, or toxic shock, consult with the school healthcare provider about having all students and staff cultured.
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Hepatitis A⁹

Hepatitis A is an infection of the liver caused by the hepatitis A virus. Although the virus causes a total body illness, it is spread through the intestines and stool. The illness often occurs from 2 to 8 weeks after the virus is ingested. Adults who have hepatitis A often suffer from fatigue, loss of appetite, nausea, abdominal pain, fever, and jaundice (yellowing of the skin and whites of the eyes, as well as dark brown urine and light colored stools). These symptoms usually last from 1 to 2 weeks, although some adults may be sick for several months. Most young children who catch the virus have only a mild flu-like illness without jaundice or have no symptoms at all.

This virus is passed out of the body in the stool and is spread by stool-to-mouth contact. It is found only briefly in the blood. Contact with stool-contaminated food, drink, or environmental surfaces can also spread the infection. A person is most contagious during the two weeks before the illness begins. Because most young children with hepatitis A do not become ill, often the first sign of the infection is a jaundiced parent or staff member.

Treatment

Treatment for hepatitis A focuses on relieving symptoms. However, because the incubation period is so long, the illness can be made milder or prevented by giving persons a protective shot of immune globulin (IG) within 2 weeks of exposure to the virus.

School Attendance Guidelines

Children and adults with acute hepatitis A should be excluded from school for one week after the onset of the illness and until jaundice has disappeared.

Stop-spread guidelines:

- Schoolroom exposure generally does not pose a significant risk of infection, and IG is not usually indicated. However, IG may be given to those who have close personal contact (e.g., sharing food or eating or drinking utensils) with infected individuals.
- If a case of hepatitis A occurs in a kindergarten, first-grade, or pre-school class where hygiene may not be optimal or in a group of students who may not be continent of stool, more stringent control measures including the use of IG may be indicated. The local Board of Health can provide recommendations.
- Food handlers must receive IG within 2 weeks of exposure or be excluded for 28 days from the day of the last possible exposure.
- Strictly enforce hand washing and cleanliness rules and ensure that all bathrooms are properly supplied with soap, paper towels, and toilet paper.
- Request that all parents and staff notify the school if any person in their household is diagnosed with hepatitis A.
- If a household member comes down with hepatitis A, all other members should contact their health care provider. An injection of IG is usually recommended.¹⁰

Influenza¹¹

Influenza is caused by a virus (influenza A or B), and symptoms include high fever, chills, congestion, coughing, and muscle aches. Most people who get influenza feel too ill to go to school or work.

The virus concentration in respiratory secretions is usually highest up to 7 days before a person develops symptoms of illness. Viruses continue to be present in respiratory secretions for 2 to 3 days after symptoms begin. As a result, infected students and staff have already spread viruses before they begin to feel ill.

Treatment

Health care providers usually suggest rest and plenty of fluids. Children with chronic cardiac or respiratory conditions, including asthma or those who are immunosuppressed, or compromised, should receive an influenza vaccine every year. Some practitioners will

administer oral antiviral medication to children with suspected influenza. This medication has been shown to lessen the duration of symptoms if given within 24 hours of the onset of symptoms.

CAUTION: Aspirin (or products containing salicylate) should NEVER be used for fever control if influenza or chickenpox is suspected because of the rare association between Reyes syndrome (vomiting, liver problems, and/or coma) and influenza and chicken pox.¹²

School Attendance Guidelines

There is no need to exclude students and staff, as long as they feel well enough to attend.

Meningitis¹³

Acute meningitis may be caused by a variety of organisms including viruses, bacteria, fungi, mycoplasma, and parasites. Viral or aseptic meningitis or meningoencephalitis is an acute inflammation of the meninges that may or may not involve parts of the brain as well. The most common causative agents are enteroviruses, but no cause is determined in the majority of cases. Severity of symptoms is determined by the extent of tissue involvement. Onset is generally gradual and may be preceded by a nonspecific febrile illness. Headache and hyperesthesia are the most commonly reported symptoms in children and adolescents. Nausea, vomiting, leg pain, and photophobia are also common. Stupor and seizures may be noted with high fever. Patients should be hospitalized and treated with antibiotics until a bacterial or other cause is ruled out. Treatment of aseptic meningitis is symptomatic and includes antipyretics and analgesics. Intravenous fluids may be necessary in cases of anorexia or vomiting.

Bacterial meningitis is one of the most potentially dangerous infections in children. The most common causative organisms in children 2 months to 12 years of age are *S. pneumoniae*, *N. meningitidis* (see below), and *H. influenzae* type b. Onset of symptoms is usually gradual and may be preceded by several days of upper respiratory symptoms. Increased lethargy and irritability follow. Nuchal rigidity may be present and demonstrated by a positive Kernig sign (flexion of the hip 90 degrees with subsequent pain with extension of the leg) and Brudzinski sign (involuntary flexion of the knees and hips after passive flexion of the neck). Rarely, onset of symptoms is abrupt, with signs of shock, disseminated intravascular coagulation (DIC), and reduced levels of

consciousness. Diagnosis is made by analysis of CSF. Patients should be hospitalized for intravenous antibiotics and close monitoring of neurological status.¹⁴

Bacteria called *Neisseria meningitides* can cause meningococcal illnesses that are serious and sometimes fatal. People with this type of meningitis must be hospitalized immediately and receive intravenous antibiotics. The disease usually starts suddenly with fever chills, lethargy, and a rash of fine red freckles or purple splotches. Older children and adults may experience severe headache, neck pain, and stiffness.

The bacteria are passed between people who are in close contact through coughing, sneezing, nasal discharge, saliva, and touching of infected secretions. It can be spread by sharing eating utensils, drinking cups, water bottles, and kissing. While household contacts are at the highest risk of contracting this illness, others sharing these exposures are at risk as well.

Stop-spread guidelines:

- The best way to prevent spread of meningococcal disease is to alert everyone that a case has occurred so that appropriate preventive treatment can begin.
- Instruct significantly exposed staff, and parents of significantly exposed student, to contact their health care providers immediately.
- Anyone having close contact with the ill person (e.g., household members and friends sharing eating and drinking utensils, sharing water bottles, or kissing) in the 2 weeks prior to the onset of symptoms should take antibiotics, e.g., rifampin, per licensed prescriber's order, to lower the risk of the spread of the disease. Treatment of all close contacts should be done within the first 2 weeks of diagnosis of the first case, but preferably as soon as possible within the first 24 hours. Deciding who is a close contact can be established by consulting with the school nurse, school physician, and/or local board of health.
- Inform parents and staff that antibiotics do not provide absolute protection against disease. Therefore, any student or adult who develops symptoms such as fever or headache requires prompt evaluation by a health care provider.

• Monitor the situation closely for 2 to 3 weeks. Make sure all ill students and staff are seen by their doctors and that the school is notified if another person develops meningococcal disease. Be sure that the parents of any student who is enrolled during this period are informed about the risks so that they may take appropriate precautions.¹⁵

Varicella (Chicken Pox)¹⁶

Chickenpox (primary varicella) is an acute generalized disease caused by varicella-zoster virus, a member of the herpes virus group. The illness is characterized by a generalized, itchy, blister-like rash, with mild fever and fatigue. The rash appears as red bumps, which quickly become blistered, ooze, and then crust over. New spots continue to appear for about three to four days. The spots will dry up and scab over before falling off. The disease is usually more serious in adults than in children.

A variety of complications can occur with chickenpox. These include infections ranging from impetigo to severe skin infections with toxic shock syndrome. Secondary pneumonia can occur. Less common complications can involve the blood, joints, brain, and kidney. Reyes Syndrome can follow chickenpox. Severe chickenpox can occur in newborn babies when their mothers develop chickenpox five days before or two days after birth. Persons with weakened immune systems or who are taking drugs that suppress their immune systems are at increased risk of developing severe chickenpox.

Once a person has been infected with the varicella-zoster virus and develops chickenpox, the virus remains (without symptoms) in the body's nerve cells. In some people, the virus reactivates later and is called shingles or zoster. With shingles, a red, often painful or itchy, blistery rash appears, usually in a linear pattern that follows a nerve root. There is no fever. The virus shed in the blisters of the rash can cause chickenpox in a person who has not had it, if that person had direct contact with the infected shingles blister. ¹⁷

Individuals with chickenpox are contagious from 1 to 2 days before the rash appears until 5 days after the rash begins. Chickenpox is transmitted from person to person by direct contact, droplet, or airborne spread of vesicle fluid or secretions of the respiratory tract of chicken pox cases. Chickenpox is also transmitted by handling articles that are freshly soiled by the infected person's chickenpox lesions.

Treatment

Healthy children are not usually treated for chickenpox. The symptoms may be treated with anti-puritic medicine and lotions, medicine for fever control, fluids, and rest. Scratching should be avoided because it can increase scarring and/or the risk of secondary bacterial infections of lesions. The varicella vaccine is now available and is recommended between 12 and 18 months of age, or at any age if a child has not had chickenpox.

School Attendance Guidelines

Students may return to school on the sixth day after the rash first appears (or when all blisters are crusted over and dry). In mild cases with only a few blisters, students may return to school sooner if all lesions are crusted.

Students and staff with shingles carry the virus that causes chickenpox and could cause an outbreak. Therefore, *unless the shingles rash can be completely covered*, it is advisable that individuals with shingles stay home until the rash is crusted over and dry. The person with shingles must be very careful about personal hygiene.¹⁹

Prevention Guidelines:

- Develop a policy, in consultation with local health department, for responding to cases of communicable disease.
- Make sure all students and staff exhibiting symptoms associated with the illness are excluded from school based on guidelines described earlier.
- Identify high-risk individuals (e.g., pregnant women, immunocompromised individuals) and refer them to their health care provider immediately.
- Watch closely for early symptoms in others for 3 weeks following the most recent case.
- Advise parents and staff of the availability of varicella vaccine. Suggest they discuss the appropriateness of receiving this vaccine with their health care provider.²⁰

Tuberculosis²¹

Tuberculosis (TB) is a bacterial disease caused by the tubercule bacilli *Mycobacterium tuberculosis*, *Mycobacterium bovis*, *and Mycobacterium africanum*.²² It can affect any organ of the body—although the respiratory tract is most commonly involved. TB spreads through airborne transmission. If a person infected with TB coughs, sneezes, spits, or sings, and releases infected droplets of mucous these may be picked up by a non-infected person who then develops TB. These droplets remain viable and suspended in the air for several hours. TB is not spread by kissing or sharing utensils or other objects, such as books or clothing. Young children with TB are less likely to infect others than are adults with TB because the concentration of bacilli is lower in the bronchial secretions and the cough is often not forceful enough to propel infectious particles.²³ Two weeks after beginning anti-TB medications, most adults no longer transmit the organism.²⁴

TB infection is defined by a positive tuberculin skin test (PPD) in a person who has no physical findings of disease and a chest x-ray that is either normal or reveals only granulomas or calcification in the lung or surrounding lymph nodes. TB "disease" is defined as a person with infection in whom signs, symptoms, and/or x-ray changes are apparent—disease may be limited to the lung and/or outside the lung. In adults, this distinction between disease and infection is fairly clear, but it is less so in children. TB can lay dormant in the body for years before the disease becomes apparent. Adults and children who are more likely to progress from infection to disease include those with recent contact, immunosuppression, or HIV infection. The most common symptom is a cough, often one that lasts for weeks, and there may be blood in the mucous that is expectorated. The disease may also cause chest pain, fever, weakness, loss of appetite, and night sweating. Extrapulmonary symptoms reflect the area of the body that is involved with the disease.

Interpretation of the results depends on the size of the raised or indurated area at the site of the PPD test, typically the forearm. A reactive PPD develops a red, swollen area (induration) at the approximate area of test administration, and occurs within 48 hours of test administration. A reactive area greater than or equal to 10mm is considered positive for infection. For groups at high risk for infection, an induration greater than or equal to 5mm is considered positive. Groups at high risk for TB infection and disease include:²⁵

- Foreign-born persons from high-incidence countries;
- Poor and indigent persons, especially in large cities;
- Persons known to have or suspected of having HIV infection;
- Close contacts of a person with infectious TB;
- Present and former residents of correctional institutions:
- Homeless persons;
- Injecting drug users;
- Health care workers caring for high-risk patients; and
- Children exposed to high-risk adults.

Treatment

Individuals with TB infection may be treated with oral anti-TB medication to prevent the infection from progressing to disease. Medication is usually taken once daily for 6 to 12 months.

To cure TB disease, several different medications are prescribed for 6 to 12 months. Medications must be taken according to instructions, or TB germs may become drug resistant making treatment difficult or even impossible. Recent media attention has focused on this problem, often referred to as "multi-drug-resistant (MDR) TB." MDR TB is not more likely to cause infection or disease than ordinary TB bacteria, but MDR TB infection and disease are more difficult to treat.

School Attendance Guidelines

Students or staff diagnosed with suspected or confirmed TB disease should not attend or work in schools until they have begun taking prescribed anti-TB medications and their health care provider states, in writing, that they are not contagious. Within two weeks, individuals taking such medications are generally not contagious.

Students or staff who have a positive TB skin test only (with a normal chest X-ray and no symptoms) do not have disease, are not contagious, and should not be restricted in any way.

School Screening for TB

Mass screening of children for tuberculosis is not recommended. This is a new revision of the TB policy. The new recommendation is to screen children for TB with a questionnaire(see TB addendum at end of this chapter) to determine if they are high risk

(one "yes" answer on the questionnaire) and to refer children who are screened as high risk to their health care provider or to a public health clinic for further evaluation. Children **should** remain in school while the results of their evaluation are pending. This change reflects the current position and practice of:

- the Centers for Disease Control and Prevention
- the U.S. Department of Health & Human Services
- the American Academy of Pediatrics
- the Infectious Disease Society of America

Changing this practice will bring districts in line with current medical literature and practice, and will eliminate students and staff from experiencing an unnecessary and somewhat painful procedure. Other benefits include:

- Reduction of lost educational time
- Improved tracking of all students in district, not just new students
- Better customer service more welcoming environment instead of sending students away.

Nurses time reviewing questionnaires will be virtually the same as time currently spent tracking students and test related information (Texas Department of Health)²⁶.

Prevention Guidelines:

- Develop a policy, in consultation with the local health department, for responding to cases of communicable disease.
- Every effort should be made to adequately educate the community through a joint effort by the schools, local health department, and the Texas Department of Health, when a case of TB disease occurs within the school population.²⁷

Pediculosis²⁸

Pediculosis is an infestation of the hair and clothing (especially along the seams of inner surfaces) with adult lice, nymphs, and nits (eggs), which results in severe itching or excoriation (abrasion) of the scalp, or both. Secondary infection may occur with ensuing

regional lymphadenitis (inflammation of the lymph nodes), especially cervical. Crab lice usually infest the pubic area; they may also infest hair of the face (including eyelashes), axillae, and body surfaces. There are three types of lice: 1) *Pediculus humanus capitis*, the head louse; 2) *Pediculus h. corporis*, the body louse; and 3) *Phthirus pubis*, the crab louse.

Head Lice 29

Head lice are tiny insects (about 1/10 to 1/8 of an inch long) that live in human hair and feed on human blood. They multiply rapidly, laying little silvery-colored oval-shaped eggs (called nits) that they glue to the base of the hair close to the scalp. Although it is hard to see head lice, a person can see the nits if they look closely. Nits are most often found in the hair behind the ears and at the back of the head and neck. Nits should not be confused with dandruff. Dandruff can easily be flicked off the hair; nits cannot because they are firmly attached to individual hairs. One telltale sign of head lice is a persistent itching of the scalp, which is caused by the bite of the louse, and that is sometimes accompanied by infected scratch marks or what appears to be a rash. A secondary bacterial infection can occur, causing oozing or crusting. Swollen neck glands may also develop.

Anyone can get head lice. They are not a sign of being dirty and should not be considered a sign of an unclean house. Head lice are easily spread from person to person by direct contact and are often found in school settings. Head lice do not spread disease.

Head lice need human blood to survive. They are transmitted through direct contact with an infested person or with shared items, such as combs, brushes, towels, pillowcases, hats, headphones, other headgear, and clothing.

Treatment

The Texas Department of Health recommends the following treatment for head lice and nits:³⁰

- 1. Use an FDA-approved pediculicide shampoo/treatment. Follow the directions on the packaging exactly. Consult w/ a pharmacist or doctor regarding proper and safe use, possible side effects, etc.
- 2. Remove as many nits as possible with a nit comb (available at pharmacies or provided with the pediculicide).

- 3. Household treatment should be done simultaneously and should include soaking combs and brushes in pediculicide for 1 hour or in 120 degree water for 5-10 minutes. Bedding should be washed in 120 degree water. Non-washable items may be sealed in a plastic bag for 1 week or drycleaned. Furniture, carpets, and mattresses should be vacuumed thoroughly.
- 4. Treatment of hair should be repeated in 7 days (follow the manufacturer of the pediculicide's instructions) to ensure that if any nits have hatched, the lice are killed before they lay eggs.
- 5. Remember: There is no need to cut hair!

Prevention Guidelines:

- Develop a policy, in consultation with local health department, for responding to cases of infestation outbreaks.
- Learn to recognize nits, and regularly check students' heads and hair when there is a case of head lice diagnosed in the classroom. Teach parents to recognize nits and to check family's hair periodically. Because outbreaks of head lice occur periodically in almost all schools and because parental concern may exceed the threat of head lice to health, this is a prime area for preventive education and information. A well-organized and prompt response to the first few cases can prevent a widespread problem and avoid the spread of misinformation.
- If a case is identified, follow recommended treatment procedures closely.
 If a parent finds nits, it should be reported to the school nurse, who can check close contacts.
- Remind students not to share combs, brushes, hair accessories, headphones, hats, helmets, towels, clothing, bedding, and so forth.³¹

Tinea Capitis (Ringworm Of The Scalp)³²

Tinea and ringworm are general terms used to describe various fungal diseases that involve the scalp, body, feet, and groin. There are six types of tinea, one of which is tinea capitis, ringworm of the scalp.

This fungal disease occurs most commonly in children 3 to 9 years of age. All tinea infections are transmissible as long as the fungus is present in the infected area. Viable fungus may persist on contaminated materials for long periods.

Treatment

An antifungal ointment is typically applied to the skin for several weeks; occasionally, oral antifungal medicine is prescribed.

Prevention Guidelines:

- Develop a policy, in consultation with local health department, for responding to cases of communicable disease.
- Keep the environment as clean, dry, and cool as possible since ringworm fungi grow easily on moist, warm surfaces.
- Follow general cleanliness and hand washing guidelines.
- Keep affected areas of the body loosely covered with gauze, bandage, or clothing to prevent shedding of infected scales.
- Students and staff should be discouraged from sharing ribbons, combs, and brushes.³³

Exclusion from School

A student may return to school after being excluded for communicable disease by submitting a physician's note stating that the student does not currently have signs or symptoms of a communicable disease or that the disease is not communicable in a child-care or school setting (25 Texas Administrative Code §97.7(d)) or by readmission criteria as established by the commissioner of health (see below). The criteria for exclusion and re-admission for communicable conditions are listed below and can also be found in 25 Texas Administrative Code §97.7(b):

- 1. **Amebiasis**—exclude until treatment is initiated
- 2. **Campylobacteriosis**—exclude until diarrhea and fever subside
- Chickenpox—exclude until after seven days from onset of rash, except in the
 case of immunocompromised individuals who should not return until all blisters
 have crusted over (may be longer than seven days)
- 4. **Common cold**—exclude until fever subsides

- Conjunctivitis, bacterial and/or viral—exclude until written permission and/or permit is issued by a physician or local health authority
- 6. **Fever**—exclude until fever subsides
- 7. **Fifth disease (erythema infectiosum)**—exclude until fever subsides
- 8. **Gastroenteritis, viral**—exclude until diarrhea subsides
- 9. **Giardiasis**—exclude until diarrhea subsides
- 10. **Head lice (pediculosis)**—exclude until one medicated shampoo or lotion treatment has been given
- 11. **Hepatitis, viral, Type A**—exclude until one week after onset of illness
- 12. **Impetigo**—exclude until treatment has begun
- 13. **Infectious mononucleosis**—exclude until physician decides or fever subsides
- 14. **Influenza**—exclude until fever subsides
- 15. Measles (rubeola)—exclude until four days after rash onset. In the case of an outbreak, unimmunized children should also be excluded for at least two weeks after last rash onset occurs.
- 16. **Meningitis, bacterial**—exclude until written permission and/or permit is issued by a physician or local health authority
- 17. **Meningitis, viral**—exclude until fever subsides
- 18. **Mumps**—exclude until nine days after the onset of swelling
- 19. **Pertussis (whooping cough)**—exclude until completion of five days of antibiotic therapy
- 20. **Ringworm of the scalp**—exclude until treatment has begun
- 21. **Rubella** (**German measles**)—exclude until seven days after rash onset. In the case of an outbreak, unimmunized children should be excluded for at least three weeks after last rash onset occurs.
- 22. **Salmonellosis**—exclude until diarrhea and fever subside
- 23. **Scabies**—exclude until treatment has begun
- 24. **Shigellosis**—exclude until diarrhea and fever subside
- 25. **Streptococcal sore throat and scarlet fever**—exclude until 24 hours from time antibiotic treatment was begun and fever subsided
- 26. **Tuberculosis, pulmonary**—exclude until antibiotic treatment has begun and a physician's certificate or health permit obtained

Dermatology: Common Childhood Diseases Associated with Rashes^{34,35}

Disease	Etiology	Age	Incubation (days)/Season	Rash Morphology	Treatment/ Prevention	Comments
				and Features		
Scarlet Fever	Group A Streptococcus	School age	1-4 fall, winter, spring	Diffuse, erythematous, "sandpaper" rash; often begins on abdomen, spreads to face,	Penicillin	Transmitted by direct contact/droplets; contagious from 24 h before onset of symptoms until
				neck and extremities; blanches; lasts for 2-7 days		2-3 weeks after or on antibiotics for 24 h
Meningococcemia	Neisseria meningitides	Any (<5 years)	5-15 winter, spring/follows influenza epidemic	Erythematous, nonconfluent, discrete papules progressing to petechiae, purpura, ecchymosis on trunk, extremities, palms and soles	Hospitalize; ceftriaxone; cefotaxime	Transmitted by close, prolonged contact. Treat contacts with Rifampin; vaccine available
Measles (rubeola)	Measles virus	Infants, adolescents	10-12 winter, spring	Confluent, reddish-brown, maculopapular rash; begins on face, spreads to trunk; lasts 3-6 days; will be toxic in appearance; Koplik spots in mouth; also, photophobia, cough, coryza, conjunctivitis	Immunization	Communicable from 2-4 days before appearance of rash until 2-5 days after onset of symptoms
Rubella	Rubella virus	Infants, young adults	14-21 winter, spring	Discrete, nonconflluent, rose-colored macules and papules; begins on face and spreads downward; lasts 1-3 days	Immunization	Contagious from 1 week before onset of symptoms until rash disappears; transmitted by respiratory droplets

Disease	Etiology	Age	Incubation (days)/Season	Rash Morphology and Features	Treatment/ Prevention	Comments
Roseola (sixth disease)	Human herpesvirus-6	Infants (6 mo2 years)	5-15 any	Discrete macules on trunk, neck; sudden onset of rash following high fever for 3-4 days; lasts .5-2 days	None	Mode of transmission unknown; also cervical, occipital lymphadenopathy
Fifth disease (erythema `infectiosum)	Parvovirus B19	Prepubertal children, school teachers	5-15 winter, spring	Begins with erythema to cheeks ("slapped-cheek" appearance); then lacy, reddishpink, reticulated, flat rash to trunk and extremities; lasts 2-4 days; may recur 2-3 weeks later; rash may appear 3-7 days after prodrome	None	Transmitted by respiratory droplets; also, prodrome of headache, malaise, myalgia; often afebrile; once rash is present, no longer contagious
Chickenpox (varicella)	Varicella- zoster virus	1-14 years	late fall, winter, early spring	Pruritic papules, vesicles, and crusts; appear in crops so present in various stages; distributed on trunk, then face and extremities; lasts 7-10 days	Vaccine available; VZIG for immune compromised; Antipyretics, antipruritics, Aveeno baths, good hygiene to prevent secondary skin infection	Transmitted by respiratory droplets; usually febrile; contagious 1-2 days before rash appears until all lesions crusted over; may recur years later in dermatomal distribution (shingles)
Enteroviruses	Coxsackie virus, echo- virus, others	Infants, young children	4-6 summer, fall	Hand-foot-mouth (coxsackie virus) vesicles in those locations. Others, nonspecific, usually finenonconfluent, blanching macular or maculopapular rash; lasts 3-7 days	None	Rash may appear with fever or after defervescence; rarely petechial, urticarial or vesicular

Disease	Etiology	Age	Incubation (days)/Season	Rash Morphology and Features	Treatment/ Prevention	Comments
Kawasaki syndrome	Unknown	Children <5 years	Variable	Rash may be of various forms, (maculopapular, erythema multiforme, or scarlitiniform) with accentuation in the groin area	Hospitalize; aspirin therapy, IVIG; cardiology consult	Fever plus 4 of following 5 is diagnostic: Fever ≥ 104 for 5 days; bulbar conjunctivitis; polymorphous rash; indurative edema and erythema of hands or feet with desquamation; cracked, fissured lips, strawberry tongue; cervical lymphadenopathy

Sources:

- 1. Lembo, R.M. (1996). Fever and Rash. In Kliegman, R. M. (Ed.), <u>Practical Strategies in Pediatric Diagnosis and Therapy</u> (pp. 934-937, 944-945). Philadelphia, W.B. Saunders.
- 2. The Merck Manual, Table 265-8 Ch. 265 Childhood Infections. At: www.merck.com/pubs/mmanual/tables/265t68.htm (July 16, 2001).

Hepatitis Chart

	Hepatitis A ¹	Hepatitis B ²	Hepatitis C ³	Hepatitis D ⁴	Hepatitis E ⁵
WHAT IS IT?	A virus causing inflammation of the liver, it does not lead to chronic disease.	A virus causing inflammation of the liver, it can cause liver cell damage leading to cirrhosis and cancer.	Most common bloodborne viral infection in the US; 60% to 70% develop chronic hepatitis; cirrhosis develops in 10% to 20% with chronic hepatitis C over 20-30 yrs; hepatocellular carcinoma (liver cancer) in 1% to 5%;	A virus causing inflammation of the liver, it only infects those with hepatitis B.	A virus causing inflammation of the liver, it is rare in the US and is not associated with a chronic state.
INCUBATION	15 to 50 days. Average 30	4 to 25 weeks. Average	2 to 25 weeks, Avg 7-	4 to 26 weeks	Avg 40 days; Range 15-60 days
PERIOD HOW IS IT SPREAD?	days Fecal/oral route, through close person-to-person contact or ingestion of contaminated food and water.	8 to 12 weeks Contact with infected blood, seminal fluid and vaginal secretions. Sex contact, contaminated needles, tattoo/body piercing and other sharp instruments. Infected mother to newborn, human bite.	9wks. Contact with infected blood, contaminated IV needles, razors, tattoo/body piercing, and other sharp instruments. Infected mother to newborn. Not easily transmitted through sex	Contact with infected blood, contaminated needles. Sexual contact with hepatitis D infected person.	Transmitted primarily by the fecal-oral route. Fecally contaminated drinking water is the most commonly documented vehicle of transmission. Person-to-person transmission is uncommon., nosocomial transmission presumably by person-to-person contact, has occurred. Virtually all cases in the US have been reported among travelers returning from high HEV -endemic areas.
SYMPTOMS	Abdominal pain, anorexia, dark urine, fever, nausea, vomiting, diarrhea, fatigue, jaundice.	May have no symptoms. Some people have mild flu-like symptoms, dark urine, light stools, jaundice, fatigue, fever.	Same as Hepatitis B	Same as Hepatitis B	Similar to those of other types of viral hepatitis and include abdominal pain anorexia, dark urine, fever, hepatomegaly, jaundice, malaise, nausea, and vomiting. Other less common symptoms include arthralgia, diarrhea, pruritus, and urticarial rash.
TREATMENT OF CHRONIC DISEASE	No chronic disease	Interferon effective in up to 45% of those treated	.A combination of alpha- interferon and ribavirin currently is the most effective	Interferon effective with varying success.	No chronic disease
VACCINE	Two doses to those over 2 years	Three doses to anyone	None	None	None

	Hepatitis A ¹	Hepatits B ²	Hepatitis C ³	Hepatitis D ⁴	Hepatitis E ⁵
WHO IS AT RISK?	Household or sexual contact with an infected person or living in an area with outbreak. Travelers to developing countries, homosexual and bisexual men, IV drug users.	Infant born to infected mother, those having sex with infected person or multiple partners, IV drug users, emergency responders, healthcare workers, homosexual and bisexual men, hemodialysis patients.	Persons who ever injected illegal drugs, including those who injected once or a few times many years ago; persons who had a blood transfusion or organ transplant before July 1992; or clotting factor concentrates before 1987; hemodialysis patients; children born to HCV-positive women; healthcare workers after needlesticks, sharps, or mucosal exposures to HCV-positive blood; persons with evidence of chronic liver disease.	IV drug users, homosexual and bisexual men, those who have sex with hepatitis D infected person	Most commonly recognized to occur in large outbreaks, also accounts for >50% of acute sporadic hepatitis in both children and adults in some high endemic areas. Risk factors for infection among persons with sporadic cases of hepatitis E have not been defined.
PREVENTION	Immune globulin, or vaccination. Wash hands after using toilet. Clean surfaces contaminated with feces such as infant changing tables.	Vaccination and safe sex, clean up infected blood with bleach and wear protective gloves. Avoid sharing razors and toothbrushes.	Safe sex. Clean up spilled blood with bleach. Wear gloves when touching blood. Avoid sharing razors or toothbrushes.	Hepatitis B vaccine to prevent infection. Safe sex.	Avoid drinking or using contaminated water. Avoiding drinking water (and beverages with ice) of unknown purity, uncooked shellfish, and uncooked fruits or vegetables that are not peeled or prepared by the traveler. IG prepared from plasma collected in non-HEV-endemic areas is not effective in preventing clinical disease during hepatitis E outbreaks and the efficacy of IG prepared from plasma collected in HEV-endemic areas is unclear.

^{1, 2, 4} Palmer, E. (1998). Hepatitis found in several forms. TDH Pulse Monitor. Austin, TX: Texas Department of Health; ³ CDC, (2001) Hepatitis C, Division of Viral Hepatitis, National Center for Infectious Diseases. [On-line] Available:

http://www.cdc.gov/ncidod/diseases/hepatitis/e/index.htm

5CDC, (2001) Hepatitis E, Division of Viral Hepatitis, National Center for Infectious Diseases. [On-line] Available: http://www.cdc.gov/ncidod/diseases/hepatitis/e/index.htm

The following chart is available from the Texas Department of Health at: www.tdh.state.tx.us/ideas/report/chichart.pdf (July 14, 2001).

Communicable Disease Chart for Schools and Child-care Centers

Condition	Incubation Period	Signs and Symptoms	Exlusion from Attendance	Readmission Criteria ³	Reportable Disease	Notes for Prevention and Treament ⁴
AIDS/HIV Infection	Variable	Weight loss, generalized swelling of the lymph nodes, failure to thrive, chronic diarrhea, tender spleen and liver. Individuals with HIV infection may be asymptomatic.	No, unless a physician determines that a severe or chronic skin eruption or lesion which cannot be covered poses a threat to others. The child's parents and physician should be advised of measles, rubella, or chickenpox outbreaks in the school. These may pose a health threat to the immunosuppressed child.		Yes, but schools are not required to report.	Teach importance of handwashing. When cleaning up spills of blood or body fluids, wear gloves and use a suitable disinfectant. Educate adolescents about viral transmission through sexual contact and sharing of equipment for injection.
Amebiasis	Variable, days to months	Intestinal disease may vary from asymptomatic to acute dysentery with bloody diarrhea, fever, and chills.	Yes	After treatment has begun.	Yes, call (800) 705-8868.	Adequate treatment is necessary to prevent/ eliminate extraintestinal disease. Teach importance of handwashing. Relatively uncommon in the United States, but can be acquired in developing countries. Spread by person-to-person contact or through food and/or drink.
Campylobacteriosis	1-10 days, usually 3-5 days	Sudden onset of diarrhea, abdominal pain, fever, malaise, nausea, and vomiting.	Yes	After diarrhea and fever subside.	Yes, call (800) 705-8868.	Teach importance of handwashing. Frequently a foodborne infection.
Chickenpox (varicella)	2-3 weeks, commonly 13-17 days	Fever and vesicular rash that may appear first on head, then spread to body. Usually two or three crops of new blisters that heal, sometimes leaving scars.	Yes	Seven days after onset of rash; immuno- compromised individuals should not return until all blisters have crusted over.	Yes, call (800) 252-9152.	Vaccine available.
Common cold	1-3 days	Runny nose, watery eyes, fatigue, coughing, and sneezing.	No, unless fever is present (see Fever).	After fever subsides.	No	Teach importance of handwashing and covering mouth when coughing or sneezing. Colds are caused by viruses; antibiotics are not indicated.
Conjunctivitis (bacterial or viral)	Bacterial: 1-3 days Viral: 12 hours to 12 days	Red eyes, usually with some discharge or crusting around eyes.	Yes	See footnote 2	No	Teach importance of handwashing. Allergic conjunctivitis is not contageous.

Condition	Incubation Period	Signs and Symptoms	Exlusion from Attendance	Readmission Criteria ³	Reportable Disease	Notes for Prevention and Treament ⁴
Cryptosporidiosis	1-12 days, usually 7 days	Diarrhea, which may be profuse and watery, preceded by anorexia and vomiting in children. The diarrhea is associated with abdominal pain. Malaise, fever, nausea, and vomiting occur less often. Infection may be asymptomatic.	Yes	After diarrhea subsides.	Yes	Teach importance of handwashing.
Cytomegalovirus (CMV) infection	Unknown under normal circum- stances	Usually asymptomatic. Congenital CMV infections may result in hearing loss, pneumonia, eye inflammation, and growth and/or mental retardation.	No		No	Teach importance of handwashing. Avoid direct contact with urine, saliva, or other infectious secretions.
Escherichia coli (E. coli) infection	10 hours to 6 days in most cases; for E. coli O157:H7, usually 3-5 days	Profuse, watery diarrhea, sometimes with blood and/or mucous, and abdominal pain. Fever and vomiting may occur. Some strains (such as E. coli O157:H7) may cause hemolytic uremic syndrome (HUS), resulting in kidney damage.	Yes	After diarrhea and fever subside.	Yes, if <i>E. coli</i> O157:H7 strain. Call (800) 705- 8868	Teach importance of handwashing. Usually a foodborne infection.
Fever		Oral temperature of 38°C (100.4°F) or greater.	Yes	After fever subsides.	No	
Fifth disease (erythema infectiosum)	Variable: 4 - 20 days to develop- ment of rash	Redness of the cheeks and body. Fever does not usually occur.	No, unless fever is present.	After fever subsides.	No	Individual should be seen by a physician to rule out measles or rubella.
Gastroenteritis, viral	Variable, usually 1-3 days	Nausea and diarrhea. Fever does not usually occur.	Yes	After diarrhea subsides.	No	Teach importance of handwashing.
	days					
Giardiasis	5-25 days or longer, usually 7-10 days	Gradual onset of nausea, bloating, and diarrhea. May recur several times over a period of weeks.	Yes	After diarrhea subsides.	No	Treatment is recommended. Teach importance of handwashing. Can spread quickly in child- care facilities.

Condition	Incubation Period	Signs and Symptoms	Exlusion from Attendance	Readmission Criteria ³	Reportable Disease	Notes for Prevention and Treament ⁴
Head lice	Eggs hatch in 7-10 days	Itching and scratching of scalp. Pinpoint-sized white eggs (nits) that will not flick off the hair shaft.	Yes	After one medicated shampoo or lotion treatment has been given.	No	Second shampoo or lotion treatment is recommended in 7-10 days. Teach importance of not sharing combs, brushes, hats and coats.
Hepatitis A	15-50 days, with an average of 30 days	Abrupt onset of fever, malaise, anorexia, nausea and vomiting, and abdominal pain; jaundice, dark urine, or diarrhea may or may not be present.	Yes	One week after onset of illness.	Yes, call (800) 705-8868	Vaccine available. Teach importance of handwashing. Immune globulin should be given to household contacts. If more than one case occurs in a child-care facility, immune globulin should be considered for all contacts at the facility.
Hepatitis B	2-6 months	Gradual onset of fever, fatigue, nausea, or vomiting, followed by jaundice. Frequently asymptomatic.	No		Yes, call (800) 705-8868	Vaccine available. Teach importance of handwashing. When cleaning up spills of blood or body fluids, wear gloves and use a suitable disinfectant. Educate adolescents about viral transmission through sexual contact and sharing of equipment for injection. Teach importance of not sharing razors or toothbrushes.
Herpes simplex (cold sores)	First infection, 2- 12 days	Blisters on or near lips that open and become covered with a dark crust. Recurrences are common.	No		No	Teach importance of good hygiene. Avoid direct contact with sores.
Impetigo	Variable, usually 4-10 days	Blisters on skin that open and become covered with a yellowish crust. Fever does not usually occur.	Yes	After treatment has begun.	No	Keep lesions covered. Teach importance of handwashing and keeping fingernails clean.
Influenza	1-5 days	Rapid onset of fever, headache, sore throat, cough, chills, lack of energy, and muscle aches.	Yes	After fever subsides.	No	Vaccine available and recommended for children with certain chronic diseases. Antiviral therapy available for patients with influenza type A.
Measles (rubeola)	7-14 days	Runny nose, watery eyes, fever, and cough. A blotchy red rash, which usually begins on the face, appears between the third and seventh day.	Yes	Four days after onset of rash. In an outbreak, unimmunized children should be excluded for at least two weeks after last rash onset	Yes, immediately call (800) 252- 9152	Vaccine available.

Condition	Incubation Period	Signs and Symptoms	Exlusion from Attendance	Readmission Criteria ³	Reportable Disease	Notes for Prevention and Treament ⁴
Meningitis, bacterial	2-10 days	Sudden onset of high fever and headache, usually with vomiting.	Yes	See footnote 2.	Yes, call (800) 705-8868	Prophylactic antibiotics may be recommended for family members and close contacts at a child-care facility.
Meningitis, viral	2-10 days	Sudden onset of fever and headache, usually with vomiting.	No, unless fever is present (see Fever)	When fever subsides.	Yes, call (800) 705-8868	Teach importance of handwashing.
Meningococcal infections (meningitis, meningococcemia)	Varies from 2-10 days, usually 3-4 days	Sudden onset of fever, intense headache, nausea and often vomiting, stiff neck, and frquently a reddish or purplish rash on the skin or mucous membranes.	Yes	See footnote 2.	Yes, immediately call (800) 705- 8868	Prophylactic antibiotics may be recommended for family members and close contacts at a child-care facility. In an outbreak, vaccine may be recommended for persons likely to become exposed.
Mononucleosis, infectious	30-50 days	Variable. Infants and young children generally are asymptomatic. Symptoms, when present, include fever, fatigue, swollen lymph nodes, and sore throat.	Yes	When a physician decides or after fever subsides. Some children with fatigue may not be physically able to return to school until symptoms subside.	No	Minimize contact with saliva and nasal discharges. Teach importance of handwashing.
Mumps	12-25 days	Swelling over jaw in front of one or both ears. Pain in cheeks made worse by chewing.	Yes	After nine days from onset of swelling.	Yes, call (800) 252-9152	Vaccine available.
Otitis	Variable	Fever, ear pain. May follow respiratiory illness.	No, unless fever is present (see Fever)	After fever subsides.	No	Antbiotics are only indicated for acute otitis media.
Pertussis (whooping cough)	7-21 days	Low-grade fever, runny nose, and cough lasting about two weeks, followed by paroxysmal coughing spells and "whoop" on inspiration.	Yes	After completion of five days of antibiotic therapy.	Yes immediately call (800) 252- 9152.	Vaccine available. Unimmunized contacts should be immunized and receive antibiotic prophylaxis.
Pharyngitis, nonstreptococcal	Variable	Fever, sore throat, often with large, tender lymph nodes in neck.	No, unless fever is present (see Fever)	After fever subsides.	No	Nonstreptococcal pharyngitis is caused by a virus; antibiotics are not indicated.
Pinworms	Variable, may be as long as 3-6 weeks	Perianal itching.	No		No	Treatment recommended. Teach importance of handwashing.

Condition	Incubation Period	Signs and Symptoms	Exlusion from Attendance	Readmission Criteria ³	Reportable Disease	Notes for Prevention and Treatment ⁴
Ringworm of the body	4-10 days	Slowly spreading, flat, scaly, ring- shaped lesions on skin. The margins may be reddish and slightly raised.	No		No	Treatment is recommended. Keep lesions covered.
Ringworm of the scalp	10-21 days	Slowly spreading, balding patches on scalp with broken off hairs.	Yes	After treatment has begun.	No	Teach importance of not sharing combs, brushes, hats, and coats.
Rubella (German measles)	14-23 days, usually 16-18 days	Cold-like symptoms. Swollen, tender glands at the back of the neck. Changeable pink rash on face and chest.	Yes	Seven days after onset of rash. In an outbreak, unimmunized children and pregnant women should be excluded for at least three weeks after rash onset.	Yes, call (800) 252-9152 within one working day	Vaccine available.
	ujiji bidi					
Salmonellosis	1-3 days	Sudden onset of fever, abdominal pain, diarrhea, and sometimes vomiting.	Yes	After diarrhea and fever subside.	Yes, call (800) 705-8868	Teach importance of handwashing. Frequently a foodborne infection.
Scables	First infection: 2-6 weeks Repeat infection: 1-4	Small, raised red bumps or blisters on skin with severe itching.	Yes	After treatment has begun,	No	Teach importance of not sharing combs, brushes, hats, and coats.
	days					
Sinus infection	Variable	Fever, headache, greenish to yellowish mucous for more than	No		No	Antibiotics are only indicated for long-lasting or severe sinus infections.
		one week				
Shigellosis	1-7 days	Sudden onset of fever, vomiting, and diarrhea which may be bloody.	Yes	After diarrhea and fever subside.	Yes, call (800) 705-8868	Teach importance of handwashing. Can spread quickly in child-care facilities.
Streptococcal sore throat and scarlet fever	1-3 days	Fever, sore throat, often with large, tender lymph nodes in neck. Scarlet fever-producing strains of bacteria cause a fine, red rash that appears 1-3 days after onset of sore throat.	Yes	Twenty-four hours after antibiotic treatment has begun and fever subsides.	No	Teach importance of covering mouth when coughing or sneezing. Streptococcal sore throat can only be diagnosed with a laboratory test.

Condition	Incubation	Signs and	Exlusion from	Readmission	Reportable	Notes for Prevention
	Period	Symptoms	Attendance	Criteria ³	Disease	and Treatment ⁴
Tuberulosis, pulmonary	4-12 weeks	Gradual onset of fatigue, anorexia, fever, failure to gain weight, and cough.	Yes	After antibiotic treatment has begun and a physicain's certificate or health permit is obtained.	Yes, call (800) 705-8868 within one working day.	All classroom contacts should have TB skin tests. Antibiotic prophylaxis recommended for newly positive reactors. Call the TB control program at your local health department for contact testing.

^{&#}x27;The major criterium for exclusion from attendance is the probability of spread from person to person. A child may have a nonexcludable illness yet require care at home or in a hospital.

²Children excluded from a school or child-care facility for this communicable disease may be readmitted with a note from a physician or the local health authority.

³A school or child-care facility administrator may require a note from a parent or physician before readmission regardless of the reason for the absence.

^{*}Children should not be given aspirin for symptoms of any confirmed or suspected viral disease without consulting a physician.

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Health Services

Student Name	
Campus	
1	
Parent Signature	
Date	

This questionnaire is about tuberculosis. Tuberculosis can be transmitted to children by adults who live with or spend a great deal of time with them. Tuberculosis is transmitted by a person who has tuberculosis to another person through airborne droplets that are coughed or sneezed into the air and then breathed in by the child. This transmission of infection is more likely to occur when the child and the infectious person spend a lot of time together in a closed environment such as a car, a small room, or other similar situations.

Adults who have tuberculosis will often have the following symptoms: cough for more than two weeks duration, loss of appetite, weight loss of ten or more pounds over a short period of time, fever, chills and night sweats.

Children with tuberculosis frequently do not have symptoms. A person can have a tuberculosis infection and not have active tuberculosis.

- Not everyone who coughs has tuberculosis.
- TB can cause (low grade) fever of long duration, unexplained weight loss, failure to maintain adequate growth in children, weakness, chest pain, a bad cough, hoarseness, and/or coughing up blood.
- Tuberculosis is preventable and treatable.
- Children with active TB often do not show signs of illness. Infants are more likely to have symptoms.

Date of student's last TB skin test (if known)
Results

	YES	NO
Has anyone in your family had tuberculosis?		
Do you know of any situation where your child was		
around an adult who has been diagnosed or		
suspected of having TB?		
Has your child been around anyone who has fever of		
long duration, unexplained weight loss, weakness,		
chest pain, a bad cough, hoarseness or coughing up		
blood?		
Has your child had any of the above problems?		
To your knowledge, has your child had close contact		
with anyone who:		
has been in a homeless shelter?		
is/has been in jail or prison?		
is/has been an intravenous (IV) drug user?		
is HIV infected?		

TB Addendum	II

Has your child recently moved to the U.S. from a	
foreign country or traveled to a foreign country? If	
yes, which country?_	

Servicios de salud

Nombre del estudiante	
Escuela	
Firma de uno de los padres	
Fecha	

Este cuestionario es sobre tuberculosis. La tuberculosis pueden contagiarla los adultos a los niños si viven o pasan mucho tiempo con ellos. Se trasmite de una persona que la tiene a otra, mediante gotitas llevadas por el aire cuando uno tose o estornuda y luego el niño(a) las respira. Es más probable que esta transmisión o infección se produzca cuando el niño(a) y la persona infectada pasan mucho tiempo juntos en un ambiente cerrado, como un auto, un cuarto pequeño o alguna otra situación parecida.

Los adultos con tuberculosis tendrán a menudo estos síntomas: tos durante más de dos semanas, pérdida de apetito, y de diez o más libras de peso en poco tiempo, fiebre, ratos de frío y sudores nocturnos.

Los niños con tuberculosis frecuentemente no tienen síntomas. Una persona puede tener la infección y no padecer tuberculosis activa.

- No todo el que tose tiene tuberculosis.
- La TB puede causar fibre (pocos grados) mucho tiempo, pérdida inexplicable de peso, el no poder mantener un crecimiento adecuado en niños, debilidad, dolor del pecho, una tos perniciosa, ronquera y/o toser sangre.
- La tuberculosis puede prevenirse y tratarse.
- Los niños con TB activa a menudo no dan señales del mal. Es más probable que haya síntomas en los infantes.

Fecha de	la última prueba cutanea de TB (si se
sabe)	Resultados

	SÍ	NO
¿Alguien de su familia ha tenido tuberculosis?		
¿Sabe de alguna situación en que su hijo(a) haya estado con un adulto al		
que se ha diagnosticado o se sospecha que tenga tuberculosis?		
¿Ha andado su niño(a) en torno a alguien con fiebre de mucho tiempo,		
pérdida inexplicable de peso, debilidad, dolor del pecho, tos perniciosa,		
ronquera o que haya tosido sangre?		
¿Ha tenido su niño(a) alguno de los problemas anteriores?		
Que usted sepa, ¿ha tenido su niño(a) contacto con alguien que:		
haya estado en un refugio para gente sin hogar?		
esté o haya estado en la cárcel o en prisión?		
sea o haya sido usuario de drogas por (IV) vía intravenosa?		
esté infectado con el HIV (virus de inmunodeficiencia adquirida)?		
haya venido recientemente a los Estados Unidos de un país extranjero o		
que haya viajado a él? Si es así, ¿de qué país se trata?		