



NEW HAMPSHIRE DEPARTMENT OF HEALTH AND HUMAN SERVICES

Disease Handbook

for

Childcare Providers

**New Hampshire Department of Health and Human Services
Division of Public Health Services
Bureau of Infectious Disease Control
29 Hazen Drive
Concord, NH 03301-6527**

Tel: 603-271-4496

Fax: 603-271-0545

<https://www.dhhs.nh.gov/dphs/cdcs/handbook.htm>

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Introduction

The New Hampshire Division of Public Health Services, Bureau of Infectious Disease Control, prepared this manual for childcare providers and parents/guardians of children attending childcare. The disease fact sheets, which comprise most of this document, are intended to familiarize people with specific infectious disease problems commonly encountered in childcare. The fact sheets can be easily photocopied for distribution to parents and guardians.

In the event that any of the illnesses mentioned in this manual occur among children attending childcare, parents or guardians should be promptly notified by the childcare provider and urged to contact their family physician to obtain specific medical care advice.

Childcare directors should immediately notify the Bureau of Infectious Disease Control concerning any unusual disease occurrence in their facilities so that appropriate disease-control measures may begin promptly. To contact the Bureau of Infectious Disease Control call (603) 271- 4496.



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New Hampshire Department of Health and Human Services
Division of Public Health Services
Bureau of Infectious Disease Control

The Department of Health and Human Services' Mission is to join communities and families in providing opportunities for citizens to achieve health and independence.



**NH Division of Public Health Services
Immunizations Required for Childcare Attendance**

Vaccine	Recommended Schedule	Comment
DTaP (Diphtheria, Tetanus, a cellular pertussis)	2 months, 4 months, 6 months, 15-18 months, 4-6 years.	Age appropriately required for childcare attendance per routine childhood vaccination schedule. If the child has a contraindication to the pertussis vaccine they would receive a vaccine called DT which does not contain the pertussis antigen.
IPV (Polio)	2 months, 4 months, 6-18 months, 4-6 years	Age appropriately required for Childcare attendance per routine childhood vaccination schedule.
Hib (Haemophilus influenzae Type b)	2 months, 4 months, 6 months, 12-15 months	Age appropriately required for childcare attendance. If the child starts the series late or is behind, fewer doses may be required. If the child is unvaccinated, one dose at 15 months or older is adequate. The Hib vaccine is not required after 59 months of age.
MMR (measles, mumps, rubella)	12-15 months, second dose 4-6 years of age.	Age appropriately required for childcare attendance per routine childhood vaccination schedule. 2 nd dose must be at least 1 month after dose one.
Varicella (chickenpox)	12-15 months, second dose 4-6 years of age.	Age appropriately required for childcare attendance per routine childhood vaccination schedule. 2 nd dose must be at least 3 months after dose one (for children ages 12 months to 12 years). A laboratory test to confirm immunity is acceptable.
Hep B (hepatitis-B)	Birth, 1-2 months, 6-18 months.	Age appropriately required for childcare attendance.

Immunizations Recommended for Childcare Attendance

Vaccine	Recommended Schedule	Comment
Hep A (Hepatitis A vaccine)	12 months and at 18 months	Age appropriate recommended for childcare attendance per routine childhood vaccination schedule.
Influenza vaccine	6-months and older, one dose annually.	Recommended annually. If it's the first time receiving vaccine, two doses are required..
PCV-13 (pneumococcal)	2 months, 4 months, 6 months, 12-15 months.	Age appropriately recommended for childcare attendance, per routine childhood vaccination schedule. If the child starts the series late or is behind, fewer doses may be required. Recommended for certain high risk children over 59 months.
Rotavirus	Rotarix (RV1) 2 months, 4 months. <u>OR</u> Rotateq (RV5) 2 months, 4 months, 6 months.	Age appropriate recommended for childcare attendance per routine childhood vaccination schedule.

Recommended Immunization Schedule for children aged 18 years or younger approved by the Advisory Committee on Immunization Practice (ACIP), the American Academy of Pediatrics (AAP), and the American Academy of Family Practice (AAFP).

If you have any questions about a child's compliancy, please call the child's primary care provider or the New Hampshire Immunization Program (603-271-4482)

Additional Immunization Resources for Child Care Providers:
<https://www.dhhs.nh.gov/dphs/immunization/ccproviders.htm>



DISEASES THAT ARE PREVENTABLE WITH VACCINES

This group of diseases includes measles, mumps, rubella, varicella (chickenpox), polio, pertussis, diphtheria, tetanus, Haemophilus influenza type b, and 7 types of streptococcus pneumoniae, hepatitis B and hepatitis A. Prior to immunization programs, these diseases were a major cause of widespread illness, often with permanent medical complications and even death. Most of these diseases were a problem especially in children, although adults were also affected.

Who gets these diseases?

Some people believe that these diseases are no longer a problem in the United States or that children can't get them anymore. **This is not true!** These diseases are still circulating. Cases of these diseases do occur, particularly in unimmunized or inadequately immunized children and adults. Measles staged a strong comeback in the U.S. in the late eighties and early nineties in unimmunized preschool children and also in high school and college age students. From 1989-1991 there were 123 measles associated deaths reported. Forty-nine percent of these deaths were in children less than 5 years of age. Ninety percent of the fatal cases had no history of vaccination.

Children in childcare settings and their adult caretakers are especially at risk. This is because the children may be too young to be fully immunized and because the close contact that occurs in childcare facility allows easy spread of many diseases.

In this document, each vaccine preventable disease is presented briefly. Although it is unlikely that you will ever see a case of most of these diseases, it is **very important** that you be aware of them and of your vital role in preventing their spread. For further information, please contact your healthcare provider.

How can the spread of these diseases be prevented?

1. All children in daycare must be immunized appropriately for their age, in accordance with the NH State Law: RSA 141:C-20. Specific information about immunization schedules can be found on the Immunization Requirements Section in this handbook and on the appropriate fact sheets.
2. It is recommended that all adults working in a childcare setting, including volunteers, should have proof of immunization or immunity to the following vaccine-preventable diseases: diphtheria, tetanus, pertussis, measles, mumps, rubella, hepatitis B, varicella, and polio. Although evidence of such immunization or immunity is not required for childcare workers, they are strongly recommended.
3. If a documented case of measles, mumps, rubella, polio, diphtheria, tetanus, varicella or pertussis occurs in your childcare facility, you **must** notify the New Hampshire Division of Public Health Services, Bureau of Infectious Disease Control.. Their staff will assist you in starting any necessary identification and vaccination of susceptible children and adults. They will also instruct you on procedures for closely watching for any additional cases and for notifying the parents.

Acceptable evidence of immunization or immunity in adults can be provided in several ways, which vary by the age of the adult and the **specific disease**, as listed below:

DISEASES THAT ARE PREVENTABLE WITH VACCINES (cont).

Adult Vaccination Recommendations

Tetanus/diphtheria (Td) or tetanus, diphtheria, acellular pertussis (Tdap) – All adults need a Td booster every 10 years following the completion of the primary 3 dose series. A one-time dose of Tdap is now the vaccine of choice for any adult regardless of age who is due for a Td booster. Anyone who has close contact with infants less than 12 months of age should have the Tdap at least one month prior to contact. It is suggested an interval of 2 years or more since the last dose of Td, as the minimum interval prior to the administration of Tdap.

Measles

Born before 1957 (or) documentation of vaccination with at least two doses of live measles vaccine, with the first dose given on or after the first birthday and the second live dose at least 28 days from the first (or) laboratory evidence of immunity.

Mumps

Documentation of vaccination with live mumps vaccine on or after the first birthday (or) laboratory evidence of immunity (or) documentation of physician-diagnosed mumps is recommended.

Rubella

Documentation of vaccination with rubella vaccine on or after the first birthday (or) laboratory evidence of immunity is recommended. A history of rubella, without laboratory confirmation is **NOT** acceptable.

For women not immune, vaccination during pregnancy is **not** advised. Vaccine should be administered after delivery.

Varicella (Chickenpox)

- Written documentation of age appropriate vaccination,
- Anyone born in the United States before 1996,
- Laboratory evidence of immunity or laboratory confirmation of disease for anyone born after 1998.

Hepatitis B

Documentation of 3 doses of hepatitis B vaccine given at appropriate intervals (or) laboratory evidence of immunity is recommended.

Influenza

One dose of influenza vaccine is *highly* recommended annually for all childcare workers.



WHEN CHILDREN SHOULD BE EXCLUDED OR DISMISSED FROM A CHILDCARE SETTING

3.6.1 Management of Illness

A facility shall not deny admission to or send home a child because of illness unless one or more of the following conditions exist. The parent, legal guardian or other authorized by the parent shall be notified immediately when a child has a sign or symptom requiring exclusion from the facility, as described below: a) The illness prevents a child from participating comfortably in facility activities; b) The illness results in a greater care need than the childcare staff can provide without compromising the health and safety of the other children; or c) The child has any of the following conditions:

1. Temperature: Oral temperature 101 F or greater; rectal temperature 102 F or greater; axillary (i.e., armpit) temperature 100 F or greater, accompanied by behavior changes or other signs or symptoms of illness until medical evaluation indicates inclusion in the facility. Oral temperature shall not be taken on children younger than 4 years (or younger than 3 years if a digital thermometer is used). Only persons with specific health training shall take rectal temperature.
2. Symptoms and signs of possible severe illness (such as unusual lethargy, uncontrolled coughing, irritability, persistent crying, difficult breathing, wheezing, or other unusual signs), until medical evaluation allows inclusion.
3. Uncontrolled diarrhea, that is, increased number of stools, increased stool water, and/or decreased form that is not contained by the diaper, until diarrhea stops.

4. Vomiting illness (two or more episodes of vomiting in the previous 24 hours) until vomiting resolves or until a healthcare provider determines the illness to be non-communicable, and the child is not in danger of dehydration.
5. Rash with fever or behavior change, until a healthcare provider determines that these symptoms do not indicate a communicable disease.

Rationale:

Exclusion of children with many mild infectious diseases is likely to have only a minor impact on the incidence of infection among other children in the group. Thus, when formulating exclusion policies, it is reasonable to focus on the needs and behavior of the ill child and ability of staff in the out-of-home childcare setting to meet those needs without compromising the care of other children in the group.

Chicken pox, measles, rubella, mumps and pertussis are highly communicable illnesses for which routine exclusion of infected children is warranted. It is also appropriate to exclude children with treatable illnesses until treatment is received and until treatment has reduced the risk of transmission.

The presence of diarrhea, particularly in diapered children, and the presence of vomiting increase the likelihood of exposure of other children to the infectious agents that cause these illnesses. It may not be reasonable to routinely culture children who present with fever and sore throat or diarrhea. However, in some outbreak settings,

WHEN CHILDREN SHOULD BE EXCLUDED OR DISMISSED FROM A CHILDCARE SETTING

(cont.)

identifying infected children and excluding or treatment of them may be necessary.

Fever is defined as an elevation of body temperature above normal. The presence of fever alone has little relevance to the spread of disease and may or may not preclude a child's participation in childcare. The height of the fever does not necessarily indicate the severity of the child's illness. A child's over-exertion in a hot, dry climate may produce a fever. Life-threatening diseases, such as meningitis, cause a small proportion of childhood illness with fever. Generally, young infants show less fever with serious illness than older children. Infants and children older than 4 months should be excluded whenever behavior changes and/or signs or symptoms of illness accompany fever. Infants 4 months old or younger should be excluded when rectal temperature is 101 F or above, or axillary (i.e., armpit) temperature is 100 F or above, even if there has not been a change in their behavior.

It is unreasonable and inappropriate for childcare staff to attempt to determine which illnesses with fevers may be serious. The child's parents or legal guardians, with the help of their child's healthcare provider, are responsible for these decisions; therefore, parents should be informed promptly when their child is found to have a fever while attending childcare.

Excerpted from Caring For Our Children, National Health and Safety Performance Standards: Guidelines for Out-of-Home Child Care Programs, The American Public Health Association (Washington DC) and the American Academy of Pediatrics (Elks Grove Village, IL), 2011.



WHEN STAFF SHOULD BE EXCLUDED OR DISMISSED FROM A CHILDCARE SETTING

A facility should not deny admission to or send home a staff member or substitute with illness unless one or more of the following conditions exists. The staff member should be excluded as follows:

- a) Chickenpox, as directed by Bureau of Infectious Disease Control;
- b) Shingles, only if the lesions cannot be covered by clothing or a dressing until the lesions have crusted;
- c) Rash with fever or joint pain, until diagnosed not to be measles or rubella;
- d) Measles, as directed by the Bureau of Infectious Disease Control;
- e) Rubella, as directed by the Bureau of Infectious Disease Control;
- f) Diarrhea illness, nausea and /or vomiting three or more episodes of diarrhea during the previous 24 hours or blood in stools, until 48 hours after the resolution of symptoms unless vomiting is identified as a non-communicable condition such as pregnancy or digestive disorder or deemed non-infectious by a healthcare professional;
- g) Hepatitis A virus, as directed by the Bureau of Infectious Disease Control;
- h) Pertussis, as directed by the Bureau of Infectious Disease Control;
- i) Skin infections (such as impetigo), until 24 hours after treatment has been initiated;
- j) Tuberculosis, as directed by the Bureau of Infectious Disease Control and the Tuberculosis program;
- k) Strep throat or other streptococcal infection, until 24 hours after initial antibiotic treatment and end of fever;
- l) Head lice, from the end of the day of discovery until the first treatment;
- m) Scabies, until after treatment has been completed;
- n) Purulent conjunctivitis, defined as pink or red conjunctiva with white or yellow eye discharge, often with matted eyelids after sleep, and including eye pain or redness of the eyelids or skin surrounding the eye, until examined by a physician and approved for readmission;
- o) *Haemophilus influenzae* type b (Hib), until directed by the Bureau of Infectious Disease Control;
- p) Meningococcal infection, until directed by the Bureau of Infectious Disease Control;
- q) Respiratory illness, if the illness limits the staff member's ability to provide an acceptable level of childcare and compromises the health and safety of the children.
- r) There may be other communicable diseases that pose a threat to the public's health that are not specifically listed here for which it may be appropriate to restrict certain activities of cases, suspect cases, and close contacts until they are no longer infectious in consultation with the health department.

Childcare providers who have herpes cold sores should not be excluded from the childcare facility, but should:

- 1) Cover and not touch their lesions;
- 2) Carefully observe handwashing policies;
- 3) Refrain from kissing or nuzzling infants or children, especially children with dermatitis.

Excerpted from Care For Our Children, National Health and Safety Performance Standards: Guidelines for Out-Of-Home Childcare Programs, American Public Health Association, 2011.

Placeholder for “What Diseases Must Be Reported to Health Officials:

Should go to: <https://www.dhhs.nh.gov/dphs/cdcs/documents/reportablediseases.pdf>



Child Abuse

The NH Division for Children, Youth and Families (DCYF) is dedicated to assisting families in the protection, development, permanency and well being of their children and the communities in which they live. Child protection and family support services are provided by Child Protective Service Workers (CPSWs) in 12 District Offices throughout New Hampshire. Under certain circumstances, DCYF also provides voluntary services to families that request them. These are available to families that have not had a finding of abuse or neglect.

DCYF strives to protect children from abuse and neglect and to help families nurture their children into physically and emotionally healthy adults. The prevention and identification of child abuse and neglect is a community responsibility that depends on the cooperation of all community members. In situations where abuse, neglect or sexual abuse is suspected or if discussion with the family does not relieve concerns, then the Division for Children, Youth and Families should be contacted at **603-271-6562 or 1-800-894-5533 (In state only) 24 hours per day.**

If you suspect that a child is being abused or neglected, NH state law requires that you report your concerns to the DCYF Central Intake Unit immediately. Proof of abuse or neglect is not required before reporting. Early reporting often prevents greater harm to children and other family members. The same law that requires reporting (RSA 169-C) also states that any person who makes a report in good faith is immune from any civil or criminal liability. It is better to make your concerns known than to remain silent and possibly allow a child to be seriously harmed.



DIAPERING RECOMMENDATIONS

Changing diapers in a sanitary way is essential to prevent infectious organisms present in the stool from spreading. If the organisms, which cause infectious diarrhea, hepatitis-A, giardiasis and other illnesses, are accidentally ingested, the disease may be transmitted. You can help prevent illness by remembering the following guidelines as you diaper children.

Equipment Concerns For Diapering:

Changing area and surface

Children should be discouraged from remaining in or entering the diaper changing area. Keep the changing surface away from children, preferably at least 36 inches from the floor. Cover it with a smooth, moisture-resistant, easily cleanable material. For extra protection, use disposable single-service covers for each child. A changing table should be nonporous, kept in good repair, and cleaned and sanitized after each use to remove visible soil, followed by wetting with an approved sanitizing solution. Diaper changing should not be conducted on surfaces used for other purposes, especially not on any counter that is used during food preparation or mealtimes.

Hand washing sink and towels

The best hand washing sink is one equipped with both hot and cold running water mixed through one faucet (with a minimum water temperature at least 60-degrees and not greater than 120-degrees). Ideally, water controls should be foot, knee or wrist operated to avoid contamination of or by hands. The sink should be in the same room as the changing surface. Keep soap and towels nearby. Use single-service towels (e.g., paper towels) instead of cloth towels.

Disposable gloves

Although gloves are not necessary for diaper changing, they may reduce contamination of the caregiver's hands and reduce the presence of infectious disease agents under the fingernails and from the hand surfaces. Even if gloves are used, caregivers must wash their hands after each child's diaper changing to prevent the spread of disease-causing agents. Caregivers must remove the gloves using the proper technique otherwise the contaminated gloves will spread infectious disease agents.

Potty chairs

Use of potty chairs should be discouraged. If potty chairs are used, they should be emptied into a toilet, cleaned in a utility sink, sanitized after each use, and stored in the bathroom. After the potty is sanitized, the utility sink should also be sanitized. Potty chairs should not be washed in a sink used for washing hands. If potty chairs are used, they should be constructed of plastic or similar nonporous synthetic products. Wooden potty chairs should not be used, even if the surface is coated with a finish. The finished surface of wooden potty chairs is not durable and, therefore, may become difficult to wash and sanitize effectively.

Diapers

Use of disposable diapers is recommended to best reduce the risk of infections. Cloth diapers require more handling than disposable diapers (the more handling the greater chance of infection). When cloth diapers are used, no rising or dumping of contents of the diaper shall be performed at the childcare facility. Clean diapers should be stored away from dirty diapers. A child's diaper should be checked for wetness and feces as least hourly, and whenever the child indicates discomfort or exhibits behavior that suggests a soiled or wet diaper. Diapers should be changed when they are found to be wet or soiled.

DIAPERING RECOMMENDATIONS (cont.)

Diapering Procedures:

The following diaper changing procedure should be posted in the changing area and should be followed for all diaper changes.

Step 1: Get organized. Before you bring the child to the diaper changing area, wash your hands and bring what you need to the diaper-changing table:

- a) Non-absorbent paper liner large enough to cover the changing surface from the child's shoulders to beyond the child's feet;
- b) Fresh diaper, clean clothes (if you need them);
- c) Wipes for cleaning the child's genitalia and buttocks removed from the container or dispensed so the container will not be touched during diaper changing;
- d) A plastic bag for any soiled diapers;
- e) Disposable gloves, if you plan to use them (put gloves on before handling soiled clothing or diapers);
- f) A thick application of any diaper cream (when appropriate) removed from the container to a piece of disposable material such as facial or toilet tissues.

Step 2: Carry the child to the changing table, keeping soiled clothing away from you and any surface you cannot easily clean and sanitize after the change.

- a) Always keep a hand on the child;
- b) If the child's feet cannot be kept out of the diaper or from contact with soiled skin during the changing process, remove the child's shoes and socks so the child does not contaminate these surfaces with stool or urine during the diaper changing;
- c) Put soiled clothes in a plastic bag and securely tie the plastic bag to send the soiled clothes home.

Step 3: Clean the child's diaper area.

- a) Place the child on the diaper change surface and unfasten the diaper but leave the soiled diaper under the child;

- b) If safety pins are used, close each pin immediately once it is removed and keep pins out of the child's reach. Never hold pins in your mouth;
- c) Lift the child's legs as needed to use disposable wipes to clean the skin on the child's genitalia and buttocks. Remove the stool and urine from front to back and use a fresh wipe each time. Put the soiled wipes into the soiled diaper or directly into a plastic-lined, hands-free covered can.

Step 4: Remove the soiled diaper without contaminating any surface not already in contact with stool or urine.

- a) Fold the soiled surface of the diaper inward;
- b) Put soiled disposable diapers in a covered, plastic-lined, hands-free covered can. If reusable cloth diapers are used, put the soiled cloth diaper and its contents (without emptying or rinsing) in a plastic bag or into a plastic-lined, hands-free covered can to give to the parents or laundry service;
- c) If gloves are used, remove them using the proper technique and put them into a plastic-lined, hands-free covered can;
- d) Whether or not gloves are used, use a disposable wipe to clean the surface of the caregiver's hands and another to clean the child's hands, and put the wipes into the plastic-lined, hands-free covered can;
- e) Check for spills under the child. If there are any, use the paper that extends under the child's feet to fold over the disposable paper so a fresh, unsoiled paper surface is now under the child's buttocks.

Step 5: Put on a clean diaper and dress the child.

- a) Slide a fresh diaper under the child;
- b) Use a facial or toilet tissue to apply any necessary diaper creams, discarding the tissue in a covered, plastic-lined, hands-free covered can;
- c) Note and plan to report any skin problems such as redness, skin cracks, or bleeding;

DIAPERING RECOMMENDATIONS (cont.)

- d) Fasten the diaper. If pins are used, place your hand between the child and diaper when inserting the pin.

SOURCE: Caring For Our Children, National Health and Safety Performance Standards: Guidelines for Out-Of-Home Childcare Programs.
<http://cfoc.nrckids.org/>

Step 6: Wash the child's hands and return the child to a supervised area.

- a) Use soap and water, no less than 60 degrees F and no more than 120 degrees F, at a sink to wash the child's hands, if you can.
- b) If the child is too heavy to hold for hand washing or cannot stand at the sink, use commercial disposable diaper wipes or follow this procedure:
 - I. Wipe the child's hands with a damp paper towel moistened with a drop of liquid soap;
 - II. Wipe the child's hands with a paper towel wet with clear water;
 - III. Dry the child's hands with a paper towel.

Step 7: Clean and sanitize the diaper-changing surface.

- a) Dispose of the disposable paper liner used on the diaper changing surface in a plastic-lined, hands-free covered can;
- b) Clean any visible soil from the changing surface with detergent and water; rinse with water.
- c) Wet the entire changing surface with the sanitizing solution (e.g., spray a sanitizing bleach solution of ¼ cup of household liquid chlorine bleach in one gallon of tap water, mixed fresh daily);
- d) Put away the spray bottle of sanitizer. If the recommended bleach dilution is sprayed as a sanitizer on the surface, leave it in contact with the surface for at least two (2) minutes. The surface can be left to air dry or can be wiped dry after two (2) minutes of contact with the bleach solution.

Step 8: Wash your hands using proper technique.



PETS IN CHILDCARE FACILITIES

Infants and children less than 5 years old are more likely than most people to get diseases from animals. Reptiles (e.g., lizards, snakes, turtles), amphibians (e.g., frogs, toads, newts, salamanders), and young birds (e.g., baby chicks, ducklings) should not be permitted in rooms occupied by children. Children and infants should not have contact with these animals or items that have been in contact with these animals or their environments.

When bringing appropriate pets into a childcare facility, the following guidelines should be followed:

1. Children should always be properly supervised when animals are available.
2. Areas should be designated for animal contact. Such areas should be properly cleaned regularly and after animal contact. Food or drink should not be consumed in these areas.
3. No animals should be allowed to run freely.
4. All animals should be in good physical condition and vaccinated against transmittable diseases. Dogs, cats, and ferrets require proof of current rabies vaccination. Animals should be kept clean and free of intestinal parasites, fleas, ticks, mites, and lice.
5. All fecal material must be cleaned from the cage of any mammal or bird on an as needed basis, (at a minimum of one time per week), and appropriate sanitizer used. Reptiles, fish and insects must be cared for in a manner to minimize odor and maintain health. Persons cleaning cages must wear gloves, masks, and glasses or goggles. Cleaning should be preformed by individuals >5 years old, under the supervision of an adult. Ideally, cleaning should be performed when other children are not in the room.
6. Wash hands with soap and warm water after contact with animals or their environment.

Because wild animals can carry diseases that are dangerous to people, children should not have direct contact with wildlife. Teach children never to handle unfamiliar animals, wild or domestic, even if the animal appears to be friendly.

For concerns about pets in a childcare facility please contact the Division of Public Health Services, Bureau of Infectious Disease and Control at (603) 271-4496.

For more information please view the Centers for Disease Control and Prevention's website:

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



FOOD HANDLING FOR CHILDCARE SETTINGS

In order to prevent foodborne illness caused by bacteria, viruses and parasites, it is very important that food be handled properly. Persons who have signs or symptoms of illness, including vomiting, diarrhea or infectious skin lesions which can not be covered, or who are infected with foodborne pathogens (e.g., *Salmonella*, *Shigella*, *E. coli* O157:H7) should not handle food. Whenever possible, staff who diaper children and have frequent exposure to feces should not prepare food for others. Careful handwashing needs to be practiced at all times, especially for caregivers who prepare food.

Preparing, Eating and Storing Food

1. Wash hands well before and after touching food.
2. Wash utensils, platters, counter tops and cutting boards with hot soapy water before and after contact with raw meat or poultry products.
3. Staff who diaper children and have frequent exposure to feces should not prepare food for others.
4. Canned soup and poultry products should be eaten immediately after opening.
5. Fruits and vegetables should be rinsed well.
6. Wash meal service area before and after serving food with hot soapy water followed with a disinfectant solution. (Note: You can make your own disinfectant by mixing one tablespoon of bleach with one quart water prepared fresh daily.)
7. Wash children's hands before eating.
8. Use separate utensils for each child. If interrupted while feeding an infant, wash hands again before continuing and before feeding another child.
9. Oversee mealtime and encourage children not to share food, plates, or utensils. Like-

wise, do not allow children to eat foods that have been dropped on the floor.

10. Discard all food left on plates at the end of mealtime.
11. Do not reuse lunch bags or bags from other items because of possible contamination.
12. Food should be stored away from areas where diapering is done.

How to Properly Defrost Foods

1. Plan ahead to allow time for defrosting food properly.
2. Defrost food in the refrigerator. If defrosting outside the refrigerator, place food in a sealed plastic bag and immerse in cold water, changing the water frequently.
3. Do not refreeze foods unless the package label states that it is safe to refreeze.
4. Follow instructions for microwave defrost as given in operating manuals of microwave.

What to Do If the Freezer Fails or The Power Goes Out

1. Keep the refrigerator-freezer door closed.
2. If your refrigerator-freezer will be shut off for more than two hours, make immediate arrangements for alternate storage of food elsewhere. Transport food in insulated coolers or in thick layers of paper.
3. When the power comes back on, throw away any food with an unusual color or odor. Do not taste this food.
4. If refrigerated foods are above 40 F for more than two hours, most perishable foods will be need to be discarded.
5. Frozen foods can be refrozen if they are at or below 40 F or still contain ice crystals.

FOOD HANDLING FOR CHILDCARE

SETTINGS (cont.)

Infant Formula

Prepared infant formula or bottled milk should be refrigerated and clearly labeled with the child's first and last names. Any formula or bottled breast milk not consumed by an infant may be used later in the day if dated and stored in the refrigerator. Otherwise, it should be discarded or returned to the parent at the end of the day.

Shopping Guidelines

1. Allow adequate transport time to and from grocery shopping to prevent spoilage of fresh or defrosting of frozen products.
2. Do not buy or use food from containers that are leaking, bulging or severely dented.
3. Do not buy jars that are cracked or have bulging lids or cans that are bulging or leaking.
4. Purchase meat and dairy products last. Refrigerate these products as soon as you get to the childcare center.

Refrigerating Food

1. Keep the refrigerator clean and establish a regular cleaning schedule.
2. Defrost the freezer when necessary. Ice buildup prevents refrigerators from cooling properly.
3. Avoid overcrowding in the refrigerator. The more crowded it is, the less cooling effect.
4. Check the gaskets regularly; they should be flexible to keep the cold air from leaking out.
5. Keep a thermometer and check the temperature inside on a regular basis. The temperature should be at or below 40 F.
6. Refrigerate perishable bag lunches. If refrigeration is not available, put a container filled with frozen water, a plastic bag with ice cubes or a cold or frozen beverage into the bag for storage.

Freezing Food

1. Wrap meat in freezer paper, plastic wrap or foil if not already wrapped properly.
2. Date packages using the oldest first.
3. Check the freezer temperature regularly. It should be at or below 0 F.

Leftover Food

1. Do not reuse leftovers that have already been served.
2. Refrigerate unused leftovers immediately. Store in small shallow covered containers. Date packages and discard if not used within 72 hours. Meat can be refrigerated safely for two days.
3. Reheat leftovers all the way through. Bring gravies to a rolling boil.

Proper Hand Washing Technique

Children and babies should have their hands washed: 1) upon arrival to the daycare facility, 2) before eating/preparing food, 3) after toileting/diapering changes, and 4) after touching body secretions 5) after playing outside, especially after playing sandboxes.

Adults (including staff, volunteers, students and parent helpers) should wash their hands: 1) when they arrive at the daycare facility, before starting work, 2) before eating/preparing food, or feeding children, 4) after toileting/diapering a child or using the bathroom themselves, and 4) after handling body secretions.

How to Properly Wash Your Hands

1. Use soap, preferably liquid, and warm running water.
2. Wash your hands for at least 10 seconds while rubbing your hands vigorously as you wash them.
3. Wash ALL surfaces including: back of hands, wrists, between fingers and under nails.

FOOD HANDLING FOR CHILDCARE

SETTINGS (cont.)

4. Rinse your hands well. Leave water running.
5. Dry your hands with a single-use towel (e.g., a paper towel)
6. Turn off the water using a PAPER TOWEL instead of your bare hands.
7. Throw the paper towel away.



RASHES

Rashes may occur for many reasons and it is impossible to cover in this manual all the causes for a rash. In most cases, rashes that last for more than a day that are accompanied by fever and/or other symptoms of illness, or rashes that develop all over the body should be referred to a physician for diagnosis before a child returns to the childcare facility.

Sensitive rashes that are caused from plant sensitivity such as poison ivy, poison oak and poison sumac often have unusually shaped blister-like sores. The fluid in these blisters is not contagious to others. People react to direct contact from the plant or from indirect contact from clothing, or other objects contaminated from plant contact. (A family pet can also indirectly pass this to people when its fur is contaminated). It is best to consult a physician for treatment.

Hives is a rash that may happen when a person is hypersensitive to such things as certain foods, drugs, and bee stings. It may also be due to emotional factors. The rash is usually itchy, raised, reddish welts on the skin. Hives that are accompanied by difficulty breathing, unusual anxiety and hives occurring all over the body needs to be seen by a physician immediately.

Another common rash experienced by children during the summer months is known as Swimmer's Itch. It is a form of dermatitis (i.e., inflammation of the skin) that is caused by larvae of certain worms when they attempt to penetrate the skin. This results in a mild allergic reaction. The worms that cause Swimmer's itch are commonly found in water after being excreted from birds, waterfowl and mammals. Generally, no treatment is required for the rash since it goes away in a few days and does not cause lasting effects. Swimmer's Itch is not spread from person-to-person.



CAMPYLOBACTER

Campylobacteriosis is an intestinal illness caused by the bacterium *Campylobacter* of which there are many types.

Who gets this disease?

Anyone can. The illness occurs in all age groups.

How is it spread?

Campylobacter is spread by the fecal-oral route. Water, milk or food (especially poorly cooked poultry products) contaminated with *Campylobacter*, or contact with infected animals may also be a source of infection to people.

What are the symptoms?

Diarrhea (which may be severe and bloody), stomach cramps, abdominal pain, vomiting and fever are the usual symptoms.

How soon do symptoms appear?

The symptoms generally appear between one and seven days, but can take longer.

Can a person have this disease without knowing it?

Yes. Although symptoms usually go away after one to 10 days on their own, there may still be germs in the stools for several weeks if treatment is not given.

What is the treatment?

Although antibiotic therapy may not shorten the illness, it does shorten the amount of time the germ is passed in the stools. Therefore, in the childcare setting, treatment is recommended for adults and children with *Campylobacter* in their stools. This will reduce the chance of spread to others.

How can the spread of this disease be prevented?

1. Wash hands thoroughly after using the toilet and diapering children.
2. Wash hands thoroughly before preparing food.
3. Keep children who have diarrhea at home.
4. Wash children's toys frequently, especially if they have diarrhea.
5. Make sure children wash their hands after handling pets or have contact with animal feces.
6. Symptomatic staff with positive stool cultures for *Campylobacter* should be excluded from work.
7. Always treat raw poultry, beef and pork as if they are contaminated and handle accordingly.
8. Wrap fresh meats in plastic bags at the market to prevent blood from dripping onto other foods.
9. Refrigerate foods promptly; minimize holding at room temperature.
10. Avoid ingesting unpasteurized milk.
11. Use separate cutting boards for raw poultry and beef to prevent cross contamination with other foods.
12. Cutting boards and counters used for preparation should be washed immediately after use to prevent cross contamination with other foods.
13. Be certain all foods (especially beef and poultry products) are thoroughly cooked.

CAMPYLOBACTER (cont.)

Who should be excluded?

Any person with diarrhea shall be excluded from foodhandling, from childcare agencies and from direct care of hospitalized or institutionalized patients until 48 hours after resolution of symptoms. Children can return to childcare once they are no longer having diarrhea.

Reportable?

Yes. Campylobacteriosis is reportable by New Hampshire law to the Division of Public Health Services, Bureau of Infectious Disease Control at (603) 271-4496.



CHICKENPOX (VARICELLA) AND SHINGLES

Chickenpox is a very contagious disease caused by the varicella-zoster virus. It usually begins with a mild fever and an itchy rash. The rash starts with crops of small red bumps on the stomach or back and spreads to the face and limbs. The red bumps rapidly become blistered, oozy and then crust over. People may have only a few bumps or may be totally covered.

Once a person has had chickenpox, the varicella-zoster virus stays without symptoms in the body's nerve cells. In some people (for unknown reasons), the virus can become active again at some later time as "shingles" or zoster. This problem includes a red, painful, itchy, blistery rash, usually in the line along one side of the body. There is no fever. The virus is shed in the blister fluid of the rash and can cause chickenpox in a person who has not had it, if that person has direct contact with the infected shingles blisters.

Who gets this disease?

Anyone who is exposed to chickenpox and has not had it before has a very good chance of developing chickenpox. It is most common in school-aged children. If you have had chickenpox once, second attacks are very rare. Shingles is most common in adults, as a person must have already had chickenpox to develop shingles.

When a pregnant woman or a person with a weak immune system who has not had chickenpox is exposed he/she should contact a physician.

Chickenpox does not cause serious illness in healthy children. Adults may, occasionally, be seriously ill with chickenpox.

How is it spread?

Chickenpox is contagious from 1-2 days **before** the rash appears to until the blisters have become crusted over. *It is* spread by close contact (i.e., sharing breathing space or direct touching contact) with infected secretions from the nose, throat or rash.

How soon do symptoms appear?

The symptoms generally appear from 14-16 days after exposure but in some cases can occur as early as 10 days or as late as 21 days after contact. Chickenpox and shingles are usually diagnosed by the typical appearance of the rashes.

What is the treatment?

The chickenpox symptoms may be treated with anti-itching medicine and lotions, fever control, fluids and rest. Because of a possible association with Reye's Syndrome (i.e., vomiting, liver problems and coma), salicylate-containing products (i.e., aspirin) should not be used for fever control. Acetaminophen may be used for fever control. Scratching should be avoided because it can cause infection and scarring. A medication to decrease the severity of symptoms is available for high-risk children. This must be given within 24 hours of the onset of rash. Please consult the Division of Public Health Services, Bureau of Infectious Disease Control or the child's physician for more information.

CHICKENPOX (VARICELLA) AND SHINGLE

(cont.)

How can the spread of this disease be prevented?

The ACIP recommends that children attending daycare facilities and schools be vaccinated for chickenpox. New Hampshire currently **requires** varicella vaccination for school or daycare attendance. The two dose series should be completed at 12-15 months and again at 4-6 years.

The ACIP also recommends that daycare workers, who have no history of chickenpox disease, be tested for immunity. If testing shows susceptibility, 2 doses of varicella vaccine should be administered separated by one month.

Each childcare facility should have a system so that it is notified if a child or staff member develops chickenpox or shingles. This is so the facility may take appropriate measures if there is a pregnant or immunocompromised member in the facility. (Recently the Advisory Committee on Immunization Practice has recommended the use of varicella vaccine for susceptible persons who have been exposed to varicella).

The childcare facility should watch closely for early signs of chickenpox in other children for three weeks following the most recent case. If a child or staff member develops a suspicious rash, he/she should be sent to his/her healthcare provider so that the rash can be diagnosed. However, chickenpox is highly contagious and in spite of your best efforts, you will probably have several more cases if children have not already had the disease.

Who should be excluded?

Children should be excluded from daycare after the rash eruption first appears and until the vesicles become dry and crusted over. In certain situations exposed unvaccinated children without symptoms do need to stay at home. Generally exposed children, who have been vaccinated, do not need to stay at home. Adults with shingles should be excluded if vesicles/blisters cannot be covered.

Reportable?

Yes, chickenpox is reportable by New Hampshire law to the Division of Public Health Services, Bureau of Infectious Disease Control at (603) 271-4496



COMMON COLD & INFLUENZA

Common colds are mild infections of the nose and throat, which are very common in young children (and in adults who are around them), and are caused by many different viruses. Usually the viral illness causes some combination of stuffy nose, runny nose, sore throat, cough, runny eyes, ear fluid and fever.

Influenza (the flu) is also caused by a virus (e.g., influenza-A, influenza-B) and causes symptoms of fever, headache, sore throat, cough, muscle ache and fatigue. Most people with influenza feel too ill to attend childcare.

Occasionally, the common cold or influenza can be complicated by a bacterial infection such as an ear infection, sinus infections, or pneumonia. These complications can be treated with appropriate antibiotics after evaluation by their health care provider.

Who gets these diseases?

Anyone can. Young children may be sick with these illnesses several times per year. As the number of persons in contact with a child increases, so does the likelihood of exposure to the common viruses that cause the cold and flu.

How are they spread?

The viruses can be transmitted from one person to another in respiratory secretions (i.e., saliva, nasal discharge, and phlegm). Infected droplets may be scattered through sneezing or coughing or they may land on surfaces touched by other persons, who then touch their eyes, nose or mouth.

How soon do symptoms appear?

The symptoms of a **common cold** appear as soon as 12-72 hours after exposure. The symptoms of **influenza** appear in 1-4 days after exposure, and typically last 2-3 days.

What is the treatment?

While there is medication available, most health care providers suggest rest and plenty of fluids. To see if there is bacterial infection in addition to the viral infection, a healthcare provider should evaluate a child who has a high fever, persistent cough, or earache. Because of a possible association with Reye's Syndrome (i.e., vomiting, liver problems and coma), salicylate-containing products (i.e., aspirin) are not recommended for control of fever.

How can the spread of these diseases be prevented?

Influenza vaccine is the primary method of preventing influenza and its severe complications. The vaccine should be given annually beginning at 6 months of age. Two doses should be given the first year the child receives the influenza vaccine.

Annual influenza vaccination is *recommended* for all children aged 6 months through age 18 with priority given to the following persons for influenza vaccine if influenza vaccine supplies are limited:

- Children 6 months to 18 years
- Pregnant women
- Persons aged 50 years old and older
- Persons of any age with certain chronic medical conditions
- Persons who live with or care for persons at high risk

Additional ways to prevent the spread of these diseases:

- Get adequate rest, good nutrition, plenty of fluids
- Avoid people who are sick
- Observe children for symptoms of coughing, sneezing, headache, fatigue, fever. Notify parent to pick child up
- Remind children if they sneeze or cough into their hand or tissue, they must properly dispose of the tissue and wash their hands

COMMON COLD & INFLUENZA (cont.)

- Runny noses and eyes should be promptly wiped, then wash their hands
- Disposable tissues should be used. Keep tissues available
- Toys that children put in their mouths and frequently used surfaces (e.g., tables) should be washed and disinfected at least once each day
- The childcare facility should have fresh air and be aired out completely once a day, even in the winter months

Who should be excluded?

Children should be excluded if they have a fever or are unable to participate in general activities. Exclusion is of little benefit since viruses are likely to spread.

Reportable?

No. Influenza is not reportable, but please notify the Division of Public Health Services, Bureau of Infectious Disease Control at (603) 271-4496 of influenza outbreaks. The common cold is not reportable.



CONJUNCTIVITIS (Pink Eye)

Conjunctivitis is an infection of the eyes commonly known as “pink eye”. Conjunctivitis can be purulent or nonpurulent. It is most often caused by a virus (like those which cause the common cold), but can also be caused by bacteria, allergies or chemicals. The conjunctiva – the clear layer over the whites of the eyes – becomes pink and there may be tearing and discharge from the eyes. Eyes may be itchy or even painful. In the morning, the discharge may make the eyelids stick together. Conjunctivitis is a mild illness. Viral conjunctivitis will go away by itself in one to three weeks.

Who gets this disease?

Anyone can get it. Conjunctivitis is caused by a virus or bacterium and is highly contagious. Preschoolers and school-age children have it most often and can spread it to people taking care of them or to each other.

How is it spread?

Both viral and bacterial conjunctivitis spread by contact with discharge from the eye. Children often pass it along by rubbing their eyes and getting discharge on their hands and then:

- a) Touches another child’s eye.
- b) Touches another child’s hands. The second child then touches his/her eyes.
- c) Touches an object. Another child touches the object and then puts his/her hands into his/her eyes.

Staff washing, drying or wiping a child’s face and then using the same washcloth/towel/paper towel/tissue on another child’s face can also pass it along. Staff could also get eye discharge on their hands when wiping a child’s eyes and then pass it along as outlined above.

The incubation period varies depending upon the cause whether it is viral or bacterial; symptoms may develop in 5 –12 days depending on the cause. (Bacterial 24-72 hours, viral 12 hours to 12 days).

How is it diagnosed and treated?

Signs and symptoms of purulent conjunctivitis are white or colored discharge from the eye, eye redness, eyelid swelling, eye pain, and sometime fever. It is often difficult to tell if the cause is bacterial or viral. Occasionally the doctor will examine the discharge under the microscope or culture it. Often an antibiotic eye medicine will be given because treatment of bacterial conjunctivitis shortens the length of symptoms and decreases infectiousness. There is not treatment for viral conjunctivitis; it will go away by itself but may last a week or more.

Signs and symptoms of nonpurulent conjunctivitis are clear watery discharge from the eye, without eye redness or pain or fever.

How can the spread of this disease be prevented?

1. Follow hand washing and center cleanliness guidelines.
2. Teach children to avoid rubbing their eyes
3. Keep children’s eyes wiped free of discharge.
4. Always use disposable tissues/towels for wiping and washing. **Never** use the same tissue/towel for more than one child.
5. **Always wash your hands after wiping a child’s eyes.**
6. Teach children to wash their hands after wiping their eyes.
7. Dispose of tissues/towels in lined, covered container kept away from food and childcare materials.

CONJUNCTIVITIS (Pink Eye) cont.

8. Be sure articles that may touch children's eyes (e.g., pillowcases, sheets, towels binoculars, prisms, toy cameras) are washed well with soap and hot water at least once daily.

Who should be excluded?

It is recommended that children and staff with purulent conjunctivitis be excluded from childcare until examined by a *healthcare provider* and approved for re-admission, with or without treatment. Children with nonpurulent conjunctivitis do not need to be excluded from childcare.

Reportable?

No. Conjunctivitis is not reportable by New Hampshire state law to the Division of Public Health Services, Bureau of Infectious Disease Control. However, Public Health Professionals are available for consultation at (603) 271-4496.



DIARRHEA (Infectious Diarrhea)

Diarrhea is defined as: 1) an increase in the number of stools over what is normal for that person, and 2) stools which are not formed (i.e., loose and watery and take the shape of the container they are in). (NOTE: Breast-fed babies may have stools that are **normally** not formed).

There are two (2) general types of diarrhea: infectious and non-infectious.

Infectious Diarrhea is caused by a virus, parasite, or bacterium. It can spread quickly from person-to-person, especially in daycare centers. Some of the causes of infectious diarrhea, such as Campylobacteriosis, shiga-toxin producing E. coli, giardiasis, salmonellosis and shigellosis, are discussed in their own fact sheets found in this document. There are other agents that can also cause infectious diarrhea in children. These include parasites (e.g., cryptosporidiosis, amoeba) other bacterial (e.g., yersinia) and other viruses (e.g., Rotavirus). Although these other disease-causing organisms are not discussed in detail, the general principles outlined in this section are applicable to prevent the spread of any of these germs.

Non-infectious Diarrhea can be caused by toxins (e.g., certain types of food poisoning), chronic diseases (e.g., cystic fibrosis) or antibiotics (e.g., ampicillin). Non-infectious diarrhea **DOES NOT** spread from person-to-person.

Who gets it?

Anyone can catch infectious diarrhea. It can spread especially quickly among babies and young children who are not toilet-trained or who may not wash their hands well after going to the bathroom. It can also easily spread to the adults taking care of them and helping them with diapering and toileting.

How is it spread?

The germs that can cause infectious diarrhea are spread by fecal-oral route.

How is it diagnosed and treated?

The germs can be diagnosed by stool cultures or by looking at stool under a microscope for eggs or parasites. (The healthcare provider will ask for a stool sample and send it to a laboratory for analysis). The physician will decide on appropriate treatment.

How can the spread of diarrhea be prevented?

Hand washing is the most important way to stop the spread. Specific methods for preventing the spread of infectious diarrhea are discussed in each fact sheet.

Who should be excluded?

Any person with diarrhea shall be excluded from food handling, from childcare agencies and from direct care of hospitalized or institutionalized patients until 48 hours after resolution of symptoms.. Children who have 2 or more stools above their normal amount should be excluded as it impedes the caregiver's ability to care for the children and maintain sanitary conditions. For diarrhea caused by a specific agent, see the related fact sheet to learn if exclusion is necessary.

Reportable?

Non-specific diarrhea is not reportable. Clusters of diarrhea illness in a facility should be reported to the Division of Public Health Services, Bureau of Infectious Disease and Control at (603) 271-4496.



DIPHTHERIA

Diphtheria is a potentially serious bacterial infection of the nose and throat.

Who gets this disease?

Diphtheria occurs primarily among unimmunized or inadequately immunized people.

How is it spread?

The bacteria are spread by direct contact with discharge from the nose, throat, skin, eyes, or from sores of infected persons. Articles or food contaminated with discharge can also spread infection.

What are the symptoms?

Diphtheria causes a sore throat and swollen tonsils, with a grayish covering and swollen glands in the neck. It can lead to severe throat swelling that can block breathing. The bacteria also produce a toxin (a type of poisonous substance) that can cause severe and permanent damage to the nervous system and heart.

What is the Treatment?

Diphtheria is treated primarily with an antitoxin, along with antibiotics. Antibiotics are also given to the carriers of the diphtheria (e.g., people who test positive for diphtheria but who are not sick). Individuals who have been in contact with an infected person and are not adequately vaccinated should receive a booster.

How can the spread of this disease be prevented?

The combination vaccine Diphtheria, Tetanus and acellular Pertussis (DTap), is **required** for both childcare and school attendance. The Advisory Committee on Immunization Practices (ACIP) recommends immunizing children against diphtheria, along with pertussis and tetanus, beginning as early as six weeks of age. The five dose series should be completed at 2 months, 4

months, 6 months, and 15-18 months, and 4-6 years of age.

Patients and carriers of diphtheria should receive appropriate treatment and not return to childcare until *two* (2) cultures from both the nose and throat (and from skin sores in cutaneous diphtheria), are negative for the bacteria. These cultures should be taken at least 24 hours apart and no sooner than 24 hours after finishing antibiotic treatment. Where culture is impractical, isolation may be ended after 14 days of appropriate treatment.

Who should be excluded?

Children and staff should be excluded until bacteriological examination proves them not to be carriers.

Reportable?

Yes, Diphtheria is reportable by New Hampshire law to the Division of Public Health Services, Bureau of Infectious Disease Control at (603) 271-4496.



E. COLI 0157:H7

E. coli 0157:H7 is an intestinal illness caused by a bacterium that can cause severe bloody diarrhea, anemia, and –in some cases- kidney failure.

Who gets this disease?

Anyone is susceptible to this particular category of E. coli 0157:H7, but it most seriously affects young children and the elderly.

How is it spread?

This bacterium lives in a small number of healthy cattle. When the infected animal is slaughtered, the meat can become contaminated. The bacteria may also contaminate raw milk by being present on the cow's udder.

E. coli 0157:H7 is spread by eating contaminated food – most often undercooked beef, especially undercooked ground beef. Contaminated meat looks and smells normal. Drinking unpasteurized milk and swimming in or drinking sewage-contaminated water can also cause infection.

An infected person having diarrhea can pass the bacteria from one person to another if hand-washing habits are not adequate. This is more likely to happen among toddlers who are not toilet trained.

Young children usually continue to shed the bacteria in their stool a week or two following their illness.

What are the symptoms?

They vary from mild diarrhea to a bloody diarrhea with severe abdominal cramps and little or no fever. Vomiting may occur late in the illness. A small percent may develop hemolytic uremic syndrome (HUS), a condition that destroys the red blood cells and causes kidney failure. This is more likely to occur in children under five years of age and the elderly, and may lead to death.

How soon do symptoms appear?

Symptoms appear 12-72 hours after exposure with the average being 48 hours.

Can a person have this disease without knowing it?

Yes. The organism is identified through stool culture testing. Usually symptoms disappear in a few days but the bacteria can remain in the intestinal tract for several weeks.

What is the treatment?

Seek medical help for identification of the organism. Usually the person is treated for diarrhea dehydration with fluid replacement.

How can the spread of this disease be prevented?

1. Wash hands thoroughly after diapering and using the bathroom.
2. Avoid eating undercooked beef, especially hamburger.
3. Avoid drinking from unknown water sources,, raw milk, and unpasteurized apple juice.
4. Teach children good hand washing techniques

Who should be excluded?

Children who are infected with this bacterium will be excluded from childcare while they are symptomatic. Infected adults should be excluded from childcare centers, food handling, and direct care healthcare, until their stool cultures are free of E. coli 0157:H7 on two (2) consecutive specimens collected not less than 24-hours apart. If antibiotics have been given, the initial cultures should be obtained at least 48-hours after the last dose.

Reportable?

Yes. E. coli 0157:H7 is reportable by New Hampshire law to the Division of Public Health Services, Bureau of Infectious Disease Control at (603) 271-4496.



EASTERN EQUINE ENCEPHALITIS

What is eastern equine encephalitis?

Eastern equine encephalitis (EEE) is an uncommon but serious disease caused by EEE virus. EEE is an arbovirus (short for *arthropod-borne*, meaning spread by insects). The virus can be transmitted to horses, other animals, and in rare cases, people.

How do people get eastern equine encephalitis?

The EEE virus grows in birds that live in freshwater swamps. The virus has a complex life cycle involving birds and a specific type of mosquito, called *Culiseta melanura*. This particular mosquito does not bite people. Sometimes though, the virus can escape from its marsh habitat by means of other mosquitoes that feed on both birds and mammals. These mosquitoes can transmit the virus to animals and people.

What are the symptoms of EEE?

Infection can cause a range of illnesses. Most people have no symptoms; others get only a mild flu-like illness with fever, headache, and sore throat. For people with infection of the central nervous system, a sudden high fever (103 to 106), severe headache, and stiff neck can be followed quickly by seizures and coma. About one third of these patients die from the disease. Of those that survive, many suffer permanent brain damage and require lifetime institutional care.

How soon after exposure do symptoms appear?

Symptoms of EEE usually appear 4 to 10 days after the bite of an infected mosquito.

How is eastern equine encephalitis diagnosed?

Diagnosis is based on tests of blood or spinal fluid.

Who is at risk for eastern equine encephalitis?

Anyone can get EEE, but some people are at increased risk, such as people living in or visiting areas where the disease is common and people who work outside or participate in outdoor recreational activities in areas where the disease is common. Children and those over age 50 are more susceptible to the disease. The risk of getting EEE is highest from late July through September.

What is the treatment for eastern equine encephalitis?

There is no specific treatment for eastern equine encephalitis. Antibiotics are not effective against viruses, and no effective anti-viral drugs have yet been discovered. Care of the patient centers around treatment of symptoms and complications.

How common is eastern equine encephalitis?

EEE is a rare disease. An average of 6 cases are reported in the United States in most years. There is concern, however, that EEE is re-emerging. In NH, EEE has been found in horses, mosquitoes and several species of birds. In 2014, 3 cases of EEE were reported in humans in NH.

How can eastern equine encephalitis be prevented?

A vaccine is available for horses, but not for humans. Prevention of the disease centers around controlling mosquitoes and on individual action to avoid mosquito bites. To avoid being bitten by the mosquitoes that transmits EEE:

- If possible, stay inside between dusk and dawn, when mosquitoes are most active
- When outside between dusk and dawn, wear long pants and long-sleeved shirts

EASTERN EQUINE ENCEPHALITIS (cont.)

- Use an insect repellent with DEET or Picaridin according to the manufacturer's directions when outside. Oil of lemon eucalyptus and IR3535 have been found to provide protection similar to repellents with low concentrations of DEET
- Clothing can be treated with permethrin according to the manufacturer's directions
- When possible wearing long sleeves and pants while outside
- Put screens on windows and make sure they do not have holes
- Eliminate standing water and other mosquito breeding locations from your property. Do not alter natural water bodies. The management of ponds and wetlands is regulated by the Department of Environmental Services and any alterations require a permit before work may begin

For more information about eastern equine encephalitis, call the New Hampshire Department of Health & Human Services, Bureau of Infectious Disease Control at (603) 271-4496 or visit our website at www.dhhs.nh.gov or the Centers for Disease Control and Prevention at www.cdc.gov.



FIFTH DISEASE

Fifth disease is an illness caused by a virus called *human parvovirus B19*. Although people may be asymptomatic with the illness, most children with it develop a facial rash (i.e., “slapped cheek” appearance) and a lace-like rash on the trunk and extremities. The rash may reappear for several weeks following exposure to non-specific stimuli such as sunlight, change in temperature or emotional stress.

Except for the rash, the patient is typically otherwise well: but some give a history of mild general symptoms one to four days before rash onset. Fever, sore throat or pain and swelling in the joints may also occur.

Who gets this disease?

Although most commonly recognized in children, anyone is susceptible. Studies indicate previous infection with Fifth disease correlates with a lower risk of a second infection. Outbreaks in schools often begin in late winter or early spring and may continue until the school year is over.

In the U.S. about 50% of the adult population are already immune to the disease. Some studies indicate the pregnant women who are exposed to Fifth disease and subsequently develop infection may have an increased risk for fetal death. However, this risk is felt to be extremely low. There is no evidence that the infection during pregnancy causes fetal malformations (i.e., birth defects). Pregnant childcare workers should contact their obstetricians.

How is it spread?

The virus that causes Fifth disease has been found in the respiratory secretions of patients and is, therefore, most likely spread by direct person-to-person contact through the respiratory route.

How soon do symptoms appear?

It takes from 4-21 days after exposure to develop the characteristic rash illness of Fifth disease.

People with the rash are past the period of infectiousness to others. The highest risk of transmitting the Fifth disease virus to others is felt to occur **before** the rash develops.

How is it diagnosed and treated?

A healthcare provider based on the characteristic rash and any other accompanying symptoms may diagnose Fifth disease. There is no specific treatment for Fifth disease.

How can the spread of this disease be prevented?

1. Because transmission of the Fifth disease virus usually occurs before the rash develops – when a child may seem well or has a non-specific illness – excluding children with the Fifth disease rash is of no proven value. However, **it is very important** for a healthcare provider to rule out other rash-causing illnesses (e.g., measles, chickenpox) that may require exclusion from childcare.
2. Transmission of infection can be lessened by routine hygienic practices for control of respiratory infections, which include hand washing and disposal of facial tissues containing respiratory secretions.
3. People with particular concerns about contracting Fifth disease (e.g., pregnant women) should consult their healthcare providers.

FIFTH DISEASE (cont.)

Who should be excluded?

Children with Fifth disease MAY attend daycare or school, as they are not contagious after onset of rash. Routine exclusion of pregnant women from the workplace where Fifth disease is occurring is not recommended.

Reportable?

No, Fifth disease is not reportable by New Hampshire law to the Division of Public Health Services, Bureau of Infectious Disease Control. However, Public Health Professionals are available for consultation at (603) 271-4496.



GIARDIASIS

Giardiasis is an intestinal illness caused by *Giardia lamblia*, a microscopic parasite. The infectious form of the parasite is passed in the stool of an infected individual.

Who gets this disease?

Anyone can get Giardiasis. It is very common in childcare centers; especially those that have children under age three. It spreads easily among these children to their caretakers and families.

How is it spread?

The most common way a person becomes infected with giardia in the childcare setting is by the fecal-oral route. Eating food contaminated with the parasite may also infect a person. Food may become contaminated when the person preparing the food has giardiasis and has some infected stool on his/her hands because of poor hand washing habits.

Additionally, a person may become infected by drinking water that is contaminated with the parasite. Streams, ponds and springs in New Hampshire are frequently contaminated with giardiasis parasites. Water can also be contaminated with giardia when sewage enters the drinking water supply.

What are the symptoms?

The most common symptoms of a giardia infection are diarrhea, abdominal pain, cramping, decreased appetite and excess gas. There is usually no fever or vomiting. The diarrhea may last up to several months and can cause significant weight loss.

How soon do the symptoms appear?

The symptoms appear within 5-25 days or longer. The average incubation period is 1-3 weeks.

Can a person have this disease without knowing it?

Yes. Some people may have very mild infections that are not serious enough to cause them to go to a doctor. They may not feel sick at all. In some cases of giardia infection, parasites can be found in the stool from several days to several months after the symptoms have stopped.

What is the treatment?

Several drugs are effective in killing the giardia parasite. Treatment is usually necessary for persons with diarrhea.

How can the spread of this disease be prevented?

1. Wash hands thoroughly after using the toilet *and diapering a child*.
2. Wash hands thoroughly before preparing food.
3. Keep children who have diarrhea at home.
4. Staff with stool positive for giardia should not prepare food or feed children.

Who should be excluded?

Any person with diarrhea shall be excluded from food handling, from childcare agencies and from direct care of hospitalized or institutionalized patients until 48 hours after resolution of symptoms

Reportable?

Yes, giardiasis is reportable by New Hampshire law to the Division of Public Health Services, Bureau of Infectious Disease Control at (603) 271-4496.



HAEMOPHILUS INFLUENZAE

TYPE-B (aka Hib Disease)

Haemophilus influenzae type-b (Hib) is a bacterium that causes serious, sometimes fatal illnesses, most often in young children. Some of the diseases it can cause include: meningitis (an infection of the coverings of the brain), epiglottitis (an infection of the upper throat and entrance of the windpipe), cellulitis (an infection of the deep tissues, especially of the face and neck), septic arthritis (an infection and swelling of the joints), pneumonia (an infection of the lung), and bacteremia (blood stream) infections.

Who gets this disease?

This illness is primarily seen in unimmunized children under four years of age. Children under age two are most susceptible because their immune systems are not yet able to fight the bacteria. Rarely, older children and adults may develop infection.

It appears that in a setting such as the household or childcare facility – where there are young children and everyone is in close contact – there is an increased risk of one of these contacts developing Hib infection following a first case.

How is it spread?

The bacterium is passed from person-to-person by breathing in infected droplets of nose or throat fluids scattered in the air or by direct contact with these infected secretions. The bacteria cannot live on environmental surfaces – they quickly shrivel and die.

Like *meningococcus*, some people can “carry” this bacterium for a period of time without it causing illness. However, a carrier may spread the bacteria to another person who may then become ill. In a household or childcare center in which Hib infection has occurred, the number of

persons with nose or throat carriage is greatly increased; thus, risk of serious disease is also increased.

How is it diagnosed and treated?

Illnesses caused by *Haemophilus influenzae* type-b are diagnosed by signs and symptoms and by examining the blood and/or spinal fluid for white blood cells and bacteria. Spinal fluid is obtained by a physician performing a lumbar puncture (i.e., spinal tap).

How can the spread of this disease be prevented?

1. If a person develops an illness caused by Hib, close contacts of this patient (including family members and persons having intimate contact such as sleeping together, hugging and kissing) are at increased risk of developing the illness. In this situation a physician may recommend: 1) carefully watching for early symptoms of illness caused by *Haemophilus influenzae* and/or 2) taking a preventive antibiotic to eliminate the bacteria from the body before disease begins.
2. Any child or adult contact that develops symptoms consistent with Hib infection requires evaluation by a health care provider **regardless** of whether or not this person has taken preventive antibiotics.
3. A vaccination against Hib infection is available and the Advisory Committee on Immunization Practices (ACIP) recommends that all children begin the vaccine series against Hib infection at two months of age. The four dose series should be completed at 2 months, 4 months, 6 months, and 12-15 months.

HAEMOPHILUS INFLUENZA TYPE-B (cont.)

4. For unvaccinated children age 15 months or older only 1 dose of the Hib vaccine is required.
5. The Hib vaccine is **not** required for children over age 5.
6. Children in childcare aged 3-60 months are **required** to have age appropriate Hib vaccination in order to attend. Parents with specific questions about the Hib vaccine and their child should contact their child's physician. The vaccination is **not required** for school entry.
7. Notify parents or guardians about the occurrence of this illness and urge them to contact their physicians for specific medical care advice.
8. Contact the Bureau of Infectious Disease Control for recommendations about preventing the spread of this illness and assistance in implementing them.

Who should be excluded?

Children and staff who are ill with Hib infection should be excluded while they are ill and until 24 hours of antibiotic therapy has been completed.

Reportable?

Yes, *Haemophilus influenzae* infections are reportable by New Hampshire law to the Bureau of Infectious Disease Control at (603) 271-4496.



HAND, FOOT & MOUTH DISEASE

Hand, foot and mouth disease is a self-limited infection caused by the *Coxsackie A16* virus and enterovirus 71. Vesicular lesions (i.e., blisters) may appear in the mouth, on the sides of the tongue, inside the cheek and on the gums. Lesions may also occur on the palms, fingers, soles and buttocks. Most lesions persist for 7-10 days. A low-grade fever may accompany the illness for one to two days. The infection usually goes away without any serious complications.

Who gets this disease?

The infection is seen primarily in children under 10 years old but may also occur in adults. Outbreaks of hand, foot and mouth disease among groups of children in nursery schools and childcare centers during the summer and early fall are common.

How is it spread?

Having direct contact with nose and throat secretions of an infected person may spread the infection. It may also be spread by the aerosol droplet route (e.g., sneezing, coughing).

Additionally, the virus may also be spread by having contact with infected persons who may not seem sick (aka carriers) but are able to spread the infection since the virus may persist in the stool for several weeks after the acute illness is over.

What are the symptoms?

Vesicular lesions may occur in the mouth, on the sides of the tongue, inside the cheek and on the gums. Lesions also occur on the palms, fingers, soles and buttocks. Most lesions persist for 7-10 days. A low-grade fever may accompany the illness for one to two days.

How soon do symptoms appear?

People who are going to contract the infection usually do so three to six days after exposure.

Can a person have this disease without knowing it?

Yes. Infected persons who may not seem sick are able to spread infection. The virus may persist in the stool for several weeks after the acute illness is over.

How is it diagnosed and treated?

A healthcare provider may diagnose hand, foot and mouth disease based on clinical signs and symptoms. There is no specific treatment.

How can the spread of this disease be prevented?

1. Wash your hands thoroughly after using the toilet *and diapering a child*.
2. Wash hands thoroughly after handling respiratory discharges, stool and soiled articles of infected persons.
3. Discourage children from putting toys and other objects in their mouths.
4. Clean and disinfect toys and contaminated areas (e.g., diapering area, potty chairs, toilets) daily and when soiled.
5. Do not allow children to share drinking cups or eating utensils.
6. Teach children to sneeze and cough into a tissue, or into their elbow and away from other people.
7. Dispose of tissues and diapers properly; wash hands after sneezing, coughing, changing diapers and using the toilets.
8. Children may attend childcare if they feel well enough even if lesions are still present. In this situation, childcare staff should be especially careful to adhere to steps 1-7 above.
9. Grouping of symptomatic individuals, where practical, might be considered.

HAND, FOOT & MOUTH DISEASE (cont.)

Who should be excluded?

Exclusion from a childcare facility or school is not recommended. Special attention to hand washing after toileting is required.

Reportable?

No. Hand, foot and mouth disease are not reportable by New Hampshire law to the Division of Public Health Services, Bureau of Infectious Disease Control. However, Public Health Professionals are available for consultation at (603) 271-4496.



HEPATITIS A

Hepatitis A is an infection of the liver caused by the hepatitis A virus.

Who gets this disease?

Anyone can. It can spread quickly in groups of small children who are not yet toilet-trained and who cannot wash their own hands well.

How is it spread?

Hepatitis A virus is passed out of the body in the stool and is spread by the fecal-oral route, just like infectious diarrhea. Contact with stool-contaminated food, drink or environment surfaces (e.g., toilet seat, changing table) can spread the infection.

What are the symptoms?

The symptoms vary greatly, ranging from none at all to severe illness. Early symptoms can include loss of appetite, nausea, aching, fever, and stomachache. Later signs can include dark colored urine, light colored stools and jaundice (i.e., yellowing of white of eyes, eyes or skin). (Note: jaundice occurs more often among adults than children). These symptoms usually last from one to two weeks, although some adults may be sick for several months.

How soon do symptoms appear?

After the hepatitis A virus is ingested, it is between 15-50 days before illness begins. Most commonly, it begins within 25-30 days.

Can a person have this disease without knowing it?

Yes. This is especially important in the childcare setting because most young children with hepatitis A do not become ill. Children with hepatitis A without symptoms who are in diapers could easily pass the virus to unsuspecting childcare facility staff and family members.

In addition, people with hepatitis A are most likely to spread the disease to others during a period extending from 14 days before developing symptoms to one week after symptoms develop. This means that a person may be infectious to others before even realizing he or she is ill.

What is the treatment?

There is no treatment that cures hepatitis A. However, there are two shots available to help prevent illness in people exposed to patients with hepatitis A. These protective shots – either hepatitis A vaccine or Hepatitis A immune globulin (IG) – must be given within two weeks of a person's exposure to hepatitis A in order for it to be helpful. A person's healthcare provider and the New Hampshire Division of Public Health Services, Bureau of Infectious Disease Control will assist in making recommendations about administering hepatitis A vaccine or IG to contacts.

How can the spread of this disease be prevented?

1. Hepatitis A vaccine is *recommended* for children 12-23 months. The Advisory Committee on Immunization Practices (ACIP), recommends immunizing children against Hepatitis A.
2. The two dose series should be given at 12 and 18 months of age Children who are not vaccinated by age 2 years can be vaccinated at subsequent visits.
3. Wash hands thoroughly after using the toilet.
4. Wash hands thoroughly after diapering children.
5. Wash hands thoroughly before preparing food.

HEPATITIS A (cont.)

6. Clean toilet facilities thoroughly and wash hands afterward.
7. Discourage children from putting non-food items into their mouths since these items may be a source of the virus.

Who should be excluded?

Persons with hepatitis A (or suspected hepatitis A) should be excluded from daycare centers, food-handling occupations, and direct care of hospitalized and institutionalized patients for one week after the onset of symptoms (jaundice) or hepatitis A has been ruled out. A Public Health Professional will advise individuals regarding specific recommendations.

Reportable?

Yes, hepatitis A is reportable by New Hampshire law to the Division of Public Health Services, Bureau of Infectious Disease Control at (603) 271-4496.

It is important that cases associated with a childcare center be reported as soon as possible. A Public Health Professional will give specific recommendations for immunization of the people exposed.



HEPATITIS B

Hepatitis B is a disease primarily of the liver caused by the hepatitis B virus.

Who gets this disease?

In the United States, hepatitis B is primarily a disease of young adults. Children can be infected during childbirth if the mother has the virus in her blood.

How is it spread?

Only blood, semen, vaginal fluids and saliva have been shown to be infectious. Most cases are transmitted by blood (i.e., getting blood from an infected person into the open skin or the eye, nose or mouth of another person), or through sexual contact. Note: salivary transmission has rarely occurred and generally through bites. The Hepatitis virus can live on the surface of objects for 7 days or more.

What are the signs and symptoms?

Hepatitis B signs and symptoms include loss of appetite, tiredness, abdominal pain, nausea, vomiting, and sometimes rash or joint pain. Jaundice (yellowing of eyes or skin), may be present in adults but it is often absent in children. Symptoms vary from none at all to severe illness.

Can a person have this disease without knowing it?

Yes. Some people may not have the illness serious enough to seek medical attention. People who contract hepatitis B may become chronic carriers of the virus and continue to be infectious for life especially if they are infected as young children.

What is the treatment?

No medical treatment is effective for acute hepatitis B. Most adults recover from hepatitis B without intervention.

How can the spread of this disease be prevented?

1. Hepatitis B vaccine is **required** for all children in childcare and school attendance for all children born after January 1, 1993. The Advisory Committee on Immunization Practices (ACIP), recommends immunizing children against hepatitis B. The three dose series should be completed at birth, 1-2 months of age, and 6-18 months of age. (Please see Immunization requirements page for adult immunization recommendations).
2. Standard precautions should be in effect at all times. Disposable gloves should be used when dealing with any bodily fluids (blood/body fluid-soiled items, surfaces or clothing), when administering first aid (nose bleeds, cuts, scrapes, etc).
3. Disinfect surfaces and objects that are contaminated with blood or other body fluids containing visible blood. One-part bleach to 10 parts of water can be used as a disinfectant for cleaning contaminated surfaces. The bleach mixture must be changed daily.
4. Wash hands immediately after contact with blood or other body fluids containing visible blood, even if gloves have been worn.

Who should be excluded?

Children and staff who have the hepatitis B virus in their blood may attend and/or work in childcare and schools. Hepatitis B carrier children with risk factors (e.g., biting, frequent scratching, generalized dermatitis) should be assessed for exclusion on an individual basis.

Reportable?

Yes. Hepatitis B is reportable by New Hampshire law to the Division of Public Health Services, Bureau of Infectious Disease Control at (603) 271-4496.



HIV/AIDS

The human immunodeficiency virus – or HIV for short – is the name of the virus that causes the condition known as AIDS (Acquired Immunodeficiency Syndrome). HIV attacks the body's immune system and makes it unable to fight-off certain infections and cancers.

How do children get HIV?

The primary method that children become infected with HIV is through maternal transmission (i.e., the transfer of HIV) from mother-to-child during pregnancy, childbirth or breastfeeding. If medical treatment is used in combination with obstetric care and an elective caesarian section, transmission is reduced to an only 2% chance of infant transmission.

Can HIV be spread in childcare settings?

No documented cases of HIV infection have been traced to kissing, biting, playing with an infected child, or sharing food, eating utensils, toys or bathroom facilities.

Sexual transmission of HIV

With individuals that are positive, HIV is found in blood, mother's milk, semen and vaginal secretions. HIV transmission as a result of anal, oral, or vaginal intercourse has been well documented. HIV infection can also occur as a result of sexual abuse in children.

How is HIV diagnosed?

For adults rapid HIV tests are available and are used in NH. To confirm a rapid test, people should still receive a blood test. A blood test involves testing for the HIV antibody. However, use of HIV-antibody testing in children less than 18 months old may be confounded by the presence of maternally acquired HIV antibodies. Other laboratory tests such as viral culture,

nucleic acid detection or antigen test are useful in determining HIV infection in these children.

What are the symptoms?

There are a wide range of signs and symptoms seen in HIV-infected children. Symptoms may include failure to thrive, weight loss, fever, mild or severe developmental delay, neurologic deterioration and severe, prolonged or recurrent infections. In general, the interval from HIV infection to the onset of symptoms is shorter in children than adults due to the developing and immature immune system. For this reason, HIV infected women should seek medical care and treatment early on in a pregnancy.

Should children with HIV be enrolled in childcare?

Yes. Studies continue to show **no evidence of transmission** of HIV within the childcare setting. HIV infected children should therefore be enrolled in daycare if their health, neurologic development, behavior and immune status are appropriate. The decision as to whether or not a child with known HIV infection may be enrolled in childcare should be made on a case-by-case basis. The decision is best made by the child's healthcare provider.

Reportable?

Yes, both HIV infection and AIDS are reportable by New Hampshire law to the Division of Public Health Services, Bureau of Infectious Disease Control at (603) 271-4496.



IMPETIGO

Impetigo is a very common skin infection caused by *streptococcal* or *staphylococcal* bacteria. It may start at an injured spot on the skin, such as an insect bite, cut or burn. Bacteria can easily be spread by the person's hands to other areas of the body. In children, the face is often involved. The rash appears red, is elevated and may secrete fluid. The rash may have a flat honey-colored crust. The area may be itchy. The staph bacteria can cause blisters that break easily and leave raw red skin exposed. Impetigo caused by strep bacteria can be associated in very rare circumstances with the development of a kidney disease. Impetigo is most commonly seen in the warm summer months.

Who gets this disease?

Ordinarily the skin protects the body from bacteria. When the skin is broken (i.e., cut, scraped, bitten, scratched), bacteria can get under the surface, multiply and cause an infection.

Children – who typically touch everything and wash only under duress – are likely to have multiple cuts and scrapes on their bodies at all times, which make them more vulnerable to impetigo than adults. Most children have impetigo at least a few times during their growing up years; adults can get it as well.

How is it spread?

The bacteria are under, on and in the infected skin, and they are shed into the secretions and crusts. They can be spread to another person who directly touches the infected skin or a surface contaminated by the secretions or crusts. If the bacteria then gets under the top protective skin layer of the second person, they multiply and cause infection.

The incubation period for this disease is variable: Staph infections 4-10 days, Strep infections 1-3 days.

How is it diagnosed and treated?

Most of the time, impetigo can be diagnosed by the way it looks. Bacterial cultures are not usually needed. Strep and staph impetigo may look the same, although staph tends to cause blisters more often.

How can the spread of this disease be prevented?

1. If children hurt themselves and cause breaks in the skin, wash the area thoroughly with soap and water and dry carefully.
2. If you think a child may have impetigo:
 - a. Wash the rash with soap and water and cover it loosely with gauze, a bandage, or clothing.
 - b. Be sure anyone who touches the rash wears disposable gloves carefully.
 - c. Dispose of any soiled tissues, bandages and gloves carefully. Keep any dirty clothing in a plastic bag and give to the parent for laundering at home.
3. Ask the parents to have the child seen by his/her healthcare provider. Keep children's finger nails short as to prevent damage from scratching.

Who should be excluded?

It is recommended that untreated children and staff be excluded from the childcare facility until 24-hours after they have begun treatment.

Reportable?

No. Impetigo is not reportable by New Hampshire law to the Division of Public Health Services, Bureau of Infectious Disease Control. However, Public Health Professionals are available for consultation at (603) 271-4496.



LYME DISEASE

Lyme disease is caused by a bacterium, *Borrelia burgdorferi*. In New England it is transmitted by a certain type of tick, commonly called the deer tick or black-legged tick (scientific name: *Ixodes scapularis*). Lyme disease may cause symptoms affecting the skin, nervous system, heart and/or joints of an individual. The NH Department of Health & Health Services made Lyme disease reportable in October 1990. During recent years, the incidence of Lyme disease has increased in New Hampshire.

Who gets this disease?

The bacterium that causes Lyme disease is transmitted within the natural cycle of the deer tick, which feed on animals such as mice, opossums, dogs and deer. Certain stages of the tick – especially the nymph and adult – can feed on a human; if the tick is infected with the bacteria it can cause infection in people. Cases of Lyme disease have also been reported in domestic animals. There is no evidence that Lyme disease is transmitted from person to person. For example, a person cannot get infected from touching, kissing, or having sex with a person who has Lyme disease. Lyme disease acquired during pregnancy may lead to infection of the placenta and possible stillbirth. However, no negative effects on the fetus have been found when the mother receives appropriate antibiotic treatment. There are no reports of Lyme disease transmission from breast milk.

People who spend time in wooded or grassy areas, including areas around the home, are at greater risk of Lyme disease. Although persons of all ages and gender are susceptible to Lyme disease, it is most common among children aged 5-9 and adults aged 55-59. Most cases of Lyme disease occur between April and October. Current data indicates that it is possible for someone to get Lyme disease more than once.

What are the symptoms?

The illness usually occurs during the summer months and generally starts as a large circular reddish expanding rash around or near the site of the tick bite. (NOTE: In some cases, a rash may not occur). Multiple rash sites may occur. During the rash stage, or occasionally prior to the rash, other symptoms such as fever, headache, fatigue, stiff neck and muscle and/or joint pain may be present. These may last for several weeks. If left untreated – within a few weeks to months after the rash onset – complications such as meningitis and heart abnormalities may occur and other body systems may be affected. Swelling and pain in the large joints may recur over many months or years.

How soon do symptoms appear?

Symptoms usually begin within a month of a tick bite, generally 3-32 days.

What is the treatment?

Current therapy includes the use of antibiotics. Early diagnosis improves the outcome of treatment.

How can the spread of this disease be prevented?

Special precautions to prevent exposure to ticks should be used. Apply insect repellent containing greater than 20% DEET, on clothes and exposed skin. Clothes (especially pants, socks, and shoes) may be treated with permethrin, which kills ticks on contact. Permethrin can also be used on tents and some camping gear. **Do not use permethrin directly on skin.** Always follow the manufacturer's instructions when applying any repellents. Long pants and long sleeves help keep ticks off skin. Pant legs may be tucked into socks or boots and shirt into pants to keep ticks on the outside of clothing. After being outdoors, wash and dry clothing at a high temperature to kill any

LYME DISEASE (cont.)

ticks that may remain on clothing. Perform tick checks after being outdoors. Early removal of ticks can reduce the risk of infection. If a tick is attached to the skin for less than 24 hours, the chance of getting Lyme disease is extremely small. Landscaping to reduce tick habitats and prevent deer and rodents around the home may be helpful.

How should a tick be removed?

To remove an attached tick, grasp it with one of the tick-removal tools found in stores or fine-tipped tweezers as close as possible to the attachment site (i.e., skin) and pull upward and out with a firm and steady pressure.

Do not handle the tick with bare hands, if using your fingers to remove a tick be sure to use a disposable towel when removing the tick. Be careful not to squeeze, crush, or puncture the body of the tick, which may contain infectious fluids. After removing the tick, thoroughly cleanse the area with an antiseptic. Seek medical attention if there is a concern about incomplete tick removal.

Do not attempt to remove ticks by using Vaseline, lit cigarettes, or other home remedies; doing so may actually increase the chances of contracting a tick-borne disease.

Who should be excluded?

Exclusion is not necessary since the disease is not spread from person-to-person.

Reportable?

Yes. Lyme disease is reportable by New Hampshire law to the Division of Public Health Services, Bureau of Infectious Disease Control at (603) 271-4496.



MEASLES

Measles (aka, rubeola, red measles or hard measles) is a very communicable viral illness that can be prevented by immunization. Usually it causes a rash, high fever, cough, runny nose and watery eyes. The disease lasts one to two weeks. Measles may be complicated by an ear infection or pneumonia. One out of every 1,000 children who gets measles develops an inflammation of the brain (i.e., encephalitis). Encephalitis can lead to convulsions, deafness or mental retardation. Approximately one child in every 10,000 who gets measles dies from it.

Who gets this disease?

Measles cases are generally limited to three groups: 1) children less than 15 months of age (who are too young to have been immunized), 2) those over 15 months of age but remain unvaccinated and 3) adolescents and young adults who may have received an earlier ineffective measles vaccine prior to 1968 OR graduated from school prior to the mandatory measles vaccination law OR who have received only one dose of live virus measles vaccine. Adults born prior to 1957 are generally considered to be immune against measles.

How is it spread?

Susceptible individuals spread measles by large infectious droplets or direct contact with the nasal or throat secretions of infected persons. Inhaling air that has tiny infectious droplets from sneezes and coughs also can spread it. **Measles is one of the most readily transmissible communicable diseases.** The communicable period is greatest prior to or just after rash onset.

What are the symptoms?

The first signs and symptoms of measles – which appear approximately 10-days after exposure – are similar to the common cold: cough, runny nose, fever greater that can reach as high as 103-105 degrees Fahrenheit, and red and watery eyes. After these cold-like symptoms a rash develops, typically beginning on the face and then spreading downward over the entire body. This rash lasts 4-10 days. Infected persons may also experience loss of appetite or diarrhea.

Infected persons are contagious from the appearance of the first cold symptom to four days after the appearance of the rash. A small percentage of immunized children may become infected if their bodies fail to respond adequately to the vaccine.

How can the spread of this disease be prevented?

The Advisory Committee on Immunization Practices (ACIP) recommends that children be immunized against measles between 12 to 15 months of age. Children who are immunized before 12 months of age need to be re-immunized.

Children 15 months and older are **required** to have one dose of measles vaccine for daycare and school admittance. A second dose of measles vaccine is **required** between 4-6 years of age.

Who should be excluded?

Children and staff with measles shall be excluded from the school or work for at least four days after the appearance of the rash. If children are unimmunized for medical, religious or other reasons they should be excluded for at least 2 weeks after the onset of the rash in the last case of measles reported in the child care setting.

MEASLES (cont.)

Reportable?

Yes. Measles is reportable immediately by New Hampshire law to the Division of Public Health Services, Bureau of Infectious Disease and Control at (603) 271-4496.



MENINGOCOCCAL ILLNESS

Meningococcal Illnesses are caused by a bacterium called *Neisseria meningitidis* (*N. meningitidis*) and are serious, sometimes fatal illnesses. The most common illness is meningitis, an infection of the coverings of the brain. Meningitis caused by *N. meningitidis* must be treated immediately with hospitalization and IV (intravenous) antibiotics. The disease usually starts suddenly with fever, chills, and lethargy (i.e., a feeling of tiredness) and a rash with fine red “freckles” or purple splotches. With meningitis, older children and adults may complain of severe headache, neck pain and neck stiffness. In younger children, unusual irritability, poor appetite, excessive and high-pitched crying, vomiting and fever may be seen.

Who gets this disease?

Meningococcal illnesses affect children less than 5 years primarily affecting infants less than 24 months. It peaks again in adolescents 16-21 years of age. There is a high incidence *N. meningitidis* with people living in crowded living conditions such as barracks and institutions. Freshman college students living in dormitories have a higher incidence than other college students not living in dorms. This illness can affect any age group.

How is it spread?

The bacterium is passed from person to person when they are in very close contact. It is spread through infectious droplets of respiratory tract secretions (e.g., sneezing, coughing, nasal discharge, saliva). It can also be passed if people touch infected secretions then put their hands in their noses, eyes or mouths. However, the bacteria cannot live on environmental surfaces – they quickly shrivel and die.

People can carry the germs, without knowing it, in their noses, mouths or throats without ever getting sick themselves. This is called “carrying” the germ or being a “carrier”. The germs can be spread from carriers to other people who may then develop a meningococcal illness. Obviously, sick people can also pass the germs on.

The time from exposure to illness can be from 2-10 days, but it is usually one to four days. After one infection has occurred in a facility, there will be more than the usual number of people carrying the germ, so the risk of spread and serious disease becomes greater.

How is it diagnosed and treated?

Meningococcal infections are diagnosed by signs and symptoms and by examining a sample of blood and/or spinal fluid for white blood cells and bacteria. Spinal fluid is obtained by a physician, who performs a lumbar puncture (i.e., spinal tap).

People with these infections almost always require hospitalization and are treated with antibiotics for 5-7 days.

How can the spread of this disease be prevented?

1. Meningitis Conjugate Vaccine is recommended for all children 11-12 years of age. It is also recommended for all children 13-18 years of age who have not been previously vaccinated. Unvaccinated college freshmen living in a dormitory should be vaccinated.
2. Meningitis Quadrivalent vaccine is available for children 2 years old and older.
3. If a person develops a meningococcal illness in a childcare center, all parents and staff must be notified immediately.

MENINGOCOCCAL ILLNESS (cont.)

4. If a person develops a meningococcal illness, close contacts of this patient (including family members and person having intimate contact such as sleeping together, hugging and kissing) are at increased risk of developing the illness. In this situation, a physician or public health professional may recommend: 1) watching for early symptoms of meningococcal illness, and/or 2) taking a preventive antibiotic to eliminate the bacteria from the body before disease begins.
5. Any child or adult who is a close contact and who develops symptoms such as fever or headache require prompt evaluation by a healthcare provider **regardless** of whether or not this person has taken the preventive antibiotic.
6. Monitor the situation closely for two to three weeks. Make sure all ill children are seen by their doctors and that you are notified if another person develops meningococcal disease.
7. Notify parents or guardians about the occurrence of this illness and urge them to contact their *healthcare provider* for specific medical advice.
8. Childcare centers should contact the NH Department of Health & Human Services, Bureau of Infectious Disease and Control for recommendations about preventing spread of this illness and for assistance in implementing them.

Who should be excluded?

Children with meningococcal disease are too ill to attend childcare.

Reportable?

Yes. Meningococcal illnesses are reportable by New Hampshire law to the NH Department of Health & Human Services, Bureau of Infectious Disease and Control at (603) 271-4496.



MRSA SKIN INFECTIONS

A frequent cause of skin infections is a bacteria called *Staphylococcus aureus* (Staph). Most of these skin infections are minor. However, staph bacteria can also cause more serious infections such as pneumonia and bloodstream infections. Some staph bacteria are resistant to certain antibiotics and are known as MRSA (methicillin-resistant *Staphylococcus aureus*).

What is a MRSA skin infection?

A MRSA skin infection can be a pimple, rash, boil, or an open wound. MRSA is often misdiagnosed as spider bites. MRSA bacteria are commonly found on the skin of healthy persons. MRSA infections often begin with an injury to the skin. Symptoms of MRSA infection include redness, warmth, swelling, tenderness of the skin, and boils or blisters. Sometimes it does not cause any problems; sometimes it causes minor infections, such as pimples or boils. If left untreated, it can cause serious infections.

How do MRSA skin infections spread?

MRSA lives on skin and survives on objects for 24 hours or more. MRSA can rub off on the skin of an infected person onto the skin of another person during rigorous skin-to-skin contact. Or, the MRSA bacteria can come off of the infected skin of a person onto a shared object, and get onto the skin of the next person who uses it. Examples of commonly shared objects include towels, soap, razors and athletic equipment.

How can I prevent myself or my family members from getting infected?

Wash your hands with soap and warm water. Keep cuts and scrapes clean with soap and water. Avoid skin contact and sharing personal items with anyone you suspect could have a MRSA skin infection. When using protective gloves to treat the infected area, remove and dispose of them

properly; wash your hands with soap and water. Do not share personal items with other persons.

What should I do if I think I have a skin infection?

Consult your healthcare provider as soon as possible if you think you have a skin infection. Early treatment can help you prevent the infection from getting worse. Be sure to follow directions from your doctor or healthcare provider closely, even when you start to feel better. Not taking all of your antibiotics leads to stronger, antibiotic-resistant bacteria.

If my healthcare provider told me that I have a MRSA skin infection, how do I keep others from getting infected?

- Keep the infected area covered with clean, dry bandages. Pus from infected wounds is very infectious.
- Wash your hands frequently with soap and warm water, especially after changing your bandages or touching the infected skin.
- Regularly clean your bathroom, kitchen, and all other rooms, as well as your personal items. Wash clothes and other items that become soiled with hot water or bleach, when possible.
- Drying clothes in a hot dryer, rather than air-drying them also helps to kill bacteria in clothes.
- Tell any healthcare provider that treats you during the infection that you have an MRSA skin infection.

Reportable?

No. MRSA is not reportable by New Hampshire law to the Division of Public Health Services, Bureau of Infectious Disease Control. However, Public Health Professionals are available for consultation at 603-271-4496.

MRSA SKIN INFECTION (cont.)

For further information, refer to the Centers for Disease Control & Prevention website at www.cdc.gov or the NH Department of Health & Human Services website at www.dhhs.nh.gov .



MUMPS

Mumps is a viral illness that usually causes swelling and tenderness of the salivary glands, particularly the gland at the angle of the jaw. Headache, slight fever and earache are common. Possible complications include Meningitis (an inflammation of the coverings of the brain and spinal cord), Encephalitis (an inflammation of the brain), deafness and, particularly in adolescent or adult males, inflammation of the testicles. Mumps during pregnancy can result in loss of the fetus.

Who gets this disease?

Mumps may be seen in unimmunized children, or adolescents and young adults who graduated from school prior to laws requiring mumps immunization. Most adults born before 1957 have been infected by exposure to the disease and are probably immune.

How is it spread?

The mumps virus is found most often in saliva. It is transmitted by direct contact or by droplet spread of the virus in the air through sneezes and coughs. Mumps is most infectious 48 hours **prior** to the onset of symptoms.

What are the symptoms?

The most common symptoms are: 1) fever with headache and earache, loss of appetite and 2) swollen glands in front of and below the ear.

Symptoms appear 12-25 days after exposure. Infected persons are contagious from 1-2 days **before** to 5 days **after** swelling begins. A small percentage of immunized children may be infected with mumps if their bodies fail to respond adequately to the vaccine.

How can the spread of this disease be prevented?

The national Advisory Committee on Immunization Practices (ACIP) recommends that children be immunized against mumps. This is frequently combined with measles and rubella vaccine, which is **required** for childcare and school attendance. Children should receive this vaccine between 12-15 months of age and again between 4-6 years of age.

Who should be excluded?

A child or staff member with mumps should not return until five days after the onset of swelling. Any susceptible, unvaccinated child or staff member at a childcare center shall not return to the center until 26 days after onset of parotid gland inflammation in the last person with mumps in the center. Any person so excluded may return to the center immediately if he/she receives mumps vaccine.

Reportable?

Yes. Mumps is reportable by New Hampshire law to the Division of Public Health Services, Bureau of Infectious Disease Control at (603) 271-4496.



NOROVIRUS

What is Norovirus?

Noroviruses are a group of viruses that cause the “stomach flu”, or gastrointestinal (stomach or digestive) illness. Norovirus infection occurs occasionally in only one or a few people or it can be responsible for large outbreaks, such as in long-term care facilities.

Who gets Norovirus?

Norovirus infects people of all ages worldwide and anyone can become infected. There are many different strains of norovirus, which makes it difficult for a person’s body to develop long lasting immunity. Therefore, Norovirus illness can reoccur through a person’s lifetime. In addition, because of differences in genetic factors, some people are more likely to become infected and develop more severe illness than others.

How does someone get Norovirus?

Norovirus is spread from person to person via fecal-oral route, but can also be spread through the air during vomiting. Good hand washing is the most important way to prevent the transmission of Norovirus. Outbreaks have been linked to sick food handlers, ill healthcare workers, cases in facilities such as nursing homes spreading to other residents, contaminated shellfish, raw or unpasteurized milk, and water contaminated with sewage.

What are the symptoms of Norovirus?

The most common symptoms include nausea, vomiting, watery diarrhea, and stomach cramps. Fever is usually low grade or absent. Infected people generally recover in 24-60 hours and serious illness rarely occurs.

How soon after exposure do symptoms appear?

Symptoms of Norovirus illness usually begin about 24 –48 hours after ingestion of the virus.

How is Norovirus infection diagnosed?

Laboratory diagnosis can be performed in the New Hampshire Public Health Laboratories when there are multiple cases. Diagnosis is often based on the combination of symptoms and the short time of the illness.

What is the treatment for Norovirus infection?

No specific treatment is available. People who become dehydrated might need to be rehydrated by taking liquids by mouth. Occasionally, a patient may need to be hospitalized to receive intravenous fluids.

How can Norovirus be prevented?

While there is no vaccine for Norovirus, there are precautions people should take:

- ❖ Wash hands with soap and warm water after using the bathroom and changing diapers
- ❖ Wash hands with soap and warm water before preparing or eating any food
- ❖ Cook all shellfish thoroughly before eating
- ❖ Wash raw vegetables before eating
- ❖ Dispose of sewage in a sanitary manner

Who should be excluded?

Food handlers, healthcare workers and childcare workers should be excluded for 48 hours after resolution of symptoms. Children with non-specific diarrhea should be excluded until symptoms resolve.

NOROVIRUS (cont.)

Reportable?

No. Norovirus is not reportable by New Hampshire state law to the Division of Public Health Services, Bureau of Infectious Disease Control. However, Public Health Professionals are available for consultation at (603) 271-4496.

For further information, refer to the Centers for Disease Control and Prevention website at:

<https://www.cdc.gov/>

Or the NH Department of Health & Human Services website at:

<https://www.dhhs.nh.gov/>



ORAL HERPES (aka, Cold Sores)

Oral herpes – which is also referred to as cold sores – is caused by a virus call *herpes simplex type 1*. This infection is commonly acquired for the first time in early childhood and may reappear throughout a person’s lifetime.

Who gets this disease?

Anyone can get oral herpes.

How is it spread?

Oral herpes is spread through close person-to-person contact such as direct contact with saliva or the sores (e.g., kissing).

What are the symptoms?

There are initial infections and in some people recurrent sores (fluid-like blisters). In young children the initial infections may not cause any symptoms or can involve many sores within the mouth, on the cheeks, lips and/or gums. The sores will crust and heal within a few days. If the sores within the mouth are extensive, children can run a fever and refuse to drink or eat.

How soon do the symptoms appear?

In initial infections, it takes from 2 to 14 days from the time a person is exposed until the sores become apparent. Recurrent sores occur in individuals when the virus becomes active after being dormant.

What is the treatment?

Most cold sores heal in 3-4 days without treatment. There are ointments and medications available that may shorten the healing time but there is no cure for oral herpes. It is best to check with your physician to see if treatment is indicated.

How can the spread of this disease be prevented?

1. Frequent hand washing.
2. Caregivers should wear gloves when contact with sores is necessary (e.g., when applying medication).
3. Clean and disinfect mouthed toys daily or when soiled.
4. Do not kiss an infected person when lesions are present.

Who should be excluded?

No exclusion is necessary for mild oral herpes in children who are in control of their mouth secretions. Exclude children who do not have control of oral secretions when active sores are present inside the mouth.

Reportable?

No. Oral herpes is not reportable by New Hampshire law to the Division of Public Health Services, Bureau of Infectious Disease and Control. However, Public Health Professionals are available for consultation at (603) 271-4496.



PEDICULOSIS CAPITIS (Head Lice)

Head lice are tiny insects that live only on people's scalps and hair. The adults hatch from small eggs, called nits, which are attached to the individual hairs near the scalp. Nits may be found throughout the hair, but are most often located at the back of the scalp, behind the ears and the top of the head. The eggs hatch in 10-14 days, with new lice reaching adulthood in about 10 days. The female louse can live for 21-30 days, and lays about six to eight eggs a day. The lice live by biting and sucking blood from the scalp.

The major symptom of head lice is itching caused by the bite of the louse. Persistent scratching of the head and back of the neck should be viewed with suspicion. Often red bite marks and scratch marks can be seen on the scalp and neck and a secondary bacterial infection causes discharge and crusting. Swollen neck glands can also occur related to an infection from scratching.

Who gets this disease?

Contrary to popular belief, head lice are not a sign of unclean people or homes. They can occur at any age and to either sex. Anyone who has close contact with an infected person or shares personal items can become infested.

How is it spread?

Lice do not jump or fly. They cannot be caught from grass, trees, or animals. They are spread only by crawling from person-to-person directly or onto shared personal items, such as combs, brushes, head coverings, clothing, bedding and towels. Frequent bathing or shampooing will not prevent lice or eliminate them once they are established.

How is it diagnosed and treated?

Lice are less than 1/8-inch long and are usually light brown in color. They avoid light, which makes it difficult to see them. The diagnosis is

most often made by finding nits within a ¼-inch of the scalp. Nits are tiny, plump, pearl gray colored; oval-shaped specks attached to the hair and cannot be easily moved up or down the hair (as could specks of dandruff). It helps to use a magnifying glass and natural light when searching for them. The best places to look are the hair on the back of the neck, behind the ears and the top of the head. Hatched eggs can be found further out on the hair shaft and are snow-white and conspicuous.

Treatment is directed at getting rid of the lice from both the infested person and his/her surrounding and personal items. All household members and persons with close physical contact with the infested person should be examined for lice and treated if infested (live lice are seen). Some healthcare providers may simultaneously treat all members of a household.

Treating the infested person.

Consult a physician before treating: (1) infants, (2) pregnant or nursing women, or (3) anyone with extensive cuts or scratches on the head or neck. For others, there are several medicines available to kill head lice. They are used like shampoo. Many head lice medications are available at your local drug store without prescription and some products are available by prescription. All of these products must be used carefully and according to direction.

There are several over-the-counter (OTC) name brand products which include A-2000 Pronto, R&C, Rid and Triple X that all contain the active ingredient Pyrethrins. Pyrethrins are natural extracts from the chrysanthemum flower. Though safe and effective, pyrethrins only kill crawling lice, not unhatched nits. A second treatment is recommended in 7-10 days to kill any newly hatched lice. Treatment failures are common.

PEDICULOSIS CAPITIS (Head Lice) cont.

Nix is another commonly available OTC medication that contains the active ingredient Permethrin. Permethrin is safe and effective and may continue to kill newly hatched lice for several days after treatment. A second treatment may be necessary in 7-10 days to kill any newly hatched lice that may have hatched after residual medication from the first treatment was no longer active. Treatment failures are common.

Prescription medications used to treat head lice include Lindane (Kwell) and Malathion (Ovide). Consult with your healthcare provider on the proper use of these prescription medications. For these medications, retreats in 7-10 days ONLY if crawling bugs are found.

Although these products will kill lice, none will kill 100% of the nits. Nit removal after shampooing may be time-consuming and difficult due to their firm attachment to the hair. A solution of vinegar and water may help make removal easier. Special, fine-tooth combs can be used to aid in nit removal. Most treatment requires retreatment in 7-10 days. A daily nit check for the next ten days is advisable. If there is evidence of new nits (less than ¼-inch from the scalp) or newly hatched lice, it may be necessary to repeat treatment. (NOTE: Unless reinfection occurs, more than two treatments are unnecessary and can be dangerous).

Treating the surroundings/personal items in the childcare center.

Head lice can only survive 24-48 hours if they fall off a person and cannot feed. You don't need to spend a lot of time or money on cleaning activities. Follow these steps to help avoid re-infestation by lice that have recently fallen off the hair or crawled onto clothing or furniture.

1. Machine-wash in HOT water all washable items belonging to the daycare facility that may contain lice.

2. Non-washable (e.g., furry toys, pillows) can be put in a HOT dryer for 20-minutes or dry-cleaned.
3. Things that cannot be washed, dried, or dry-cleaned can be sealed in a plastic bag for two weeks, the duration of the life cycle of the louse.
4. Soak combs and brushes for 1 hour in rubbing alcohol, Lysol™, or wash with soap and hot (130 F) water.
5. Vacuum the floor and furniture. The risk of getting re-infested from a louse that has fallen onto the carpet or sofa is very small.
6. Insecticide sprays are not recommended and can be harmful to people and animals.

How can the spread of this disease be prevented?

1. General cleanliness at the center, as previously outlined, should be practiced.
2. Children should not share personal items such as clothing, brushes, combs, hats, etc.
3. Each child should have his/her own crib mat and should not switch.
4. Children's personal belongings should be stored separately.
5. Caregivers should learn to recognize nits and should help regularly check children's hair when there is a known case of head lice in the center.
6. If a case is identified, the center should follow cleaning procedures outlined above.

Who should be excluded?

Routine exclusion of school-aged children with head lice is not recommended. The child's parents or guardian should be notified when head lice is identified by a care provider or teacher. The child's parent or guardian should be telephoned/emailed or a note sent home with the child at the end of the school day stating that prompt, proper treatment of this condition is in the best interest of the child and his/her

PEDICULOSIS CAPITIS (Head Lice) cont.

classmates. A child **should** be allowed to return to school after proper treatment even if nits are still present. “No Nits Policies” are not effective and should be discouraged. Mass screenings are also not recommended but close contacts should be checked ideally.

Children in preschool or daycare settings who have visible live lice may need to be excluded only if direct head to head contact cannot be avoided.

Reportable?

No. Pediculosis is not reportable by New Hampshire law. However, the Bureau of Infectious Disease Control professionals are available for consultation at (603) 271-4496.



PERTUSSIS (Whooping Cough)

Pertussis is a very contagious bacterial infection of the respiratory tract. Usually it causes a persistent cough that follows a normal cold. The child has episodes of violent coughing that end with the typical high-pitched *Whoop*, and occasionally vomiting is seen. Between bursts of coughing the child appears well. Coughing attacks may continue to occur for 10-12 weeks. Pertussis is frequently complicated by pneumonia and ear infections, particularly in infants. Death from pertussis is rare.

Who gets this disease?

Pertussis occurs in all age groups. Untreated cases in older children and adults can spread pertussis to infants and young children at home. It is important that all infants and young children be up to date with pertussis vaccination. The most serious disease and complications are seen in infants and very young children.

How is it spread?

The bacterium is spread by direct contact with discharge from the nose or throat of an infected person, or by breathing in infected droplets in the air when an infected person coughs. The period of greatest risk of spread is during the early “cold” stage.

What are the symptoms?

The disease begins with the cold like symptoms such as runny nose and watery eyes, and cough. The cough becomes more persistent. Within 2 weeks the cough occurs as bouts of uncontrollable cough often with a “whoop” sound. Vomiting often follows the cough. The “whoop” sound may be absent in older children and adults.

What if a child is exposed to pertussis?

1. All close contacts younger than 7 years of age who have not completed the four-dose primary series should complete the series with the minimum intervals.
2. Close contacts who are 4-6 years of age and who have not yet received the second booster dose (usually the fifth dose of DTaP) should be vaccinated.
3. Any close contact 11 years old and older can receive a single dose of Tdap if it has been at least 2 years since the previous Td.
4. Your physician may recommend antibiotics for your child and all close contacts.

How can the spread of this disease be prevented?

A combination vaccine of Diphtheria, Tetanus and acellular Pertussis (DTaP) is **required** for both childcare and school attendance. The Advisory Committee on Immunization Practices (ACIP) recommends immunizing children against pertussis, along with diphtheria and tetanus, beginning as early as six weeks of age. The five dose series should be completed at 2 months, 4 months, 6 months, and 15-18 months, and 4-6 years of age. If the child has a contraindication to the pertussis vaccine, they would receive a vaccine called DT which does not contain the pertussis antigen.

A single booster dose of Diphtheria, Tetanus, and acellular Pertussis (Tdap) is recommended for adolescents 11-18 years of age who have completed the recommended childhood DTP/DTaP vaccination series and have not received Tetanus and diphtheria (Td) booster dose. Adults who are 18 and older should receive one dose of Tdap If they have received the Td booster an interval of at least 2 years between Td and

PERTUSSIS (Whooping Cough) cont.

Tdap is encouraged to reduce the risk for local and systemic reactions after Tdap vaccination. The Td booster is recommended every 10 years thereafter to provide protection.

Reportable?

Yes. Pertussis is reportable by New Hampshire law to the Division of Public Health Services, Bureau of Infectious Disease Control at (603) 271-4496.



PINWORMS (Enterobuius Vermicularis)

Pinworms are tiny worms that live in the lower intestine of people. Most often at night, female worms come out to the anus of an infected person and lay their microscopic eggs.

Who gets this disease?

Anyone can. It is particularly common in preschool and school-aged children and therefore in daycare centers.

How is it spread?

Pinworm eggs can be transferred orally from the infected individual to another person. The eggs can also be transferred indirectly through clothing, bedding, food and other contaminated articles.

What are the symptoms?

People may be without symptoms or they may have anal itching, feel irritable and/or have disturbed sleep.

How soon do the symptoms appear?

Symptoms usually appear between two-weeks and two-months. The life cycle requires two to six weeks to complete.

Can a person have this disease without knowing it?

Yes. Often, members of an infected child's household are also unknowingly infected and, if not treated, can reinfect a treated child and other people.

What is the treatment?

There are several medicines available to treat this infection. Often healthcare providers will treat the entire family if one member of the home is infected.

How can the spread of this disease be prevented?

1. Wash hands thoroughly after using the toilet and after diapering children.
2. Children should be bathed in the morning so that any eggs laid at night can be removed.
3. Wash hands thoroughly before preparing food.
4. If you suspect a child has pinworms, based on symptoms, this child should see a physician for the correct diagnosis and treatment.
5. Each child's dirty clothing should be stored separately in plastic bags and sent home for laundering.
6. All bedding and clothing should be washed in **HOT** water.
7. Every child should have his/her own crib or mat and should not switch sheets with other children. Mats should be kept clean.
8. Clean and vacuum play and sleeping areas daily for several days after diagnosis.

Who should be excluded?

Once the diagnosis of pinworms is made, the child should be appropriately treated. After the treatment the child does not need to be kept out of childcare.

Reportable?

No, pinworms are not reportable by New Hampshire law to the Division of Public Health Services, Bureau of Infectious Disease Control. However, Public Health Professionals are available for consultation at (603) 271-4496.



POLIOMYELITIS (Polio)

Poliomyelitis is caused by a virus. Polio typically produces weakening of the muscles, sometimes to the point of requiring assistance to move about. The illness ranges widely in severity.

Who gets this disease?

Today, polio cases occur mainly among unimmunized young children or among members of groups that refuse immunization.

How is it spread?

The virus is spread by direct contact with infected stool and throat secretions. Infected persons are most contagious during 7-10 days before and after onset of symptoms.

What are the symptoms?

The illness ranges in severity from a mild, unnoticed febrile illness to meningitis (an inflammation of the covering of the brain and spinal cord), to paralysis and even death.

How can the spread of this disease be prevented?

Two types of polio vaccine have been available: trivalent oral polio vaccine (TOPV) and inactivated polio vaccine (IPV). The national Advisory Committee on Immunization Practices (ACIP) recommends four doses of polio vaccine. The four dose series should be completed at 2 months, 4 months, 6-18 months, and 4-6 years. The vaccine is **required** for both childcare and school attendance.

Who should be excluded?

Children and staff should be excluded during the acute phase of illness.

Reportable?

Yes. Poliomyelitis (polio) is reportable by New Hampshire law to the Division of Public Health Services, Bureau of Infectious Disease Control at (603) 271-4496.



RABIES

Rabies is a viral disease that attacks the central nervous system. It can be transmitted to people through contact with the saliva or brain and spinal cord tissue of a rabid animal as described below. It is a fatal disease for humans but may be effectively prevented. Rabies in certain animals, especially wildlife, is common throughout New Hampshire.

What are the signs of rabies in animals?

Animals may act friendly or become vicious. Animals that are usually active only at night may be found active during the day. Animal behavior may be unusually aggressive. Animals infected may seem withdrawn, hide in corners or refuse food. The most important thing to remember is that a rabid animal will usually be infectious to people or other animals for a varying period of time before a change in their appearance or behavior.

Who gets this disease?

People can get rabies through two types of exposure: bite exposure and non-bite exposure.

- **Bite exposure:** Any penetration of the skin by the teeth of an infected animal. All bites regardless of location, pose a potential risk for rabies.
- **Non-bite exposure:** Infectious saliva, brain or spinal cord tissue from a rabid animal comes into contact with the lining of a person's eye, nose or mouth or with a cut, abrasion or other pre-existing break in the person's skin.

What about bats and rabies?

Bats are responsible for the majority of domestically acquired human cases of rabies. People usually know when a bat has bitten or otherwise exposed them to rabies. However, because bats have small teeth that may not leave obvious marks, there are certain situations when a

person may be considered exposed to rabies even in the absence of an obvious bite, including:

- If a person awakens to find a bat in their room
- A bat is seen in the room of an unattended child, or
- A bat is seen in the room of a mentally impaired or intoxicated person.

People cannot get rabies from having contact with bat guano (feces), blood or urine. If an exposure is possible, and the bat is available, the local animal control authority should be contacted to aid in capturing the animal for testing.

What are the symptoms of rabies in humans?

Symptoms of rabies in people include apprehension, anxiety, headaches, fever, tiredness, paralysis, muscle spasm in the throat leading to fear of water, delirium/hallucinations, convulsions, and, in almost all cases, death. Symptoms are progressive and without medical intervention the usual duration is 2-6 days; death is often due to respiratory or cardiac failure.

What is the treatment?

If a person is bitten or has a non-bite exposure, immediately wash the wound thoroughly with soap and water for several minutes. (NOTE: flush an exposed eye, nose or mouth with water or saline). This is extremely important as it may prevent the rabies virus from entering the body tissue and prevent infection. Then, the person should be seen immediately by a physician or go to an emergency department for examination and any needed treatment.

If indicated, a series of shots should be given. One of the shots (Human Rabies Immune Globulin) is injected around the site of the

RABIES (cont.)

exposure to provide immediate protection while the rabies vaccine is given in the arm muscle. A total of 5shots (4 shots of vaccine and one of Human Rabies Immune Globulin-may be more than one and is based on body weight) are given over one month. If an individual has had rabies vaccine in the past, this treatment will vary. To work best, these shots should be given as soon as possible after the exposure. If the animal has been caught and will be tested for rabies or quarantined for 10 days (dogs, cats, and ferrets only), treatment can usually be delayed until results are available or quarantine is over. Contact the local animal control authority to aid in capturing the animal for confinement and observation or testing.

Is there a cure?

There is no cure for rabies once the infected person becomes ill with the disease. Appropriate rabies immunizations given before the onset of illness are effective in preventing the disease. People whose work or hobbies bring them frequently into contact with potentially rabid animals should have a series of three rabies vaccine shots before they are exposed. They will then require only two vaccine shots after exposure.

How can the spread of this disease be prevented?

1. Do not handle wild animals. Teach children to avoid wildlife, strays and all other animals they don't know. Call the New Hampshire Fish and Game Department at (603) 271-3361 to report dead, sick or injured animals. Call the local animal control officer for domestic animal exposures.
2. If bitten by a wild or domestic animal, seek medical attention immediately and notify the local animal control officer.
3. All bites by wild animals or contact with their saliva or brain or spinal cord tissue

should be considered as possible exposure to rabies and must be evaluated medically.

4. Keep trash containers tightly closed. Garbage attracts animals like skunks and raccoons.
5. Vaccinate all dogs and cats against rabies and make sure their shots are kept up-to-date.
6. If another animal has injured a dog, cat or other pet, handle it only with thick rubber gloves and have it examined by a veterinarian right away. Saliva from an attacking rabid animal remains infectious on the attacked pet's fur until it has thoroughly dried.

Reportable?

Yes. Rabies in animals and humans is reportable by New Hampshire law to the Division of Public Health Services, Bureau of Infectious Disease Control at (603) 271-4496.



Ringworm (Tinea)

Tinea, more commonly called ringworm is a skin infection caused by a fungus that lives on the skin, surfaces of items, or household items – like bedding, clothing, or toys. Ringworm can affect any part of the body including the scalp.

Who get this disease?

Anyone can get the disease. It is transmitted through direct contact with the fungus including touching another person or surface containing the fungus. Ringworm can also be transmitted by contact with animals (e.g. cats and dogs).

What are the symptoms?

Ringworm affecting the skin causes a red, circular patch to form. The patch usually has a raised edge. Ringworm between the toes, or more commonly called athlete's foot, causes the skin between the toes to appear cracked and peeling. Ringworm of the scalp can cause redness of the scalp or loss of hair.

Symptoms typically appear between 4-14 days after contact with the fungus.

How is it diagnosed and treated?

A diagnosis of ringworm is made by a healthcare provider based on the clinical features of the skin. The healthcare provider may feel necessary to take a scraping of the skin for a culture.

Ringworm of the skin can be treated with an over-the-counter antifungal cream or lotion. Ringworm of the scalp can only be treated with a prescribed antifungal medication from the child's health care provider.

How can the spread of this disease be prevented?

1. Items frequently touched by children (i.e. toys and surfaces) should be washed or wiped down frequently. This can be done with a diluted bleach solution.
2. Children should not be allowed to walk barefoot
3. Do not allow children to share personal items like brushes or combs.
4. Children should wash their hands with soap and warm water after touching any animals
5. Socks should be changed daily or if they become wet for any reason.
6. While under treatment swimming pools should be avoided.

Who should be excluded?

The child's parent or guardian should be telephoned/emailed or a note sent home at the end of the school day stating that the child needs to be seen by his/her health care provider related to the potential for infection.

The child should be excluded until treatment is started.

Reportable?

No, ringworm is not reportable by New Hampshire law. However, the Bureau of Infectious Disease Control professionals are available for consultation at (603) 271-4496.



ROSEOLA (Exanthema Subitum)

Roseola is the most common viral rash illness that occurs in young children. It is sometimes referred to as Sixth Disease or, less commonly, “baby measles”. Roseola is caused by a virus called human herpesvirus 6 (HHV-6) and, possibly, human herpesvirus 7 (HHV-7).

Who gets this disease?

Roseola usually occurs in children aged 6 months to 2 years of age. It is uncommon for the disease to occur in children under the age of 3 months or over the age of 4 years. There is no known risk to pregnant women. Cases are not seasonal and usually occur throughout the year.

How is Roseola spread?

Humans are the only known source for roseola. It is not known how the disease is spread or what the infectious period is. It is not considered to be very infectious.

How soon do symptoms appear?

Symptoms usually begin 4-10 days after exposure.

What are the symptoms?

Roseola usually begins with a high fever that lasts 3 to 5 days followed by a rash that lasts 1-2 days. When the fever disappears, a rash appears, usually on the face and body. Irritability, runny nose, eyelid swelling and tiredness are sometimes present during the time of the fever. Most children, however, are alert and playful during this time.

How is it diagnosed and treated?

While Roseola can be diagnosed through laboratory confirmation, a healthcare provider typically diagnoses the disease based on the symptoms. A rash occurring immediately after the fever breaks is characteristic of the disease.

The healthcare provider may recommend supportive treatment of symptoms but there is no treatment that is specific for roseola.

How can the spread of this disease be prevented?

There is no vaccine to prevent this disease, but good hand washing can help prevent the spread.

Who should be excluded?

Generally, a child with a rash and fever should be excluded from childcare until seen by a healthcare provider. A child with a rash and no fever may return to childcare. There are no recommendations for preventive therapy for other children attending the childcare or for childcare personnel.

Reportable?

No. Roseola is not reportable by New Hampshire state law to the Division of Public Health Services, Bureau of Infectious Disease Control. However, Public Health Professionals are available for consultation at (603) 271-4496.



Rotavirus

Rotavirus is a virus that causes diarrhea and vomiting. It is the most common cause of diarrhea in children under two years old.

What are the symptoms?

Rotavirus typically causes non-bloody diarrhea, nausea, and vomiting.

The symptoms usually last 3-8 days but the virus can be present before diarrhea begins and last up to three weeks after symptoms disappear.

How is the disease spread?

Rotavirus is spread by direct contact (fecal-oral route) with contaminated food or objects (i.e. toys or surfaces frequently touched by children).

How is it diagnosed and treated?

Your child's healthcare provider may make a diagnosis of rotavirus based on your child's symptoms. While not typically done, a stool sample may be collected and analyzed to confirm diagnosis.

There is no treatment for Rotavirus. The virus is self-limiting. Your child may need extra fluids in order to prevent dehydration. If you notice a decrease in your child's urine output or if your child cries with few or no tears, had a dry mouth, is unusually sleepy or fussy contact your child's healthcare provider.

How can the spread of the disease be prevented?

1. Good handwashing especially before preparing meals and after diapering a child.
2. Clean all meal preparation surfaces and surfaces children touch frequently.
3. Clean children's toys frequently – a diluted bleach mixture can be used to clean and sanitize items or surfaces.

The Advisory Committee on Immunization Practices (ACIP), recommends routine vaccination of children against Rotavirus. Two vaccines are available to prevent the spread of Rotavirus. Rotateq is a 3 dose series and is recommended to be given at 2 months, 4 months, and 6 months. Rotarix is a 2 dose series recommended to be given at 2 months and 4 months.

Who should be excluded?

Children should be excluded from childcare if they are experiencing more than 2 loose stools per day or diarrhea cannot be contained in diapers as it impedes the caregiver's ability to care for other children in a safe and sanitary manner.

Reportable?

No, rotavirus is not reportable by New Hampshire law. However, the Bureau of Infectious Disease Control professionals are available for consultation at (603) 271-4496.



RESPIRATORY SYNCYTIAL VIRUS **INFECTION (RSV)**

RSV is an infection of the small air passages of the lung causing bronchiolitis and pneumonia. RSV is most common in children under 1 year of age but it can affect anyone at any age. Most children have been infected with RSV by the time they turn 2 years of age, but only a few will develop serious illness. Re-infection can occur throughout life.

What are the symptoms of RSV?

Small infants may have irritability, decreased activity and breathing difficulties as early symptoms. Older children may have symptoms similar to any other respiratory infection, such as cough, sneezing, fever, runny nose, wheezing, and decrease in appetite.

How is RSV spread?

RSV is spread when the infected person sneezes or coughs the droplets into the air. The person who is at risk then inhales the virus from the air. The infection can be spread by direct contact with nasal or oral secretions from the infected person. Activities such as kissing the face of a child or coming into contact with surfaces that have been infected with secretions and then rubbing the eyes or nose can spread RSV. RSV is common in winter and early spring.

What is the incubation period for RSV?

The incubation period can range from 2 - 8 days but is usually 4 - 6 days.

How can RSV be prevented?

Steps can be taken to limit exposure and to help stop the spread of RSV infection:

- Cover coughs and sneezes,
- Wash hands frequently and correctly,

- Avoid sharing cups and eating utensils with others,
- Refrain from kissing others,
- Cleaning contaminated surfaces frequently (i.e., door knobs, toys, etc.)

Should the child with RSV be excluded?

Children with fever and respiratory symptoms should be excluded from childcare until they no longer have a fever. Children with respiratory symptoms should be kept separated from children with high-risk conditions.

Is RSV Reportable?

No. RSV is not reportable by New Hampshire state law to the Division of Public Health Services, Bureau of Infectious Disease Control; Public Health Professionals are available for consultation at (603) 271-4496.



RUBELLA (GERMAN MEASLES)

Rubella is a childhood viral disease, which causes a rash, low-grade fever and swollen glands in the area behind the ears. Some children may have a very mild illness with no rash at all. However, if a pregnant woman without protection against rubella is exposed to the disease, there could be harmful effects to her baby. **Pregnant women should consult their physician at once if they have been exposed to rubella!**

Who gets this disease?

Some young adults remain susceptible to rubella due to high school graduation prior to the school rubella vaccination laws. Rubella is most often seen in unimmunized children and in this susceptible adolescent and young adult group.

How is it spread?

The virus is spread by large droplets spread through the air from sneezing or coughing, or by direct contact with infected nasal or saliva secretions.

What are the symptoms?

1. A two to three day rash that begins on the face and quickly spreads downward over the entire body.
2. A low-grade fever of 101-degrees Fahrenheit or less.
3. Swollen glands behind the ears. (NOTE: this may appear before the rash). Joint and body pain is most commonly experienced in adults.
4. Symptoms appear 12-23 days after exposure; usually 16-18.

Infected persons are contagious from one week **before** to 5-7 days after the appearance of the rash. A small percentage of properly immunized children may be infected with rubella due to occasional vaccine failure.

How can the spread of this disease be prevented?

The national Advisory Committee on Immunization Practices (ACIP) recommends that children be immunized against rubella after 12-months of age. The two dose vaccine should be completed at 12-15 months of age and 4-6 years. This immunization is **required** for both childcare and school attendance. The vaccine is usually combined with measles and mumps vaccine.

Who should be excluded?

A child or staff member with rubella or suspect rubella should not return to daycare until seven days after the onset of the rash.

Reportable?

Yes. Rubella is reportable **immediately** by New Hampshire law to the Division of Public Health Services, Bureau of Infectious Disease Control at (603) 271-4496.



SALMONELLOSIS

Salmonella is an illness caused by the bacterium *Salmonella* of which there are numerous types. Salmonellosis most commonly causes intestinal illness but occasionally may infect the blood stream. The bacterium is passed in the stool of infected individuals.

Who gets this disease?

Any person can become infected with Salmonella. The disease is more likely to cause a severe infection in the very young, the very old and in people with underlying diseases, such as cancer.

How is it spread?

In the childcare setting, Salmonella is usually spread by the fecal-oral route. The bacterium can also be spread by contaminated food or drink. It is commonly found in uncooked or undercooked meat (especially beef), poultry and eggs, and unpasteurized milk. Salmonella can also be spread to children and adults from infected pets such as turtles, lizards, snakes, dogs, cats, ducklings, chickens and other birds. (NOTE: Because of this hazard, these types of animals should not be in childcare facilities.)

What are the symptoms?

The intestinal illness caused by Salmonella is characterized by diarrhea (mild or severe), fever, abdominal cramps and occasional vomiting.

How soon do symptoms appear?

The symptoms generally appear from 6-72 hours after exposure, usually appearing 12-36 hours. Sometimes symptoms take up to 7 days to appear.

Can a person have this disease and not know it?

Yes. Some people may not have symptoms serious enough to cause them to seek medical attention. In some cases of Salmonella infection, after the diarrhea illness is over the organism may be excreted in the stool for months to over a year. This is called the carrier state.

What is the treatment?

Although most people with Salmonellosis will recover on their own, in some cases healthcare providers may prescribe antibiotics. Some antibiotics may lengthen the amount of time the bacteria are found in the stool, however.

How can the spread of this disease be prevented?

1. Wash hands thoroughly after using the toilet *and diapering children*.
2. Wash hands thoroughly before preparing food.
3. Be certain all foods in the childcare center are thoroughly cooked – especially beef, poultry and eggs.
4. Any leftover food should be discarded.
5. Food preparation surfaces (e.g., tables, counters, cutting boards, kitchen utensils) should be carefully washed and disinfected after preparing food.
6. Unpasteurized milk (goat or cow) is frequently contaminated with Salmonella and other bacteria; it should **not** be used in a childcare setting.
7. Staff with active diarrhea or gastrointestinal (GI) illness should not work in a childcare facility until they are free of symptoms for 48 hours.
8. Keep children with diarrhea at home.
9. High-risk animals like turtles and lizards should not be in child care settings.

SALMONELLOSIS (cont.)

Who should be excluded?

Infected persons shall be excluded from foodhandling, working in a child care facility and from direct care of hospitalized and institutionalized patients until they are no longer infectious or symptomatic (48 hours after resolution of symptoms).

Reportable?

Yes. Salmonella is reportable by New Hampshire law to the Division of Public Health Services, Bureau of Infectious Disease Control at (603) 271-4496.



SCABIES

Scabies is a common skin infestation caused by microscopic parasites called a mite. The female mite burrows under the skin to lay her eggs, which subsequently hatch and start the infestation cycle again.

Symptoms of scabies do not appear until weeks after exposure. The skin reaction is probably due, in part, to a sensitization or “allergic” reaction to the mites. On re-exposure, symptoms can start within days. The infestation is in the form of an intensely itchy rash, which consists of red bumps and burrows (i.e., short, wavy, thread-like lines in the skin). Itching tends to increase at night.

Who gets this disease?

Anyone who has contact with the mite can become infested with scabies.

How is it spread?

The mite is spread by direct skin-to-skin contact, or by skin contact with clothes, bedding, etc. that the mites have crawled onto. The mites can survive only three days off the body and cannot jump or fly. They require direct contact with skin to spread. The incubation period for this disease is two to six weeks after exposure.

How is it diagnosed and treated?

It can be diagnosed by the typical appearance of the rash and accompanying symptoms and by examining skin scrapings under the microscope to see the mite or its’ eggs.

Scabies is treated with one of several prescription mite-killing creams or lotions, which are applied once to the skin and then washed off after a specified period of time. Medicine to relieve the itching is often necessary. (Note: Even after effective therapy, itching can persist for up to 2 to 4 weeks). Treatment is recommended for all household members – even those without symptoms – due to the high likelihood of spread within a household. Prophylactic treatment is also recommended for people who have had direct skin-to-skin contact with an infected individual.

How can the spread of this disease be prevented?

1. Follow previously outlined principles of hand washing and cleanliness at the childcare facility.
2. Children should not share personal items, cribs, mats or clothing.
3. Each child’s dirty clothing should be stored separately and sent home for laundering.
4. If a case of scabies occurs in the daycare facility:
 - a. Wash and dry on the hot cycle all washable items belonging to the center that came into contact with the child’s skin during the 72 hours prior to treatment.
 - b. Difficult to wash items (e.g., stuffed toys, pillows) can be stored in tightly closed plastic bags for four days and then used again. (Note: The mite cannot live off the body for more than three days).
 - c. Thoroughly vacuum any carpet or upholstered furniture.

SCABIES CONT.

5. Pesticide sprays are not recommended and can be harmful to people and animals.
6. If a rash, which appears suspicious for scabies, is noticed on a child in the childcare center, tell the parents the child should be seen by a healthcare provider.

Who should be excluded?

Infected individuals should be excluded until treatment is completed. If two or more cases occur in the daycare center, call the Division of Public Health Services, Bureau of Infectious Disease Control for further recommendations.

Reportable?

No, scabies is not reportable by New Hampshire law to the Division of Public Health Services, Bureau of Infectious Disease Control. However, Public Health Professionals are available for a consultation at (603) 271-4496.



SHIGELLOSIS

Shigellosis is an intestinal illness caused by *Shigella*, which is a family of bacteria that is comprised of 40 different types.

Who gets this disease?

Anyone can, but shigellosis is recognized more often in young children.

How is it spread?

Among small children in a childcare facility, the fecal-oral route usually spreads *Shigella*. It takes very few swallowed *Shigella* bacteria to cause infection (as opposed to *Salmonella*, which take many bacteria to cause infection); so it can easily become a problem in a childcare setting. *Shigella* can also be spread through stool-contaminated food, drink or water.

What are the symptoms?

Shigella can cause mild or severe diarrhea. In mild cases, a person may have only watery stools for several days. In severe cases, the diarrhea may have traces of blood or mucous and may lead to dehydration. Fever, severe cramps, vomiting, headache and even convulsions (in young children) can occur.

How soon do symptoms appear?

The symptoms usually occur 2-4 days after exposure, but it can be as long as seven days.

Can a person have this disease without knowing it?

Yes, *Shigella* can be in the stool of children or adult who are not sick and do not have diarrhea. These asymptomatic carriers may transmit infection; rarely the carrier state persists for months or longer.

What is the treatment?

Although most people with Shigellosis will recover on their own, antibiotics shorten both the length of the illness and the amount of time bacteria is passed in the stool, which is particularly important in daycare settings.

How can the spread of this disease be prevented?

1. Wash hands thoroughly after using the toilet or diapering a child.
2. Wash hands thoroughly before preparing food.
3. Keep children who have diarrhea at home.
4. Staff with positive stool cultures for *Shigella* should not prepare food or feed children.

Who should be excluded?

Infected persons shall be excluded from food handling, from childcare facilities and from direct care of hospitalized or institutionalized patients until stool cultures are free of *Shigella* on two consecutive specimens collected not less than 24 hours apart. If antibiotics have been taken, the initial cultures shall be obtained at least 48 hours after the last dose.

Reportable?

Yes. Shigellosis is reportable by New Hampshire law to the Division of Public Health Services, Bureau of Infectious Disease Control at (603) 271-4496,



STREP THROAT & SCARLET FEVER

Group-A *Streptococci* are bacteria that can cause a variety of illnesses, the most common of which are strep throat, scarlet fever and impetigo.

Strep Throat is a sore throat caused by this bacterium. Cold viruses, not strep bacteria, cause the vast majority of sore throats in both children and adults. Strep sore throats tend to be accompanied by fever, tender swollen neck glands, headache and stomach ache but can also occur with cough, runny nose, or other cold symptoms.

Scarlet Fever is a form of strep infection caused by bacteria that produce a substance, which causes a skin rash. The rash is usually red with fine bumps that feel like sand paper and is most noticeable on the neck, chest, groin, or on the inner surface of the knees, thighs and elbows. The rash does not usually involve the face, but cheeks are flushed and there is paleness around the mouth. The tongue may be reddish and look like the surface of a strawberry. The rash may only last a few hours. Scarlet fever is no more serious than strep throat.

Treatment of strep infections with antibiotics may not dramatically change the length or severity of the sore throat symptoms or rash. It is important to treat strep infections in children to prevent its spread to others and the possible development of rheumatic fever.

Note: Rheumatic Fever (i.e., abnormalities of the heart valves and inflammation of the joints) is very rare in the United States today, but can develop five to six weeks after any type of untreated strep infection. In rare instances, kidney disease can also occur following a strep infection.

Who can get this disease?

Anyone can get strep throat or scarlet fever, but it is uncommon in children under three years of age (as is rheumatic fever). It is most common in school-aged children, in winter months and in crowded situations (e.g., schools, childcare centers). Often if one person in a family gets it, other do also, especially brothers and sisters.

How is it spread?

During infections, strep is in nose and mouth secretions so it can be coughed, sneezed or smeared around on hands, dishes, food, toys and similar objects. The incubation period is two to five days. Unlike colds, children are probably not infectious during this incubation period. Children are most likely to pass strep to others when they have symptoms and until they have been on antibiotic treatment for 24 hours.

How soon do symptoms appear?

The symptoms generally appear within one to three days. Because of a possible association with Reye's Syndrome (i.e., vomiting, liver problems and coma), salicylate-containing products (i.e., aspirin) are not recommended for control of fever.

How are they diagnosed and treated?

The diagnosis of strep throat is made by a throat culture. It usually takes 24-48 hours to grow the bacteria. There are several recently developed rapid tests, which can diagnose a strep infection in less time. Strep infections are treated with an oral antibiotic for 10 days. Occasionally a healthcare provider may give a single long-lasting injection. Depending on the symptoms, the healthcare provider may give antibiotics immediately or wait for the throat culture results.

STREP THROAT & SCARLET FEVER

(cont.)

How can the spread of this disease be prevented?

1. Enforce handwashing and general cleanliness in the childcare facility. If a case of strep throat has been diagnosed, it is particularly important to remember that:
 - a. Staff and children should wash their hands after wiping/blowing noses and before eating or preparing food.
 - b. Toys and surfaces should be washed and disinfected daily.
 - c. Each child should have his/her own cup; preferably, disposable cups should be used.
 - d. Food should not be shared.
 - e. All eating utensils should be carefully washed in hot, soapy water, disinfected and air-dried. A dishwasher is best.
2. Keep children's noses clean and dry; wash hands immediately after wiping noses.
3. Teach children to cough/sneeze to one side toward the floor and into a tissue. They need to wash their hands afterward.
4. If there is a case of strep throat in the facility, children and staff who develop sore throat symptoms should be seen by their healthcare provider to be tested for strep. Generally, children and staff who do not have symptoms do not need to be cultured.

Who should be excluded?

Children and staff should be excluded until 24 hours after beginning antibiotic therapy and until there is no fever present.

Reportable?

No, this type of Streptococcal infection is not reportable by New Hampshire law to the Division of Public Health Services, Bureau of Infectious Disease Control. However, Public Health Professionals are available for consultation at (603) 271-4496.



SWIMMER'S ITCH (Cercarial Dermatitis)

Swimmer's itch (Cercarial Dermatitis) is caused by human contact with a parasite that normally is found in some species of birds or small animals. The adult stage of the parasite lives in the animals' intestines and is shed into the water with excreted feces. Snails feed off the waste and release the young parasite (called cercaria) into the water. When this parasite burrows into a person's skin it causes an allergic, itchy rash. The parasite is commonly found at the water's surface and near the shore.

Who gets this disease?

Anyone who swims in water where this parasite lives is susceptible. The parasite may live in both fresh and salt water.

How is it spread?

Most commonly, individuals get the infection by swimming or wading in infested water and then allowing water to evaporate off the skin rather than drying the skin with a towel. The parasite (cercaria) will burrow underneath the person's skin. Because these parasites cannot develop inside a human, they soon die. The infection is not spread from person-to-person.

What are the symptoms?

The symptoms include an initial prickling sensation after leaving the water shortly followed by an itchy rash, which reaches maximum intensity in 2 to 3 days and can persist for a week. Scratching the area may result in secondary bacterial infections. Repeated exposure increases a person's sensitivity to the parasite, possibly resulting in more severe symptoms.

What is the treatment?

It is best to check with a physician for treatment. Sometimes medication is given to ease the itching and allergic reaction. If secondary infection develops, antibiotic treatment may be indicated.

How can Swimmer's Itch be prevented?

1. Avoid swimming in known infested waters. Swim in deeper water. The parasite is usually found in shallow waters. Babies sitting along the shore are most vulnerable.
2. Vigorously towel your entire body immediately upon leaving the water. This will help brush off any cercaria that may be on the skin, also rinsing off with a quick shower as soon as you leave the water may be helpful.
3. Use a waterproof sunscreen. This forms a chemical barrier that may prevent the parasite from sticking to the body.

Who should be excluded?

There is no need to exclude someone from a facility since Swimmer's Itch is not spread from person-to-person.

Reportable?

No, Swimmer's Itch is not reportable by New Hampshire law to the Division of Public Health Services, Bureau of Infectious Disease Control. However, public health professionals are available for consultation at (603)-271-4496.

For questions in sampling public swimming areas, please contact the NH Department of Environmental Services, Public Beach Sampling Program at (603) 271-0698.



TETANUS

Tetanus is a bacterium that lives in the soil and can enter the body through a cut or wound. The bacteria produce a poisonous substance – exotoxin – that causes the clinical illness.

Who gets this disease?

Tetanus occurs almost exclusively in unimmunized or inadequately immunized persons. Previously having tetanus does not result in immunity to subsequent infections. Vaccination is required after initial recovery.

How is it spread?

Unlike other vaccine-preventable diseases, tetanus is not spread from person-to-person. It occurs when the bacterium in soil or dust is introduced into the body through a wound.

What are the symptoms?

The poisonous exotoxin produced by the *Clostridium tetani* bacteria causes muscles to go into spasms of the face/neck, abdomen, or area where the initial infection occurred. Paralysis and death can result. Sometimes tetanus is called “lockjaw”.

How can Tetanus be prevented?

The Advisory Committee on Immunization Practices (ACIP) recommends immunizing children against tetanus – along with diphtheria and pertussis – beginning as early as six weeks of age. The diphtheria-tetanus-acellular pertussis (DTaP) vaccine is **required** for both childcare and school attendance. The five dose series should be completed at 2 months, 4 months, 6 months, and 15-18 months, and 4-6 years of age

Tdap/Tetanus diphtheria and acellular pertussis should be given once between the ages of 11-18 years. Booster doses of tetanus-diphtheria toxoid (Td) vaccine every 10 years after finishing the childhood primary immunization series are necessary to maintain protection against tetanus. Tdap is available as a one time dose for adults who have not recently received a tetanus vaccine. Also, it is important to be sure that all cuts, scrapes and puncture wounds are cleaned well with soap and water. Consult your healthcare provider for need of tetanus vaccine after a wound.

Who should be excluded?

There is no need for the child or the childcare worker to be excluded as tetanus is not spread from person-to-person.

Reportable?

Yes, tetanus is reportable by New Hampshire law to the Division of Public Health Services, Bureau of Infectious Disease Control at (603) 271-4496.



TUBERCULOSIS

Tuberculosis (TB) is a disease caused by a certain type of bacterium. A person *who is sick* with **active tuberculosis disease** may spread the germ when they cough or sneeze. If others inhale the bacteria from the air, they may become infected. But not everyone who is exposed will become infected. A person with Latent TB infection does not feel sick and cannot spread the germs to others.

Does infection mean you will be sick?

No. Many people were infected with TB many years ago when the disease was very common. Only 5-10% of people who are infected will ever get the disease unless they have an impaired immune system.

What is a TB test?

A skin test is a method of determining if a person has been infected with the TB germ. A positive TB skin test reaction, however, does NOT necessarily mean the person has TB disease.

Like the skin test there is a blood test that can test for tuberculosis infection. This test is often called an IGRA (Interferon gamma release assay). The IGRA does not diagnose active TB disease. The IGRA is currently not recommended for children under two.

How is the test given?

For the skin test--a small amount of PPD (purified protein derivative) is injected just under the surface of the skin on the forearm. In 48 to 72 hours, a healthcare provider or nurse will read the test by inspecting the skin.

The IGRA is a simple blood draw and there is no return visit for reading necessary and a doctor will help determine the results.

Who should have tuberculosis test?

Persons who have been exposed to an active case of TB, persons born in a foreign country (where TB is common), people infected with HIV (human immunodeficiency virus), healthcare workers and pre-school age childcare staff. It is a law that persons with a positive IGRA be reported to the Bureau of Infectious Disease Control.

Persons who have a documented positive reaction to a TB skin test do not need repeat skin tests. All persons with a positive skin test or a positive IGRA should be evaluated yearly for signs of active disease.

How can TB be prevented?

People who have a positive reaction to a TB skin test or a positive IGRA can prevent disease by taking medications.

Who should be excluded?

A person with a positive TB skin test or positive IGRA should have a medical examination and a chest x-ray and discuss with a healthcare provider about taking preventive therapy. Persons diagnosed or suspected to have active TB disease should be reported immediately to the Bureau of Infectious Disease Control and should be excluded from attending or working in a childcare center until they are determined to be non-infectious by both a healthcare provider and the Bureau of Infectious Disease Control.

Reportable?

Yes. Suspect and cases of active tuberculosis and persons with a positive IGRA are reportable by New Hampshire law to the Division of Public Health Services, Bureau of Infectious Disease Control at (603) 271-4496.



WEST NILE VIRUS

What is West Nile virus?

West Nile virus (WNV) is an uncommon but serious mosquito-borne infection. The virus can be transmitted to horses, other animals, and, in rare cases, people.

How do people get West Nile virus?

WNV is spread by the bite of an infected mosquito. Mosquitoes become infected when they feed on infected birds. Infected mosquitoes can then spread WNV to humans and other animals when they bite. In a very small number of cases, WNV also has been spread through blood transfusions or organ transplants, breastfeeding and even during pregnancy from mother to baby. WNV is not spread through casual contact such as touching or kissing a person with the virus.

What are the symptoms of West Nile virus in humans?

Most WNV infections do not cause any symptoms. Mild WNV infections can cause fever, headache and body aches, often with a skin rash and swollen lymph glands. In a small percentage of people infected by the virus, the disease can be serious, even fatal. Most severe infections can cause headache, high fever, neck stiffness, stupor, disorientation, coma, tremors, convulsions, paralysis, and sometimes death.

How soon after exposure do symptoms appear?

Symptoms of WNV usually appear 2 to 14 days, but usually 2-6 days after the bite of an infected mosquito.

How is West Nile virus diagnosed?

Diagnosis is based on tests of blood or spinal fluid.

Who is at risk for West Nile virus?

Anyone can get WNV, but some people are at increased risk, such as people living in or visiting areas where the disease is common, or people who work outside or participate in outdoor recreational activities in areas where the disease is common. Persons older than 50 years of age are more likely to develop serious symptoms of WNV if they do get sick and should take special care to avoid mosquito bites. All donated blood is checked for WNV before being used. The risk of getting WNV through blood transfusions and organ transplants is very small, and should not prevent people who need surgery from having it. If you have concerns, talk to your health care professional.

What is the treatment for West Nile Virus?

There is no specific treatment for WNV. In more severe cases, intensive supportive therapy is indicated, i.e., hospitalization, intravenous (IV) fluids and nutrition, airway management, ventilator support (ventilator) if needed, and prevention of secondary infections (pneumonia, urinary tract, etc).

How common is West Nile virus?

WNV was first identified in NH in 2000. WNV has been found in horses, mosquitoes and several species of birds. Since 2010 three human cases of WNV were reported in the state.

How can West Nile virus be prevented?

A vaccine is available for horses, but not for humans. Prevention of the disease centers around controlling mosquitoes and on individual action to avoid mosquito bites. To avoid being bitten by the mosquitoes that transmit WNV:

West Nile Virus (cont.)

- If possible, stay inside between dusk and dawn, when mosquitoes are most active.
- When outside between dusk and dawn, wear long pants and long-sleeved shirts.
- Use an insect repellent with DEET or Picaridin according to manufacture's directions when outside. Oil of lemon eucalyptus and IR3535 have been found to provide protection similar to repellents with low concentrations of DEET.
- Put screens on windows and make sure they do not have holes.
- Eliminate standing water and other mosquito breeding locations from your property. Do not alter natural water bodies. The management of ponds and wetlands is regulated by the Department of Environmental Services and any alterations require a permit before work may begin.

For specific concerns about West Nile virus, call the New Hampshire Division of Public Health Services, Bureau of Infectious Disease Control at (603) 271-4496. For further information, refer to the Centers for Disease Control and Prevention website at www.cdc.gov or the New Hampshire department of Health & Human Services website at www.dhhs.nh.gov.



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GLOSSARY

Antibody – A protein substance produced by the defense system in response to something foreign. Antibodies help protect against infections.

Asymptomatic – Without symptoms. For example, a child may have the hepatitis A virus in the stool and not have symptoms of illness, but will still be able to infect others.

Bacteria/Bacterium – One celled organism with a cell wall that can survive in and out of the body. They are much larger than viruses, and they can usually be treated effectively with antibiotics. Examples of bacteria include *Salmonella* enteritidis and *Bordetella pertussis*. Bacterium is singular, bacteria, plural.

Bloodborne – A disease that can be transmitted through the blood.

Carrier – A person who is infected with a specific organism, who has no symptoms of disease and who can spread the disease to others. For example, some children may be carriers of the organism *Haemophilus influenza* or *Giardia lamblia* and have no symptoms.

Chronic – An infection or illness that lasts a long time (i.e., months or years).

Communicable – When an infected person is capable of spreading infection to another person.

Contagious Period (Communicable Period) – The period of time when an infected person is capable of spreading infection to another person.

Contamination – The presence of infectious germs in or on the body, on environmental surfaces, on articles of clothing, or in food or water.

Diarrhea – Increased number of stools compared with a person's normal pattern, along with watery stools, and/or decreased stool form. Uncontrolled diarrhea is diarrhea that cannot be contained by the diaper or use of the toilet.

Direct Contact – Diseases that are spread by touching the infected area on another person's skin or occasionally by touching an object that is contaminated with infectious secretions or parasites.

Disinfection – Killing of germs outside of the body with chemical (e.g., bleach, alcohol), or physical (e.g., heat) agents. Surfaces should be cleaned first and then disinfected.

Enteric – Describing infections of the intestines (often with diarrhea).

Febrile – Having a fever.

Fever – An elevation of body temperature.

Hygiene – Protective measures taken by individuals to promote health and limit the spread of infectious diseases. These include: **a)** washing hands with soap and running water after using the toilet, after handling anything contaminated, and before eating or handling food; **b)** keeping hands, hair and unclean items away from the mouth, nose, eyes, ears, genitals and wounds; **c)** avoiding the use of common or unclean eating utensils, drinking glasses, towels, handkerchiefs, combs and hairbrushes; **d)** preventing exposure to droplets from the nose and mouth by covering the face when coughing or sneezing; **e)** washing hands thoroughly after caring for another person; and **f)** keeping the body clean by frequent (at least daily) baths or showers using soap and water.

GLOSSARY (cont.)

Immunity – The body’s ability to fight a particular infection. For example, a child acquires immunity to diseases such as measles, mumps, rubella and pertussis after natural infection or by immunization. Newborns initially have the same immune status as their mothers. This type of immunity usually disappears within the first six months of life.

Immunizations – Vaccines that are given to children and adults to help them develop protection (antibodies) against specific infections. Vaccines may contain an inactivated or killed agent, or a weakened live organism. Childhood immunizations include protection against *diphtheria, pertussis, tetanus, polio, measles, mumps, rubella, Haemophilus influenza type b, hepatitis A, hepatitis B and varicella*. Adults need to be protected against measles, mumps, rubella, tetanus and diphtheria, and chicken pox.

Incubation Period – Time between exposure to an infectious agent and the beginning of symptoms.

Infection – When an infectious agent multiplies in the body.

Infectious – Capable of causing an infection.

Jaundice (icterus) – Yellowing of the eyes or skin.

Organisms – Living things. Often used as a general term for germs (e.g., bacteria, viruses, fungi, parasites) that can cause disease.

Parasite – An organism that lives on or in another living organism.

Pathogen – Disease causing organism.

Prophylaxis – Measures taken at the time of exposure of an infectious disease, or shortly thereafter, to try and prevent the disease. This may include medication or special immunization.

Purulent – Forming or containing pus.

Secretions – Wet material produced by cells or glands, which has a specific purpose in the body, such as saliva.

Systemic – Pertaining to a whole body rather than to one of its parts.

Transmission – The passing of an infectious organism or germ from a source of infection to a person. (Examples: person-to-person or animal to person).

Virus – A microscopic organism, smaller than bacteria, which may cause disease. Viruses can grow or reproduce only in living cells. Examples of viruses include hepatitis B, HIV and the common cold. .