



Communicable Disease Reporting and Resource Manual for Schools and Child Care Centers 2nd Edition



Kane County, Illinois

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Communicable Disease Reporting and Resource Manual for Schools and Child Care Centers

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Communicable Disease

Reporting and Resource Manual for

Schools and Child Care Centers

INTRODUCTION

This manual has been developed to provide an easy to use reference for those individuals responsible for the prevention and control of infectious diseases, required disease reporting and emergency planning and preparedness in child care and school settings. Educational and child care settings are unique environments for natural disease transmission and are vulnerable in the event of natural disasters or terrorist orchestrated events. This has important personal, public health, economic and social implications. It is our hope that you view the local health department as a valuable resource and an extension of the Illinois Department of Public Health. Kane County Health Department considers schools and child care facilities to be valuable partners in promoting and preserving the health of our community.

The following steps will assist in prevention and control of transmission of communicable diseases and provision of a safe environment for children.

1. Limit the Spread of Germs
 - Promote Hand Hygiene. Hand washing is the single most effective means of preventing the spread of infections.
 - Promote Respiratory Hygiene. Persons should cover their coughs and sneezes correctly (into the elbow) and use and dispose of tissues appropriately.
 - Require immunizations to be up-to-date and encourage recommended immunizations for both children and staff.
 - Exclude ill children and staff as indicated.
 - Reduce crowding and allow for proper ventilation.
 - Clean and disinfect toys, furniture and areas for eating, toileting, and diapering.
 - Keep all personal items separate.
 - Do not share food, eating utensils or drinking glasses and do not eat out of a common dish.
 - Promote judicious use of antibiotics.
2. Report to Kane County Health Department diseases and conditions in accordance with the Illinois Department of Public Health's Rules and Regulations for Control of Communicable Diseases.

3. Encourage good health habits: adequate rest, proper nutrition, adequate exercise and play time, and good personal hygiene. Do not smoke cigarettes and do not use drugs and alcohol.
4. Practice food safety to include proper cleaning and cooking practices.
5. Practice animal safety. Do not approach wild animals. Use caution around unfamiliar domestic animals. Provide adequate measures to limit disease transmission following animal handling or visits to animal environments.

References

The following references were utilized in preparation of this manual:

Association for Professionals in Infection Control and Epidemiology, Inc. *APIC Text of Infection Control & Epidemiology*

Center for Disease Control and Prevention, www.cdc.gov

Illinois Department of Public Health, <http://www.idph.state.il.us>

American Academy of Pediatrics, 2012 Red Book: Report of Committee on Infectious Diseases.

Managing Infectious Diseases in Child Care and Schools: A quick reference guide, and *Control of Communicable Diseases Manual, 3rd edition*.

DISCLAIMER - In clinical practice, certain circumstances and individual cases require professional judgment beyond the scope of this document. Practitioners and users of this manual should not limit their judgment on the management and control of communicable disease to this publication and are well advised to review the references that are listed, and remain informed of new developments and resulting changes in recommendations on communicable disease prevention and control.



REQUIRED REPORTING OF COMMUNICABLE DISEASES AND CONDITIONS

As stated in Section 690.200 of the Illinois Department of Public Health (IDPH) Rules & Regulations for the Control of Communicable Diseases, February 11, 2014:

(1) Each of the following persons or any other person having knowledge of a suspected case or carrier of a reportable communicable disease or communicable disease death shall report the case, suspect case, carrier or death in humans within the time frames set forth in Section 690.100 of this Part:

- A) Physicians
- B) Physician assistants
- C) Nurses
- D) Nursing assistants
- E) Dentists
- F) Health care practitioners
- G) Emergency medical services personnel
- H) Laboratory personnel
- I) Long-term care personnel
- J) Any institution, school, college/university, child care facility or camp personnel**
- K) Pharmacists
- L) Poison control center personnel
- M) Blood bank and organ transplant personnel
- N) Coroners, funeral directors, morticians and embalmers
- O) Medical examiners
- P) Veterinarians
- Q) Correctional facility personnel
- R) Food service management personnel
- S) Any other person having knowledge of a known or suspected case or carrier of a reportable communicable disease or communicable disease death
- T) The master, pilot or any other person in charge of any bus, train, ship or boat, and the commander, pilot or any other person in charge of any aircraft within the jurisdiction of the State
- U) Researchers

2) An individual required to report reportable diseases who is unsure whether the case meets the definition of a suspect case shall make a report if the suspect disease, infection or condition is one that is required to be reported immediately, is highly transmissible, or results in health consequences.

The following are mandated by the State of Illinois to be reported* to Kane County Health Department within the designated time frames. Thank you for your assistance

Class I A

Within 3 HOURS

ANTHRAX
ANY SUSPECTED BIOTERRORIST THREAT OR EVENT
ANY UNUSUAL CASE OF A DISEASE OR CONDITION CAUSED BY AN
INFECTIOUS AGENT NOT LISTED OF URGENT PUBLIC HEALTH SIGNIFICANCE
BOTULISM, FOODBORNE
BRUCELLOSIS**
DIPHTHERIA

INFLUENZA A, VARIANT VIRUS
PLAGUE
POLIOMYELITIS
Q FEVER (COXIELLA BURNETII) **
SEVERE ACUTE RESPIRATORY SYNDROME (SARS)
SMALLPOX
TULAREMIA**

Class I B

24 HOURS

BOTULISM INTESTINAL, WOUND, AND OTHER
BRUCELLOSIS
CHICKENPOX (VARICELLA)
CHOLERA (TOXIGENIC VIBRIO CHOLERA 01 OR 0139)
ENTERIC ESCHERICHIA COLI INFECTIONS (E. COLI: O157:H7, STEC, EIEC, EPEC, ETEC)
HAEMOPHILUS INFLUENZAE, MENINGITIS AND OTHER INVASIVE DISEASE
HANTAVIRUS PULMONARY SYNDROME
HEMOLYTIC UREMIC SYNDROME, POST-DIARRHEAL
HEPATITIS A
INFLUENZA- RELATED TO INTENSIVE CARE UNIT (ICU) ADMISSIONS
MEASLES
MUMPS
NEISSERIA MENINGITIDIS, MENINGITIS, INVASIVE DISEASE
OUTBREAKS OF PUBLIC HEALTH SIGNIFICANCE (INCLUDING, BUT NOT LIMITED TO FOODBORNE
AND WATERBORNE)
PERTUSSIS (WHOOPING COUGH)

Q. FEVER (COXIELLA BURNETII)
RABIES, HUMAN
RABIES POTENTIAL HUMAN EXPOSURE AND ANIMAL RABIES
RUBELLA (GERMAN MEASLES) INCLUDING CONGENITAL RUBELLA SYNDROME
SMALLPOX VACCINATION COMPLICATION
STAPHYLOCOCCUS AUREUS, METHICILLIN RESISTANT (MRSA)
CLUSTERS OF 2 OR MORE CASES IN A COMMUNITY SETTING
STAPHYLOCOCCUS AUREUS, METHICILLIN RESISTANT (MRSA) IN INFANTS <61 DAYS OLD
STAPHYLOCOCCUS AUREUS INFECTIONS WITH INTERMEDIATE OR HIGH LEVEL
RESISTANCE TO VANCOMYCIN
STREPTOCOCCAL INFECTIONS, GROUP A, INVASIVE, INCLUDING TOXIC SHOCK SYNDROME,
NECROTIZING FASCIITIS
TULAREMIA
TYPHOID FEVER
TYPHUS

Class II

7 DAYS

AIDS (ACQUIRED IMMUNODEFICIENCY SYNDROME)
BABESIOSIS (TICKBORNE DISEASE)
CALIFORNIA ENCEPHALITIS (ARBOVIRAL DISEASE)
CHANCROID
CHIKUNGUNYA (ARBOVIRAL DISEASE)
CHLAMYDIA
CREUTZFELDT – JAKOB DISEASE (CJD)
CRYPTOSPORIDIOSIS
CYCLOSPORIASIS
DENGUE (ARBOVIRAL DISEASE)
EASTERN EQUINE ENCEPHALITIS (ARBOVIRAL DISEASE)
EHRlichiosis, HUMAN GRANULOCYTOTROPIC ANAPLASMOSIS (HGA) (TICKBORNE DISEASE)
EHRlichiosis, MONOCYTOTROPIC (HME) (TICKBORNE DISEASE)
GONORRHEA
HEPATITIS B (ACUTE INFECTION AND CARRIERS)
HEPATITIS C (ACUTE INFECTIONS AND CARRIERS)
HEPATITIS D
HISTOPLASMOSIS
HIV (HUMAN IMMUNODEFICIENCY VIRUS) INFECTION
INFLUENZA, DEATHS IN THOSE <18 YRS. OLD
LEGIONELLOSIS (LEGIONNAIRES' DISEASE)

LEPROSY (HANSEN'S DISEASE) INFECTIOUS AND NON-INFECTIOUS CASES
LEPTOSPIROSIS
LISTERIOSIS (REPORT ONLY MOTHER ID MOTHER AND NEWBORN POSITIVE)
LYME DISEASE (TICKBORNE DISEASE)
MALARIA
PSITTACOSIS (CHLAMYDIA PSITTACCI)
ROCKY MOUNTAIN SPOTTED FEVER (TICKBORNE DISEASE)
SALMONELLOSIS (OTHER THAN TYPHOID FEVER)
SHIGELLOSIS
ST. LOUIS ENCEPHALITIS (ARBOVIRAL DISEASE)
STREPTOCOCCUS PNEUMONIAE AND OTHER INVASIVE DISEASE IN THOSE <5 YRS. OLD
SYPHILIS
TETANUS
TOXIC SHOCK SYNDROME, STAPHYLOCOCCUS AUREUS
TRICHINOSIS
TUBERCULOSIS
VIBRIOSIS (NON-TOXIGENIC VIBRIO CHOLERA 01 OR 0139)
WEST NILE VIRUS (ARBOVIRAL DISEASE)
WESTERN EQUINE ENCEPHALITIS (ARBOVIRAL DISEASE)
YERSINIOSIS

*Control of Communicable Disease Code - 77 Illinois Administrative Code 690, February 11, 2014

** If suspected to be a bioterrorist event or part of an outbreak

Report 24 hours a day

630-208-3801

All reports are confidential and should include:

- the disease or condition being reported
- patient's name, age, sex, race/ethnicity, address and telephone number
- reporters name, address and telephone number

Report



Communicable Diseases

The following are mandated by the State of Illinois to be reported to the Kane County Health Department:

Communicable Diseases

Kane County Health Department
1240 N. Highland Ave.
Aurora, IL 60506
630-208-3801 FAX 630-897-8128

Sexually Transmitted Diseases

AIDS – Chancroid – Chlamydia – Gonorrhea – HIV – Syphilis

Kane County Health Department
1240 N. Highland Ave.
Aurora, IL 60506
630-208-3801 FAX 630-897-8128

Tuberculosis

Kane County Health Department
1240 N. Highland Ave.
Aurora, IL 60506
630-264-7665 FAX 630-264-7654

All reports are confidential and should include:

- the disease or condition being reported
- patient's name, age, sex, race/ethnicity, address and telephone number
- physician's name, address and telephone number

Chickenpox (Varicella) Case Report

Effective March 3, 2008 in compliance with Illinois Department of Public Health's Control of Communicable Disease Code (77 Illinois Administrative Code 690) each case of Chickenpox (Varicella) is now reportable within 24 hours of receipt of notification from a parent, guardian, or health care provider.

The following information should be collected and reported to **Kane County Health Department (KCHD), Communicable Disease Program via phone or fax.**

630-897-8128 fax or **630-208-3801** phone

REPORTER INFORMATION

Date of Report _____
Name of Employee Reporting _____
Facility Name _____
Facility Address _____ Facility Phone _____

CASE INFORMATION

Patient's Name _____
Age _____ Date of Birth _____ Race _____ Sex _____
Parent's Name(s) If applicable _____
Home Address _____
City _____ School/Daycare _____
Phone(s) _____
Physician's Name _____ Physician's Phone _____

Date of Visit: _____ Rash Onset Date: ___/___/___

Date(s) of Varicella Vaccination
#1. ___/___/___ Vaccine type _____ Manufacturer _____ Lot # _____
#2. ___/___/___ Vaccine type _____ Manufacturer _____ Lot # _____

Rash Localized: Y ___ N ___ Rash Generalized: Y ___ N ___
Rash 1st developed on: *Arms*: Y ___ N ___ *Face/Head*: Y ___ N ___ *Legs*: Y ___ N ___ *Trunk*: Y ___ N ___
Fever: Y ___ (if Yes, Fever Onset Date: ___/___/___) N ___

Number Lesions: Less than 50 ___ Greater than 50 ___

Is the pt immunocompromised due to pre-existing medical condition or treatment? Y N

Identify any complications the pt developed:

Encephalitis: Y ___ N ___ Pneumonia: Y ___ N ___ Skin/Soft Tissue infection: Y ___ N ___

Other: _____

Laboratory Testing done: Y ___ N ___

Were licensed antivirals given: Y ___ N ___ Name of Antiviral: _____

Date Started: ___/___/___ Total Days taken: _____

Is pt pregnant: Y ___ N ___ If Yes, EDC: ___/___/___

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Recommendations for Exclusion due to Health Related Issues

Recommended exclusion varies by the disease or infectious agent. Children with the symptoms listed below should be excluded from the childcare or school setting until clinical recovery; or a healthcare provider has determined that the child can return; or children are well enough to participate in usual activities.

NOTE: It is recommended that childcare/preschool providers and schools have policies that are clearly written for excluding sick children and staff.

Below you will find a general exclusion list for your reference.

SYMPTOM	EXCLUSION GUIDELINES
Cough	No exclusion is necessary. Exclusion is recommended if the child is experiencing severe, uncontrolled coughing or wheezing, having difficulty breathing, becomes red or blue in the face, makes high-pitched whooping sounds after coughing, or vomits after coughing.
Diarrhea (defined as the occurrence of three or more loose stools within 24-hours)	Exclusion is recommended until clinical recovery, i.e., absence of diarrhea, fever.
Earache	No exclusion is necessary.
Fever (defined as a the elevation of body temperature, typically considered greater than or equal to temperature over 100.4°F.	No exclusion is necessary, unless the child has symptoms in addition to the fever, such as a rash, sore throat, vomiting, diarrhea, behavior changes, stiff neck, difficulty breathing, etc.
Headache	No exclusion is necessary, unless the headache is severe and accompanied by additional symptoms like vision problems, stiff neck, or behavior change.
Jaundice or unusual color of the skin, eyes, stool, or urine	No exclusion is necessary. Exclusion is recommended until a medical exam indicates the child does not have Hepatitis A or other communicable disease.

Mouth sores	No exclusion is necessary. Exclusion is recommended if the child has excessive drooling.
Rash	No exclusion is necessary. Since rash is a hallmark symptom of many infectious diseases, it is important to try to identify the cause of any rash-related illness.
Stomach ache / Abdominal pain	No exclusion is necessary. Exclusion is recommended if the pain is severe, if the pain appears after an injury, or if the child had symptoms in addition to the stomach ache (such as vomiting, fever, diarrhea, jaundice, etc.)
Swollen glands	No exclusion is necessary. Exclusion is recommended if the child has symptoms in addition to the swollen glands such as difficulty breathing or swallowing, fever, etc.
Vomiting	No exclusion is necessary, unless vomiting is determined to be caused by a communicable condition or the child is in danger of dehydration.



Recommendation Exclusions Criteria of Communicable Diseases

This list below includes exclusion criteria of communicable diseases in accordance with the Illinois Department of Public Health’s Rules and Regulations for Control of Communicable Diseases 2014. This list is not to be considered all inclusive.

Infection or Condition	Exclusion for School/Daycare Children	Reportable cases to Health Department	Reportable Outbreaks to Health Department¶
Chickenpox*	Until all sores have dried and crusted (usually 5 days) and as recommended from the health department.	YES	YES
E. Coli 0157:H7*	Until an appropriate health care provider or health department certifies that the child can attend school or daycare.	YES	YES
Haemophilus Influenzae invasive*	Until an appropriate health care provider and health department certifies that the child is in appropriate therapy and/or can attend school or daycare. Usually until 24 hours after initiation of effective antimicrobial therapy.	YES	YES
Hepatitis A virus*	Until an appropriate health care provider and health department certifies that the child can attend school or daycare. Usually 2 weeks after an onset of illness or 1 week after onset of jaundice and as directed by the health department.	YES	YES
Measles*	Until 4 days after an onset of rash and as directed by the health department.	YES	YES

Infection or Condition	Exclusion for School/Daycare Children	Reportable cases to Health Department	Reportable Outbreaks to Health Department¶
Methicillin Resistant Staphylococcus Aureus(MRSA)	No exclusion is required in general. Students should be excluded from contact sports as wrestling if active lesions are present on the body until lesions have resolved; if large areas of active lesions cannot be covered, then the child should be excluded until lesions are healed. Students may participate in non-contact athletic activities such as weight lifting, running, or jogging provided he/she observes good hygienic practices(e.g., hand washing) and the wound can be covered.	NO	YES
Mumps*	Until 5 days after an onset of parotid gland swelling and as directed by the health department.	YES	YES
Neisseria Meningitidis Invasive*	Until 24 hours after initiation of effective antimicrobial therapy and as directed by the health department.	YES	YES
Norovirus	Until 24 hours after symptoms have stopped. Staff involved in food preparation until 48 hours after symptoms stop.	NO	YES
Pertussis*	Until at least 5 days after start on antibiotic therapy and/as directed by the health department.	YES	YES
Polio*	Until the end of acute phase of disease and as directed by health department.	YES	YES
Rubella *	Until 7 days after an onset of rash and as directed by health department.	YES	YES
Salmonella *	Until clinical recovery, i.e., absence of fever and diarrhea. Food handlers or those in sensitive occupation such as health or child care may be restricted as directed from the health department.	YES	YES
Shigella*	Until clinical recovery, i.e., absence of fever and diarrhea. Food handlers or those in sensitive occupation such as health or child care may be restricted as directed from the health department.	YES	YES

Infection or Condition	Exclusion for School/Daycare Children	Reportable cases to Health Department	Reportable Outbreaks to Health Department¶
Tuberculosis*	Until an appropriate health care provider or health department certifies that the child is in appropriate therapy and can attend school or daycare.	YES	YES

* Refer to Reportable Diseases Poster, because this list is not all inclusive. The schools and daycares shall report to the health department persons suspected of being infected with a reportable infectious disease.

¶ Refer to Appendix: Outbreak definition for Reportable and Non-Reportable Diseases. For the diseases that are not on the list a “General “definition is applied.

References:

1. IDPH Communicable Disease Guide 2002
http://www.idph.state.il.us/health/infect/comm_disease_guide.pdf
2. IDPH Control of Communicable Diseases(77III. Administration Code 690)
http://www.idph.state.il.us/rulesregs/2014_Rules/Adopted/77_IAC_690_2-14.pdf



Kane County Health Department (KCHD) General Guidelines for Control of Outbreaks in Schools and Daycare Settings

I. Reporting

Reporting communicable disease outbreaks in schools and daycares serves many purposes. **The immediate goal is to control further spread of the disease.** Beyond that, information gained from outbreak investigations can help schools and public health agencies identify and eliminate sources of infection such as contaminated products, learn about emerging problems, identify carriers to mitigate their role in disease transmission, and implement new strategies for prevention within schools and daycares.

Often in the school setting it is difficult to determine whether or not an outbreak exists. *Appendix A* has a list of outbreaks which should be reported by the school or daycare to the KCHD. If the situation does not fit any of these criteria, but you think an outbreak might be occurring, please contact your KCHD for guidance.

An outbreak may be occurring if:

- 1) Several children who exhibit similar symptoms are in the same classroom, the same wing of a facility or they attended a common event
- 2) There is an increase in school absences with many parents reporting similar symptoms as the reason why their child is not attending school
- 3) Two or more students are diagnosed with the same reportable disease

Note: Do not wait for confirmation in these instances as the potential for an outbreak exists.

Reporting refers not only to the initial outbreak notification, but also to the provision of routine updates on the status of the outbreak. The school and the KCHD shall be in frequent contact regarding case numbers, control measures taken, and other pertinent information.

II. Steps in an Outbreak

A) Schools and daycares

Upon suspecting of an outbreak:

- 1. Gather information to confirm an outbreak – provide as much of the following as possible:**
 - Provide total number of students and staff in school/ daycare.
 - Start a line list (also known as an illness log) that includes all ill children and staff. For any gastrointestinal illnesses refer to Appendix B and compile a list of food handlers that have been ill, along with their specific duties. A food handler is any person directly preparing or handling food. Food handlers may range from staff providing a snack in a daycare setting to a cafeteria worker.
 - Compile a list of extracurricular activities and special events. Examples of extracurricular activities or events might include sports, social events, clubs, etc.
- 2. The school/daycare shall** notify the KCHD Communicable Disease Program. Notification **MUST** be made by phone. KCHD has someone available 24/7 who can take the report.
- 3. Perform active surveillance as directed by KCHD**
 - Be alert for new-onset illness among exposed persons, and review student and staff histories to identify previous onsets of illness that may not have been correctly recognized as being part of the outbreak. When a student is absent, ask parents to provide the reason for the student’s absence in order to determine if the student is part of the outbreak and in need of further follow up by the KCHD.
- 4. Document and count cases:**
 - The school shall maintain a daily log (line list) of the number of students and teacher absent due to illness.
 - The school shall complete the absenteeism table (see *Appendix C*).
 - The line list and the absenteeism table will be shared with KCHD epidemiologist to assess the status of the outbreak, and make recommendations regarding control measures.

B) KCHD Communicable Disease Program

Upon notification:

1. The KCHD staff will determine if an outbreak does exist.
2. The KCHD staff will assess the report and shall lead the investigation by providing the school with guidance, support and assistance.
3. Based on the assessment of the KCHD, confirmation of the diagnosis with a laboratory test may be necessary. Lab testing may be done through a private physician and laboratory, or the state laboratory .The KCHD staff shall facilitate lab testing and/or specimen transport.
4. The KCHD staff should collaborate with the school and daycares to determine the outbreak source.
5. The KCHD staff, in consultation with IDPH epidemiologist, shall provide recommendations and guidance to the school regarding control measures.

C) School and daycare closures

1. IDPH does not recommend school or daycare closure for outbreaks of infectious disease. The decision to close a school is an administrative decision and one that should be made only after consultation with public health officials and the district medical personnel.
2. Schools should work with KCHD to ensure that recommended control measures (e.g., exclusions, increased cleaning) are being followed. In addition, KCHD in conjunction with IDPH may recommend enhanced surveillance be conducted in a school in order to monitor the progression and ultimate decline of an outbreak.
3. If the school or daycare decides to close the school based on their administrative decision, then the KCHD should be notified.

D) Infection control during an outbreak

Ensure general practices are being followed, such as:

1. Gloves should be worn during contact with blood, feces or body fluids.
2. Remove and dispose of gloves after completing tasks, before touching anything else.
3. Reinforce respiratory etiquette to students and staff (coughing and sneezing into a tissue or elbow, properly disposing of tissues).
4. Use appropriate barriers including materials such as disposable diaper table paper, disposable towels and surfaces that can be sanitized in group care settings.
5. Restrict use of equipment and toys to use within a specific area and do not allow children to share without cleaning and disinfecting.
6. Staff assigned to affected classrooms should not rotate to unaffected classrooms.

Additional measures may be necessary, such as:

1. Cleaning and disinfecting; Increase frequency during an outbreak
2. Immediately after spills of body fluids, discard fluid contaminated material in a plastic bag that has been securely sealed.
3. Mops should be cleaned, rinsed with a disinfecting solution, wrung as dry as possible and hung to dry completely. Change mop heads when a new bucket of cleaning solution is prepared, or after cleaning large spills of emesis or fecal material.
4. Do not use a common cloth for cleaning/disinfecting; use paper towels and dispose of them immediately after use.

E) Infection or Condition and Common Symptoms Exclusion for School/Daycare Children see

- Recommendations for Exclusion due to Health Related Issues
- Exclusion Criteria of Communicable Disease
- Recommended School Action for Non-Reportable Diseases

F) Sample Letter to Families about Exposure to Communicable Disease (see SAMPLE LETTERS)

Appendix A



Outbreak Definition for Reportable and Non-Reportable Diseases

General- An outbreak is defined as the occurrence of illness in a person or a group of epidemiologically associated persons, with the rate of frequency clearly in excess of normal expectations (IDPH Communicable Disease Rules and Regulations 2014)

Number of cases indicating presence of an outbreak is disease specific.

Foodborne- An outbreak is defined as any clusters of illnesses in which two or more persons (usually residing in separate households) associated in time and place experience onset of a similar, acute illness (usually gastrointestinal) following ingestion of common food or drink (IDPH Principles and Procedures for Investigating Suspected Outbreaks of Foodborne and Waterborne Illness, 2004).

Waterborne- An outbreak is defined as clusters of illness in which two or more persons (usually residing in separate households) associated in time and place experience onset of a similar, acute illness (usually gastrointestinal) following ingestion of drinking water or recreational contact with water. (IDPH Principles and Procedures for Investigating Suspected Outbreaks of Foodborne and Waterborne Illness, 2004).

Acute Gastroenteritis (AGE) in a School or Daycare Setting- An outbreak is defined as four or more persons with acute onset of vomiting and/or diarrhea in a classroom or in an otherwise defined group of students; or cases in more than 10% of the school's/daycare's census in a single day. (IDPH Guidance for Prevention of Acute Gastroenteritis (AGE) Outbreaks in Daycare Facilities and Schools, 12/20/2011). The most common virus causing AGE is Norovirus. One case of Norovirus is not reportable in Illinois.

Methicillin Resistant Staphylococcus Aureus (MRSA) Cluster in a Community Settings- An outbreak is defined as two or more laboratory confirmed cases of community onset MRSA infection epidemiologically linked to a community setting, including but not limited to, school, correctional facility, daycare setting, or sports team, during a 14 day period for whom an epidemiological link is readily apparent to the reporter (IDPH Communicable Disease Rules and Regulations). One case of MRSA, older than 61 days, it is not reportable in Illinois.

Hand, Food, and Mouth Disease (HFM)- An outbreak is defined as 10 epidemiologically linked persons with clinically compatible illness with onsets within a 10 day period. One case of HFM disease is not reportable in Illinois.

Appendix A

Pertussis in a school or childcare setting- Defined as two or more non household contacts linked by time and place (within 42 days); the outbreak case definition may be used to count cases if one case has been confirmed. One case of Pertussis is reportable in Illinois.

Chicken pox(Varicella)- An outbreak is defined as five or more confirmed cases linked by time and place. One case of Varicella is reportable in Illinois.

Mumps- An outbreak is defined as three or more laboratory confirmed cases linked by time and place. One case of Mumps is reportable in Illinois.

Invasive Group A Strep(GAS)- An outbreak is defined as two or more cases linked by time and place. One case of invasive GAS is reportable in Illinois.

Non-invasive-Group A Strep- An outbreak is defined as 10 epidemiologically linked persons with laboratory confirmed GAS with onsets within 10 days. One case of non-invasive GAS is not reportable in Illinois, unless is diagnosed as GAS Toxic Shock Syndrome.

Respiratory Syncytial Virus (RSV)- An outbreak is defined as two laboratory confirmed cases during a 14-day period that are healthcare associated. Health care associated will be defined as RSV-positive specimen collected more than 2 days after admission to the hospital (i.e., on or after day 3). One case of RSV is not reportable in Illinois.

Scabies - SUSPECT scabies outbreak is defined as:

- TWO or more symptomatic persons with epi-linked exposure AND
- None of the affected persons are diagnosed with Norwegian/crusted scabies
- AND
 - Only ONE person is skin scraping positive, OR
 - Healthcare provider diagnosis of scabies (either skin scraping is not performed or skin scraping performed with negative results) AND scabicide treatment is ordered for TWO or more persons.

Scabies - CONFIRMED scabies outbreak is defined as:

- ONE case of healthcare provider diagnosed Norwegian (crusted) scabies, OR
- TWO or more symptomatic persons with epi-linked exposure and at least TWO are skin scraping positive

One case of Scabies is not reportable in Illinois.

Fifth disease- An outbreak is defined as 15 epidemiologically linked clinically compatible cases with onsets within 15 days. One case of Fifth disease is not reportable in Illinois.

Appendix C



KCHD Absenteeism Log

School Name:

Week Ending:

	Monday	Tuesday	Wednesday	Thursday	Friday
Date:					
Total School enrollment					
# absent					
# absent ILI					
# absent G/I					
# absent other					
# absent unknown					
Absenteeism rate					

Recommended School Action for Non-Reportable Diseases

Disease/ Symptoms	Incubation Period	Early Signs and Symptoms	Period of Communicability	Method of Transmission	Control of Cases	Control of Contacts	General Measures
Common Cold	1-3 days	These include runny nose, watery eyes and a generalized tired feeling.	One day before onset of symptoms to five days after symptoms begin.	By direct contact or inhalation of airborne droplets of nose and throat secretions, or, by indirect contact of hands to articles freshly soiled by discharges of the nose and throat.	Cases need not be excluded from school unless fever is present; children excluded due to fever may be readmitted when fever subsides.	No restrictions	Teach the importance of basic hygiene measures such as covering the mouth when coughing or sneezing, and frequent and proper handwashing before any activity.
Cytomegalovirus (CMV)	3-12 weeks following transfusion or infection acquired during birth.	CMV is ubiquitous and asymptomatic infections are the most common. The few who develop symptoms usually have a mononucleosis-like illness with fever, swollen lymph nodes and sore throat.	CMV excretion may occur for many months and may persist or be episodic for several years following primary infection.	Transmission usually occurs from person to person via direct contact of virus-containing saliva or urine with a break in the skin or a mucous membrane of the eye, nose or mouth.	No restrictions.	No restrictions.	Routine hygienic procedures are the most effective method of preventing CMV transmission. CMV circulation is most prevalent in children younger than 2 years of age. Educate women of childbearing age about the potential risks of acquiring CMV infection and the importance of proper hand washing. If caregivers of children younger than 2 years of age expect to become pregnant, CMV antibody testing and consultation with a physician can identify if they are immune to CMV; for those women without immunity, temporarily limiting contact with children younger than 2 may reduce the risk. Contact with children that does not involve exposure to saliva or urine poses no risk of CMV transmission.

Disease/ Symptoms	Incubation Period	Early Signs and Symptoms	Period of Communicability	Method of Transmission	Control of Cases	Control of Contacts	General Measures
Fifth Disease / Erythema Infectiosum (Parvovirus B19)	Variable, usually 4- 21 days	This is a mild disease, with low-grade or no fever and a distinct facial rash (slapped-cheek appearance) frequently associated with a lace-like rash on the trunk and extremities. The rash fades within a week but may recur for one to three weeks or longer when the person is exposed to sunlight, heat, cold, exercise or stress. Not all infected persons will develop a rash. A sore throat, respiratory symptoms and abdominal complaints may precede onset of rash.	In persons with rash illness alone, the period of infectiousness is before onset of the rash; in the immunosuppressed and persons with severe anemia, communicability may last for months to years.	Contact with respiratory secretions; also from woman to fetus when infection occurs during pregnancy.	Because cases are no longer contagious when the rash appears, there are no restrictions. Exclude case if fever is present.	No restrictions.	Persons should cover their noses and mouths when coughing or sneezing and discard used tissues promptly. Wash hands thoroughly after exposure to respiratory secretions. Persons should not share straws, cups, glasses, eating utensils, cigarettes, water bottles used during sports or recreation, etc. Discourage persons from kissing an infant, toddler or child. Susceptible women who are pregnant, or who might become pregnant, should be advised of the possibility of acquiring infection and potential risk of complications to the fetus (including stillbirth), particularly when continuing close contact occurs. A blood test can determine if the woman has immunity. Pregnant women with sick children at home are reminded to wash hands frequently and to avoid sharing drinking cups or eating utensils.
Gastroenteritis, Viral	1-4 days	Stomach ache, nausea, vomiting, diarrhea, fever.	Variable, during diarrheal illness and for one to several days following resolution of symptoms.	Person-to-person via the fecal-oral route; also spread via food or drinks contaminated by an infected food handler and by contaminated water.	Exclude case from school until clinical recovery, i.e., absence of diarrhea and fever.	No restrictions.	Teach the importance of proper handwashing. Adults should supervise the handwashing of children/youths.

Disease/ Symptoms	Incubation Period	Early Signs and Symptoms	Period of Communicability	Method of Transmission	Control of Cases	Control of Contacts	General Measures
Giardia	5- 25 days but sometimes longer	Stomach ache, diarrhea, bloating; may recur several times over a period of weeks; asymptomatic infections common.	Entire period of infection with this parasite.	Person-to-person via the fecal-oral route; also via food or drinks contaminated by an infected food handler; can be transmitted by contaminated water.	Exclude case from school until clinical recovery, i.e., absence of diarrhea and fever.	No restrictions in general school population.	Teach the importance of proper handwashing; adults should supervise the handwashing of children/youths. Giardiasis can spread quickly in day care centers. Treatment is recommended.
Hand, Foot and Mouth Disease (Coxsackievirus A1*	3-7 days	There is usually a mild fever, often a sore throat, loss of appetite, small red spots in the mouth (on the tongue, gums and the inside of the cheeks) that may blister. If there is a rash on the skin, it may be flat or raised red spots that blister. Rash can occur on the palms and fingers of the hands or on the soles of the feet and on the buttocks. Symptoms may last for seven to 10 days or infections can be asymptomatic.	Virus can be excreted before symptoms appear, during illness and for several weeks after symptoms have resolved.	The fluid in the blisters or ulcers contains virus, which can be passed to another person through nasal and oral secretions, or from an infected person's feces. Hand-foot-and- mouth disease is not transmitted to or from animals or pets; it is not associated with the similarly named disease that can cause serious illness in cattle.	While there are no restrictions, in a child care facility when multiple cases are occurring, some benefit may be gained by excluding very young children with blisters in their mouths who drool or who have weeping lesions on their hands until their symptoms resolve. In general, most infected children do not need to be excluded unless fever is present or they are not well enough to participate in usual activities.	No restrictions.	Teach the importance of basic hygiene measures such as covering the mouth when coughing or sneezing and frequent, proper handwashing before any activity that brings hands in contact with the mouth, e.g., eating, drinking, smoking, etc. Emphasize the importance of proper disposal of used tissues; prompt handwashing after handling articles soiled with oral secretions or discharges from the nose and immediately after diaper changing or toileting; and not sharing glasses, straws, water bottles, eating utensils, etc.

Disease/ Symptoms	Incubation Period	Early Signs and Symptoms	Period of Communicability	Method of Transmission	Control of Cases	Control of Contacts	General Measures
Head Lice (Pediculosis)	Eggs hatch in seven to 10 days	Scratching of the scalp; pinpoint gray/white eggs (nits) attached securely to the hair shaft	Lice or eggs (nits) are viable until destroyed by treatment. A second pediculicide application is recommended 7-10 days following the first treatment.	By direct contact with an infested person, clothing or article	Exclude case from school until the day after the first shampoo, lotion or cream rinse pediculicide is properly applied.	If head lice are found in several children in one classroom, or in more than one classroom in a school, all students need to be examined.	Teach the importance of not sharing combs, brushes, hats and coats. Store coats, hats, scarves, etc., separately; if these items are stored on hooks, hang far enough apart to prevent items from touching. Contact your local health authority for recommendations for the control of pediculosis.
Herpes Simplex Virus - HSV (Cold Sores or Genital Herpes)	2- 12 days	Primary infections are without symptoms in 50 percent or more of infected persons; fever and malaise may be present; a sore or ulcer may be accompanied by itching and may be painful; the sore may be raised; lesions can occur on the lip, mouth, throat, eye, external genitalia or vagina. Herpes simplex lesions can also appear on areas of the body such as the torso, arms and legs.	During presence of lesions and if the virus is being shed asymptotically.	Person-to-person by direct contact with secretions from the herpes simplex sores, from genital secretions or saliva of infected persons.	No restrictions other than students should be excluded from contact sports such as wrestling if active lesions are present on the body (outside the genital area) until lesions have resolved; if large areas of active lesions cannot be covered or if exposure to infectious secretions by other students cannot be avoided, the student infected with herpes simplex should be excluded until lesions are scabbed.	No restrictions.	Routine personal hygiene measures can help prevent herpes simplex infections from being transmitted; for example, towels, clothing, and eating and drinking utensils should not be shared.

Disease/ Symptoms	Incubation Period	Early Signs and Symptoms	Period of Communicability	Method of Transmission	Control of Cases	Control of Contacts	General Measures
Impetigo*	4- 10 days	Blisters on skin that open and become covered with yellowish crust; no fever.	As long as lesions continue to drain or a carrier state persists.	Person-to-person by direct contact with nasal discharges or with a person who has purulent lesions; hands are the most important means of spread.	Exclude case from school until 24 hours after treatment begins.	No restrictions.	Keep lesions covered while in school if possible; teach the importance of proper handwashing and emphasize strict personal hygiene. Keep fingernails clean and trimmed.
Infectious Mononucleosis (Epstein-Barr virus, or EBV)	4-6 weeks	Fever, sore throat, swollen glands and fatigue are common; sometimes the liver and spleen are affected and enlarged.	Prolonged; shedding of the virus in oral secretions may persist for a year or more after infection; 15 percent to 20 percent or more of healthy adults who are EBV antibody positive are long-term carriers.	The virus is shed through saliva (also by saliva on hands, on toys, when kissing, etc.); virus is shed in salivaduring the illness and possibly for a year or more after infection.	There are no restrictions. An infected child does not need to be excluded unless he or she has a fever of 100 degrees F or greater or is not well enough to participate in usual activities.	No restrictions.	Teach the importance of basic hygiene measures such as covering the mouth when coughing or sneezing and frequent, proper handwashing before any activity that brings hands in contact with the mouth, e.g., eating, drinking, smoking, etc. Emphasize the importance of proper disposal of used tissues and prompt handwashing after handling articles soiled with respiratory secretions; discourage the sharing of glasses, straws, water bottles, eating utensils, etc. Due to the risk of rupture of the spleen, contact sports should be avoided until permission is given by the physician.

Disease/ Symptoms	Incubation Period	Early Signs and Symptoms	Period of Communicability	Method of Transmission	Control of Cases	Control of Contacts	General Measures
Influenza *	1-5 days	Rapid onset of fever, headache, muscle aches, sore throat and dry cough.	Until three to five days after onset of symptoms in adults, and for up to seven days after onset of symptoms.	By direct contact with droplets of respiratory secretions (influenza virus persists for hours in dried mucus), or through airborne spread in crowded, enclosed spaces	Exclude case from day care or school until clinical recovery, i.e., until 24 hours with no fever, without use of fever-reducing medicine.	No restrictions.	Healthy persons 6 months of age and older who wish to reduce their likelihood of becoming ill with influenza should also consider vaccination. Teach the importance of basic hygiene, especially covering the mouth when coughing or sneezing; educate about hand-to-mucous membrane transmission.
Meningitis, Viral (Aseptic Meningitis)	Variable, determined by the causative agent, usually 2-10 days	Sudden onset of fever, headache, stiff neck (except in infants), nausea, often vomiting.	Variable determined by causative agent.	Viral meningitis can be transmitted by failure to wash hands after toileting or other contact with infected stool, also by direct contact with nose and throat secretions of a person carrying the virus, e.g., kissing on the mouth, drinking from a shared glass or straw, sharing eating utensils, coughing or sneezing cases are transmitted by insects such as mosquitoes or ticks, example arboviruses such as West Nile Virus (WNV).	Exclude case from school until clinical recovery, i.e., absence of fever.	No restrictions.	Teach importance of basic hygiene, especially covering the mouth when coughing or sneezing; not sharing glasses, straws, eating utensils; disposing of used tissues properly; washing hands after handling soiled tissues and after toileting. Prophylactic antibiotics are of no value. Arbovirus infections including (WNV) are not transmitted person to person.

Disease/ Symptoms	Incubation Period	Early Signs and Symptoms	Period of Communicability	Method of Transmission	Control of Cases	Control of Contacts	General Measures
Pink Eye (Conjunctivitis)	1-3days	Pink/redness of the eyes, with white or yellow discharge on the eyelids; eye pain, or redness of the eyelids or skin surrounding the eye may occur.	Until active infection resolves.	By direct contact with discharge from the conjunctivae or upper respiratory tracts of infected persons; from contaminated fingers and other articles, e.g., eye medications.	Exclude case from school for bacterial conjunctivitis until 24 hours after treatment begins or child is examined by a physician and approved for readmission to school.	No restrictions.	Teach the importance of proper handwashing. Allergic conjunctivitis of the eye is not contagious.
Pinworms	3-6 weeks or longer	Perianal itching.	Usually about three weeks.	By direct transfer of infective eggs by hand from anus to mouth of the same or another person; indirectly through articles/items contaminated with eggs of the pinworm, e.g., clothing, bedding, food or anything placed in the mouth if handled with unwashed hands contaminated with eggs of the pinworm.	Exclude case from school until 24 hours after treatment begins.	No restrictions.	Teach the importance of proper handwashing. Adults should supervise the handwashing of children/youths. Families should be informed there is a high frequency of reinfection; all members in the household of the case may need to be treated as a group.

Disease/ Symptoms	Incubation Period	Early Signs and Symptoms	Period of Communicability	Method of Transmission	Control of Cases	Control of Contacts	General Measures
Rash Illness	Variable, dependent on the causative agent	Variable signs may be present. To begin identifying possible causes of the rash, it is important to acquire a detailed description of the rash (e.g., color; raised or level with skin; clear or pustular vesicles or pockets; smooth or sandpaper texture; spotted, diffuse, lace-like or slapped cheek appearance; blanched on touch; initial location and spread on body; discomfort due to itching, pain, etc.).	Variable, determined by causative agent.	Variable, dependent on the causative agent.	Since rash is a hallmark symptom of many infectious diseases, it is important to try to identify the cause of any rash-related illness. Parents of children with rash of unexplained origin should be notified and asked to consult their family physician for diagnosis and treatment.	There are no restrictions in general school or day care population unless the causative agent of the rash indicates treatment or prophylaxis of identified contacts.	Variable, determined by the causative agent.
Respiratory Syncytial Virus (RSV)	1- 10 days	Fever and one or more systemic symptoms, such as chills, headache, body aches, malaise and loss of appetite, either alone or in combination with runny nose, sore throat, swollen glands, bronchitis or pneumonia, are usually present.	RSV is communicable shortly before onset and for the duration of symptoms, usually three to eight days; in infants, RSV shedding may very rarely persist for several weeks or longer after clinical symptoms subside.	RSV is spread through direct contact with respiratory secretions or other articles and environmental surfaces contaminated by respiratory discharges from an infected person.	There are no restrictions. An infected child does not need to be excluded unless he or she has a fever of 100 degrees F or greater or is not well enough to participate in usual activities.	No restrictions.	Teach the importance of basic hygiene measures such as covering the mouth when coughing or sneezing, frequent and proper handwashing before any activity that brings hands in contact with the mouth, e.g., eating, drinking, smoking, etc. Emphasize the importance of proper disposal of used tissues and prompt handwashing after contact with respiratory secretions and after handling articles soiled with respiratory secretions; discourage the sharing of glasses, straws, water bottles, eating utensils, etc.

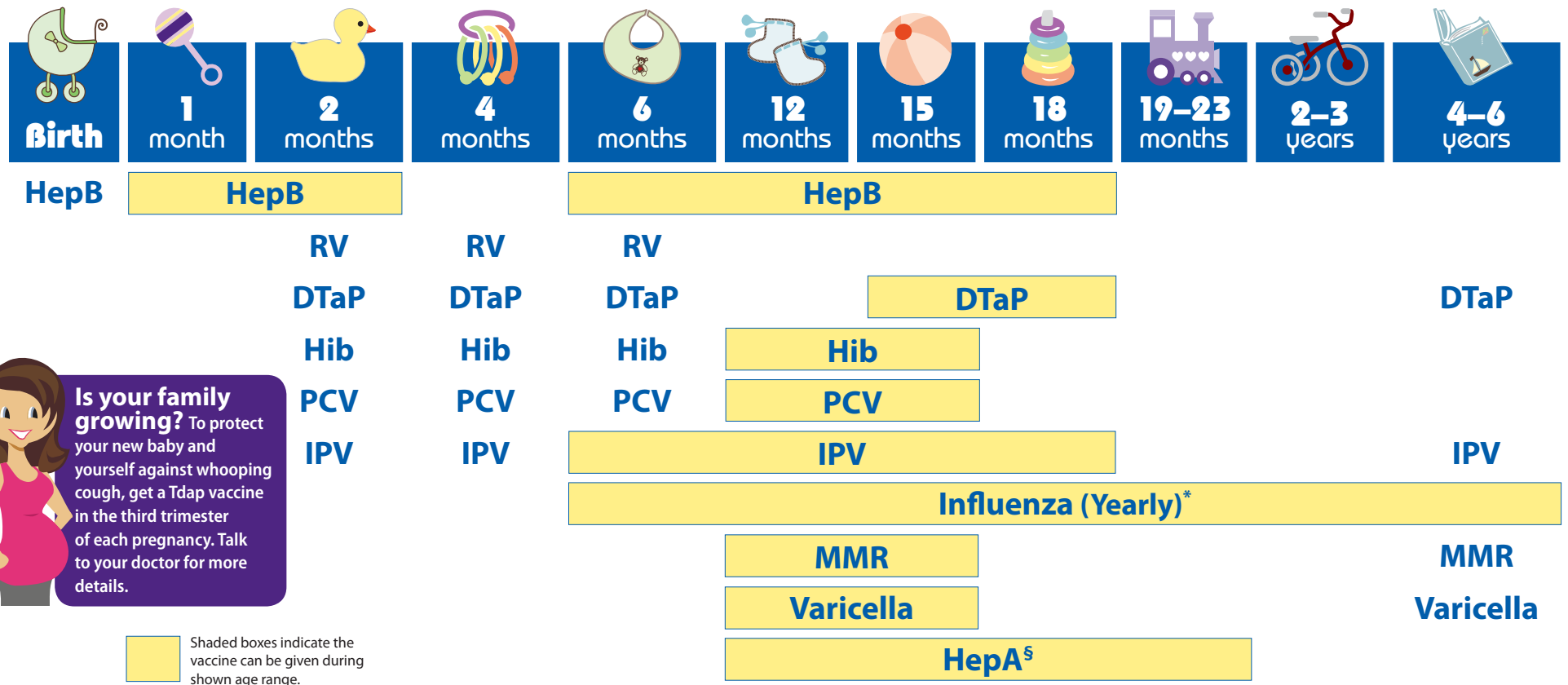
Disease/ Symptoms	Incubation Period	Early Signs and Symptoms	Period of Communicability	Method of Transmission	Control of Cases	Control of Contacts	General Measures
Ringworm(of the body and scalp)	4-10 days for the body; usually 10 to 14 days for the scalp	Ringworm of the skin is a reddish, ringlike rash that is often itchy or flaky but may be moist and crusted and may burn; the central area often clears as it progresses. Ringworm of the scalp may leave scaly, balding patches with broken-off hairs that can slowly spread; raised pus-containing lesions develop occasionally.	As long as lesions are present; viable fungus can persist on contaminated items or materials for long periods.	By direct skin or scalp contact or indirect contact with items or materials contaminated with fungus from skin, clippers, combs, brushes, hats, and clothing. Infections can be acquired from pets and farm animals.	Exclude case from school until 24 hours after treatment begins and the lesion begins to shrink, unless lesion covered; a child need not be excluded if lesion(s) can be covered.	No restrictions.	Teach importance of not sharing towels, clothing, combs, brushes, hair accessories, hats and coats; store clothing items and coats so that these items are separate from one another; teach proper handwashing procedures. Pets with skin rashes should be evaluated by a veterinarian.
Scabies *	First infection, 2-6 weeks; repeat infection 1-4 days	Scratching of small raised red bumps or blisters on skin; intense itching, especially at night.	Scabies can be transmitted until mites and eggs are destroyed by treatment; a second treatment application is recommended one week following the first treatment.	Mites can be transmitted person to person by direct skin-to-skin contact, including during sexual contact; transfer from undergarments and bedclothes occurs only if contaminated immediately beforehand by an infested person.	Exclude case from school until the day after the first scabicide treatment.	There are no restrictions in general school population. Household members and sexual contacts of the case should be treated prophylactically; also treat prophylactically caretakers, companions and others who have had skin-to-skin contact with the case.	The diagnosis of scabies must be made by a physician, most frequently by skin scraping and microscopic exam for this parasite. Red itchy rashes or blisters can be the result of other conditions/disorders that appear very similar to scabies.

Disease/ Symptoms	Incubation Period	Early Signs and Symptoms	Period of Communicability	Method of Transmission	Control of Cases	Control of Contacts	General Measures
Shingles (Herpes Zoster)	Shingles usually appears in adults or older persons but may develop at an earlier age if intrauterine varicella infection, before 2 years of age, HIV infection or immunosuppression have occurred.	Fluid-containing lesions normally appear along nerve pathways and will become crusted; usually this occurs in of normal health status, lesions appear in a group or a crop; in persons with immunosuppression lesions, may be widespread.	Until all shingles lesions are crusted.	The fluid in shingles lesions contains virus that can be spread to another person through direct contact with the fluid when the lesions are not crusted over, or by contact with articles freshly soiled with the fluid from shingles lesions.	A person with shingles may attend school if lesions can be covered to prevent others from contact with fluid from the lesions. If shingles lesions cannot be covered, the person should be excluded until all lesions are crusted.	There are no restrictions among immune or susceptible populations. Varicella vaccine is recommended for all susceptible children. Varicella vaccine can prevent or modify varicella illness within 3-5 days of initial exposure and Varicella-zoster immune globulin (VZIG) given within 96 hours of exposure for immunosuppression and for high-risk neonates.	Any person who has not been immunized against chickenpox, has no reliable history of exposure to chickenpox or has a negative antibody titer for chickenpox, can develop chickenpox following direct or indirect contact with the fluid from shingles lesions before they are crusted over.
Streptococcal Sore Throat and Scarlet Fever*	1-3 days	Initial symptoms are fever, sore throat, often enlarged tender lymph nodes in neck. Scarlet fever appears with a fine, red rash that appears one to three days after onset of sore throat.	Untreated, 10 days to weeks; for treated individuals, generally 24 to 48 hours.	Person-to-person by direct contact with nasal secretions; by ingestion of food contaminated by an infected food handler's nasal secretions or streptococci present on skin; rarely by contact with articles handled by an infected person.	Exclude case from school until 24 hours after treatment begins; readmit provided fever is absent.	No restrictions.	Teach importance of covering mouth when coughing or sneezing. Educate about the importance of proper handwashing. Stress the importance of completing the full course of antibiotics.

*Refer to Appendix A: Outbreak Definition

Source: IDPH Communicable Disease Guide 2002 http://www.idph.state.il.us/health/infect/comm_disease_guide.pdf

2014 Recommended Immunizations for Children from Birth Through 6 Years Old



Is your family growing? To protect your new baby and yourself against whooping cough, get a Tdap vaccine in the third trimester of each pregnancy. Talk to your doctor for more details.

Shaded boxes indicate the vaccine can be given during shown age range.

NOTE: If your child misses a shot, you don't need to start over, just go back to your child's doctor for the next shot. Talk with your child's doctor if you have questions about vaccines.

FOOTNOTES: * Two doses given at least four weeks apart are recommended for children aged 6 months through 8 years of age who are getting a flu vaccine for the first time and for some other children in this age group.
 § Two doses of HepA vaccine are needed for lasting protection. The first dose of HepA vaccine should be given between 12 months and 23 months of age. The second dose should be given 6 to 18 months later. HepA vaccination may be given to any child 12 months and older to protect against HepA. Children and adolescents who did not receive the HepA vaccine and are at high-risk, should be vaccinated against HepA.

If your child has any medical conditions that put him at risk for infection or is traveling outside the United States, talk to your child's doctor about additional vaccines that he may need.

SEE BACK PAGE FOR MORE INFORMATION ON VACCINE-PREVENTABLE DISEASES AND THE VACCINES THAT PREVENT THEM.



For more information, call toll free
1-800-CDC-INFO (1-800-232-4636)
 or visit
<http://www.cdc.gov/vaccines>



U.S. Department of Health and Human Services
 Centers for Disease Control and Prevention



American Academy of Pediatrics



DEDICATED TO THE HEALTH OF ALL CHILDREN™

Vaccine-Preventable Diseases and the Vaccines that Prevent Them

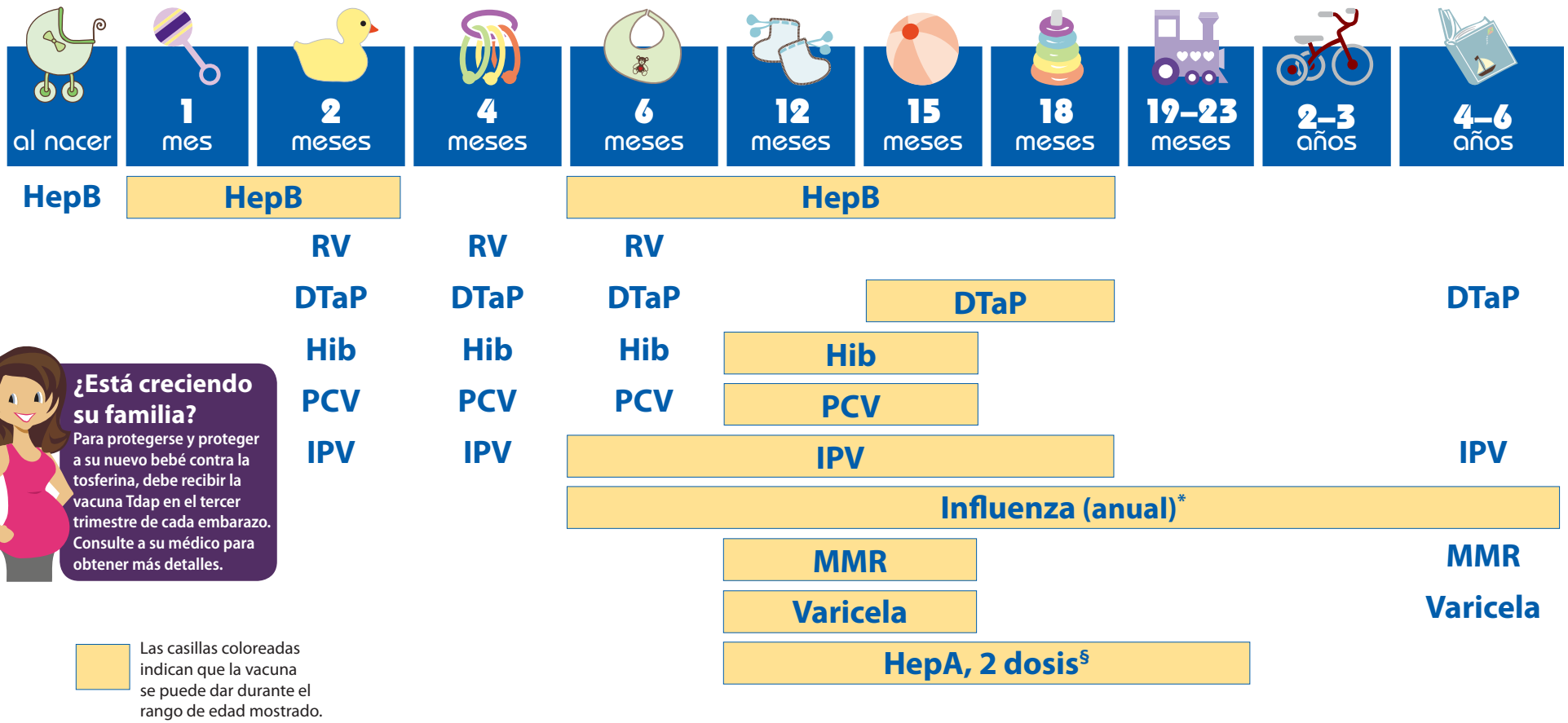
Disease	Vaccine	Disease spread by	Disease symptoms	Disease complications
Chickenpox	Varicella vaccine protects against chickenpox.	Air, direct contact	Rash, tiredness, headache, fever	Infected blisters, bleeding disorders, encephalitis (brain swelling), pneumonia (infection in the lungs)
Diphtheria	DTaP* vaccine protects against diphtheria.	Air, direct contact	Sore throat, mild fever, weakness, swollen glands in neck	Swelling of the heart muscle, heart failure, coma, paralysis, death
Hib	Hib vaccine protects against <i>Haemophilus influenzae</i> type b.	Air, direct contact	May be no symptoms unless bacteria enter the blood	Meningitis (infection of the covering around the brain and spinal cord), intellectual disability, epiglottis (life-threatening infection that can block the windpipe and lead to serious breathing problems), pneumonia (infection in the lungs), death
Hepatitis A	HepA vaccine protects against hepatitis A.	Direct contact, contaminated food or water	May be no symptoms, fever, stomach pain, loss of appetite, fatigue, vomiting, jaundice (yellowing of skin and eyes), dark urine	Liver failure, arthralgia (joint pain), kidney, pancreatic, and blood disorders
Hepatitis B	HepB vaccine protects against hepatitis B.	Contact with blood or body fluids	May be no symptoms, fever, headache, weakness, vomiting, jaundice (yellowing of skin and eyes), joint pain	Chronic liver infection, liver failure, liver cancer
Flu	Flu vaccine protects against influenza.	Air, direct contact	Fever, muscle pain, sore throat, cough, extreme fatigue	Pneumonia (infection in the lungs)
Measles	MMR** vaccine protects against measles.	Air, direct contact	Rash, fever, cough, runny nose, pinkeye	Encephalitis (brain swelling), pneumonia (infection in the lungs), death
Mumps	MMR** vaccine protects against mumps.	Air, direct contact	Swollen salivary glands (under the jaw), fever, headache, tiredness, muscle pain	Meningitis (infection of the covering around the brain and spinal cord), encephalitis (brain swelling), inflammation of testicles or ovaries, deafness
Pertussis	DTaP* vaccine protects against pertussis (whooping cough).	Air, direct contact	Severe cough, runny nose, apnea (a pause in breathing in infants)	Pneumonia (infection in the lungs), death
Polio	IPV vaccine protects against polio.	Air, direct contact, through the mouth	May be no symptoms, sore throat, fever, nausea, headache	Paralysis, death
Pneumococcal	PCV vaccine protects against pneumococcus.	Air, direct contact	May be no symptoms, pneumonia (infection in the lungs)	Bacteremia (blood infection), meningitis (infection of the covering around the brain and spinal cord), death
Rotavirus	RV vaccine protects against rotavirus.	Through the mouth	Diarrhea, fever, vomiting	Severe diarrhea, dehydration
Rubella	MMR** vaccine protects against rubella.	Air, direct contact	Children infected with rubella virus sometimes have a rash, fever, swollen lymph nodes	Very serious in pregnant women—can lead to miscarriage, stillbirth, premature delivery, birth defects
Tetanus	DTaP* vaccine protects against tetanus.	Exposure through cuts in skin	Stiffness in neck and abdominal muscles, difficulty swallowing, muscle spasms, fever	Broken bones, breathing difficulty, death

* DTaP combines protection against diphtheria, tetanus, and pertussis.

** MMR combines protection against measles, mumps, and rubella.

Last updated January 2014 • CS245366-A -

2014 Vacunas recomendadas para niños, desde el nacimiento hasta los 6 años de edad



¿Está creciendo su familia?
Para protegerse y proteger a su nuevo bebé contra la tosferina, debe recibir la vacuna Tdap en el tercer trimestre de cada embarazo. Consulte a su médico para obtener más detalles.

NOTA:
Si su hijo no recibió una de las dosis, no se necesita volver a empezar, solo llévelo al pediatra para que le apliquen la siguiente. Consulte al médico de su hijo si tiene preguntas sobre las vacunas.

NOTAS A PIE DE PÁGINA:
* Se recomiendan dos dosis con un intervalo de por lo menos cuatro semanas para los niños de 6 meses a 8 años que reciben por primera vez la vacuna contra la influenza y para otros niños en este grupo de edad.
§ Se requieren 2 dosis de la vacuna HepA para brindar una protección duradera. La primera dosis de la vacuna HepA se debe administrar durante los 12 y los 23 meses de edad. La segunda dosis se debe administrar 6 a 18 meses después. La vacuna HepA se puede administrar a todos los niños de 12 meses de edad o más para protegerlos contra la hepatitis A. Los niños y adolescentes que no recibieron la vacuna HepA y tienen un riesgo alto, deben vacunarse contra la hepatitis A.
Si su niño tiene alguna afección que lo pone en riesgo de contraer infecciones o si va a viajar al extranjero, consulte al pediatra sobre otras vacunas que pueda necesitar.

MÁS INFORMACIÓN AL REVERSO SOBRE ENFERMEDADES PREVENIBLES CON LAS VACUNAS Y LAS VACUNAS PARA PREVENIRLAS.

Para más información, llame a la línea de atención gratuita
1-800-CDC-INFO (1-800-232-4636)
o visite
<http://www.cdc.gov/vaccines>



U.S. Department of Health and Human Services
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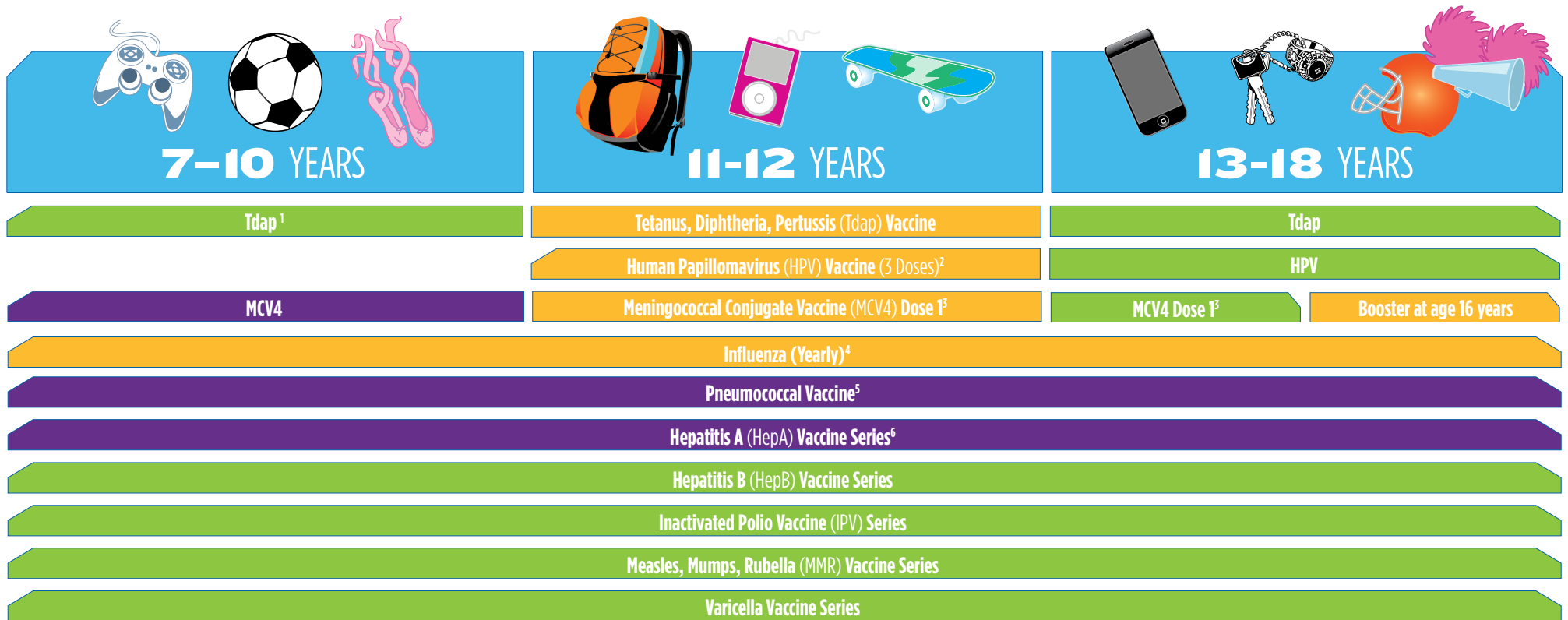
Enfermedades prevenibles con las vacunas y vacunas para prevenirlas

Enfermedad	Vacuna	Enfermedad transmitida por	Signos y síntomas de la enfermedad	Complicaciones de la enfermedad
Varicela	Vacuna contra la varicela.	Aire, contacto directo	Sarpullido, cansancio, dolor de cabeza, fiebre	Ampollas infectadas, trastornos hemorrágicos, encefalitis (inflamación del cerebro), neumonía (infección en los pulmones)
Difteria	La vacuna DTaP* protege contra la difteria.	Aire, contacto directo	Dolor de garganta, fiebre moderada, debilidad, inflamación de los ganglios del cuello	Inflamación del músculo cardíaco, insuficiencia cardíaca, coma, parálisis, muerte
Hib	La vacuna contra la Hib protege contra <i>Haemophilus influenzae</i> serotipo b.	Aire, contacto directo	Puede no causar síntomas a menos que la bacteria entre en la sangre	Meningitis (infección en las membranas que recubren el cerebro y la médula espinal), discapacidad intelectual, epiglotis (infección que puede ser mortal en la que se bloquea la tráquea y origina graves problemas respiratorios) y neumonía (infección en los pulmones), muerte
Hepatitis A	La vacuna HepA protege contra la hepatitis A.	Contacto directo, comida o agua contaminada	Puede no causar síntomas, fiebre, dolor de estómago, pérdida del apetito, cansancio, vómito, ictericia (coloración amarilla de la piel y los ojos), orina oscura	Insuficiencia hepática, artralgia (dolor en las articulaciones), trastorno renal, pancreático y de la sangre
Hepatitis B	La vacuna HepB protege contra la hepatitis B.	Contacto con sangre o líquidos corporales	Puede no causar síntomas, fiebre, dolor de cabeza, debilidad, vómito, ictericia (coloración amarilla de los ojos y la piel) dolor en las articulaciones	Infección crónica del hígado, insuficiencia hepática, cáncer de hígado
Influenza (gripe)	La vacuna influenza protege contra la gripe o influenza.	Aire, contacto directo	Fiebre, dolor muscular, dolor de garganta, tos, cansancio extremo	Neumonía (infección en los pulmones)
Sarampión	La vacuna MMR** protege contra el sarampión.	Aire, contacto directo	Sarpullido, fiebre, tos, moqueo, conjuntivitis	Encefalitis (inflamación del cerebro), neumonía (infección en los pulmones), muerte
Paperas	La vacuna MMR** protege contra las paperas.	Aire, contacto directo	Inflamación de glándulas salivales (debajo de la mandíbula), fiebre, dolor de cabeza, cansancio, dolor muscular	Meningitis (infección en las membranas que recubren el cerebro y la médula espinal), encefalitis (inflamación del cerebro), inflamación de los testículos o los ovarios, sordera
Tosferina	La vacuna DTaP* protege contra la tosferina (<i>pertussis</i>).	Aire, contacto directo	Tos intensa, moqueo, apnea (interrupción de la respiración en los bebés)	Neumonía (infección en los pulmones), muerte
Poliomielitis	La vacuna IPV protege contra la poliomiélitis.	Aire, contacto directo, por la boca	Puede no causar síntomas, dolor de garganta, fiebre, náuseas, dolor de cabeza	Parálisis, muerte
Infección neumocócica	La vacuna PCV protege contra la infección neumocócica.	Aire, contacto directo	Puede no causar síntomas, neumonía (infección en los pulmones)	Bacteriemia (infección en la sangre), meningitis (infección en las membranas que recubren el cerebro y la médula espinal), muerte
Rotavirus	La vacuna RV protege contra el rotavirus.	Por la boca	Diarrea, fiebre, vómito	Diarrea intensa, deshidratación
Rubéola	La vacuna MMR** protege contra la rubéola.	Aire, contacto directo	Los niños infectados por rubéola a veces presentan sarpullido, fiebre y ganglios linfáticos inflamados	Muy grave en las mujeres embarazadas: puede causar aborto espontáneo, muerte fetal, parto prematuro, defectos de nacimiento
Tétano	La vacuna DTaP* protege contra el tétano.	Exposición a través de cortaduras en la piel	Rigidez del cuello y los músculos abdominales, dificultad para tragar, espasmos musculares, fiebre	Fractura de huesos, dificultad para respirar, muerte

* La vacuna DTaP combina la protección contra la difteria, el tétano y la tosferina.

** La vacuna MMR combina la protección contra el sarampión, las paperas y la rubéola.

2014 Recommended Immunizations for Children from 7 Through 18 Years Old



These shaded boxes indicate when the vaccine is recommended for all children unless your doctor tells you that your child cannot safely receive the vaccine.

These shaded boxes indicate the vaccine should be given if a child is catching-up on missed vaccines.

These shaded boxes indicate the vaccine is recommended for children with certain health conditions that put them at high risk for serious diseases. Note that healthy children **can** get the HepA series⁶. See vaccine-specific recommendations at www.cdc.gov/vaccines/pubs/ACIP-list.htm.

FOOTNOTES

- ¹ Tdap vaccine is combination vaccine that is recommended at age 11 or 12 to protect against tetanus, diphtheria and pertussis. If your child has not received any or all of the DTaP vaccine series, or if you don't know if your child has received these shots, your child needs a single dose of Tdap when they are 7 -10 years old. Talk to your child's health care provider to find out if they need additional catch-up vaccines.
- ² All 11 or 12 year olds – both girls *and* boys – should receive 3 doses of HPV vaccine to protect against HPV-related disease. Either HPV vaccine (Cervarix® or Gardasil®) can be given to girls and young women; only one HPV vaccine (Gardasil®) can be given to boys and young men.
- ³ Meningococcal conjugate vaccine (MCV) is recommended at age 11 or 12. A booster shot is recommended at age 16. Teens who received MCV for the first time at age 13 through 15 years will need a one-time booster dose between the ages of 16 and 18 years. If your teenager missed getting the vaccine altogether, ask their health care provider about getting it now, especially if your teenager is about to move into a college dorm or military barracks.
- ⁴ Everyone 6 months of age and older—including preteens and teens—should get a flu vaccine every year. Children under the age of 9 years may require more than one dose. Talk to your child's health care provider to find out if they need more than one dose.
- ⁵ Pneumococcal Conjugate Vaccine (PCV13) and Pneumococcal Polysaccharide Vaccine (PPSV23) are recommended for some children 6 through 18 years old with certain medical conditions that place them at high risk. Talk to your healthcare provider about pneumococcal vaccines and what factors may place your child at high risk for pneumococcal disease.
- ⁶ Hepatitis A vaccination is recommended for older children with certain medical conditions that place them at high risk. HepA vaccine is licensed, safe, and effective for all children of all ages. Even if your child is not at high risk, you may decide you want your child protected against HepA. Talk to your healthcare provider about HepA vaccine and what factors may place your child at high risk for HepA.

For more information, call toll free 1-800-CDC-INFO (1-800-232-4636) or visit <http://www.cdc.gov/vaccines/teens>



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Vaccine-Preventable Diseases and the Vaccines that Prevent Them

Diphtheria (Can be prevented by Tdap vaccine)

Diphtheria is a very contagious bacterial disease that affects the respiratory system, including the lungs. Diphtheria bacteria can be passed from person to person by direct contact with droplets from an infected person's cough or sneeze. When people are infected, the diphtheria bacteria produce a toxin (poison) in the body that can cause weakness, sore throat, low-grade fever, and swollen glands in the neck. Effects from this toxin can also lead to swelling of the heart muscle and, in some cases, heart failure. In severe cases, the illness can cause coma, paralysis, and even death.

Hepatitis A (Can be prevented by HepA vaccine)

Hepatitis A is an infection in the liver caused by hepatitis A virus. The virus is spread primarily person-to-person through the fecal-oral route. In other words, the virus is taken in by mouth from contact with objects, food, or drinks contaminated by the feces (stool) of an infected person. Symptoms include fever, tiredness, loss of appetite, nausea, abdominal discomfort, dark urine, and jaundice (yellowing of the skin and eyes). An infected person may have no symptoms, may have mild illness for a week or two, or may have severe illness for several months that requires hospitalization. In the U.S., about 100 people a year die from hepatitis A.

Hepatitis B (Can be prevented by HepB vaccine)

Hepatitis B is an infection of the liver caused by hepatitis B virus. The virus spreads through exchange of blood or other body fluids, for example, from sharing personal items, such as razors or during sex. Hepatitis B causes a flu-like illness with loss of appetite, nausea, vomiting, rashes, joint pain, and jaundice. The virus stays in the liver of some people for the rest of their lives and can result in severe liver diseases, including fatal cancer.

Human Papillomavirus (Can be prevented by HPV vaccine)

Human papillomavirus is a common virus. HPV is most common in people in their teens and early 20s. It is the major cause of cervical cancer in women and genital warts in women and men. The strains of HPV that cause cervical cancer and genital warts are spread during sex.

Influenza (Can be prevented by annual flu vaccine)

Influenza is a highly contagious viral infection of the nose, throat, and lungs. The virus spreads easily through droplets when an infected person coughs or sneezes and can cause mild to severe illness. Typical symptoms include a sudden high fever, chills, a dry cough, headache, runny nose, sore throat, and muscle and joint pain. Extreme fatigue can last from several days to weeks. Influenza may lead to hospitalization or even death, even among previously healthy children.

Measles (Can be prevented by MMR vaccine)

Measles is one of the most contagious viral diseases. Measles virus is spread by direct contact with the airborne respiratory

droplets of an infected person. Measles is so contagious that just being in the same room after a person who has measles has already left can result in infection. Symptoms usually include a rash, fever, cough, and red, watery eyes. Fever can persist, rash can last for up to a week, and coughing can last about 10 days. Measles can also cause pneumonia, seizures, brain damage, or death.

Meningococcal Disease (Can be prevented by MCV vaccine)

Meningococcal disease is caused by bacteria and is a leading cause of bacterial meningitis (infection around the brain and spinal cord) in children. The bacteria are spread through the exchange of nose and throat droplets, such as when coughing, sneezing or kissing. Symptoms include nausea, vomiting, sensitivity to light, confusion and sleepiness. Meningococcal disease also causes blood infections. About one of every ten people who get the disease dies from it. Survivors of meningococcal disease may lose their arms or legs, become deaf, have problems with their nervous systems, become developmentally disabled, or suffer seizures or strokes.

Mumps (Can be prevented by MMR vaccine)

Mumps is an infectious disease caused by the mumps virus, which is spread in the air by a cough or sneeze from an infected person. A child can also get infected with mumps by coming in contact with a contaminated object, like a toy. The mumps virus causes fever, headaches, painful swelling of the salivary glands under the jaw, fever, muscle aches, tiredness, and loss of appetite. Severe complications for children who get mumps are uncommon, but can include meningitis (infection of the covering of the brain and spinal cord), encephalitis (inflammation of the brain), permanent hearing loss, or swelling of the testes, which rarely can lead to sterility in men.

Pertussis (Whooping Cough) (Can be prevented by Tdap vaccine)

Pertussis is caused by bacteria spread through direct contact with respiratory droplets when an infected person coughs or sneezes. In the beginning, symptoms of pertussis are similar to the common cold, including runny nose, sneezing, and cough. After 1-2 weeks, pertussis can cause spells of violent coughing and choking, making it hard to breathe, drink, or eat. This cough can last for weeks. Pertussis is most serious for babies, who can get pneumonia, have seizures, become brain damaged, or even die. About two-thirds of children under 1 year of age who get pertussis must be hospitalized.

Pneumococcal Disease

(Can be prevented by Pneumococcal vaccine)

Pneumonia is an infection of the lungs that can be caused by the bacteria called pneumococcus. This bacteria can cause other types of infections too, such as ear infections, sinus infections, meningitis (infection of the covering around the brain and spinal

cord), bacteremia and sepsis (blood stream infection). Sinus and ear infections are usually mild and are much more common than the more severe forms of pneumococcal disease. However, in some cases pneumococcal disease can be fatal or result in long-term problems, like brain damage, hearing loss and limb loss. Pneumococcal disease spreads when people cough or sneeze. Many people have the bacteria in their nose or throat at one time or another without being ill—this is known as being a carrier.

Polio (Can be prevented by IPV vaccine)

Polio is caused by a virus that lives in an infected person's throat and intestines. It spreads through contact with the feces (stool) of an infected person and through droplets from a sneeze or cough. Symptoms typically include sudden fever, sore throat, headache, muscle weakness, and pain. In about 1% of cases, polio can cause paralysis. Among those who are paralyzed, up to 5% of children may die because they become unable to breathe.

Rubella (German Measles) (Can be prevented by MMR vaccine)

Rubella is caused by a virus that is spread through coughing and sneezing. In children rubella usually causes a mild illness with fever, swollen glands, and a rash that lasts about 3 days. Rubella rarely causes serious illness or complications in children, but can be very serious to a baby in the womb. If a pregnant woman is infected, the result to the baby can be devastating, including miscarriage, serious heart defects, mental retardation and loss of hearing and eye sight.

Tetanus (Lockjaw) (Can be prevented by Tdap vaccine)

Tetanus is caused by bacteria found in soil. The bacteria enters the body through a wound, such as a deep cut. When people are infected, the bacteria produce a toxin (poison) in the body that causes serious, painful spasms and stiffness of all muscles in the body. This can lead to "locking" of the jaw so a person cannot open his or her mouth, swallow, or breathe. Complete recovery from tetanus can take months. Three of ten people who get tetanus die from the disease.

Varicella (Chickenpox) (Can be prevented by varicella vaccine)

Chickenpox is caused by the varicella zoster virus. Chickenpox is very contagious and spreads very easily from infected people. The virus can spread from either a cough, sneeze. It can also spread from the blisters on the skin, either by touching them or by breathing in these viral particles. Typical symptoms of chickenpox include an itchy rash with blisters, tiredness, headache and fever. Chickenpox is usually mild, but it can lead to severe skin infections, pneumonia, encephalitis (brain swelling), or even death.

If you have any questions about your child's vaccines, talk to your healthcare provider.

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Figure 1. Recommended immunization schedule for persons aged 0 through 18 years – United States, 2014.

(FOR THOSE WHO FALL BEHIND OR START LATE, SEE THE CATCH-UP SCHEDULE [FIGURE 2]).

These recommendations must be read with the footnotes that follow. For those who fall behind or start late, provide catch-up vaccination at the earliest opportunity as indicated by the green bars in Figure 1. To determine minimum intervals between doses, see the catch-up schedule (Figure 2). School entry and adolescent vaccine age groups are in bold.

Vaccine	Birth	1 mo	2 mos	4 mos	6 mos	9 mos	12 mos	15 mos	18 mos	19–23 mos	2-3 yrs	4-6 yrs	7-10 yrs	11-12 yrs	13–15 yrs	16–18 yrs
Hepatitis B ¹ (HepB)	1 st dose	←-----2 nd dose-----→			←-----3 rd dose-----→											
Rotavirus ² (RV) RV1 (2-dose series); RV5 (3-dose series)			1 st dose	2 nd dose	See footnote 2											
Diphtheria, tetanus, & acellular pertussis ³ (DTaP: <7 yrs)			1 st dose	2 nd dose	3 rd dose				←-----4 th dose-----→			5 th dose				
Tetanus, diphtheria, & acellular pertussis ⁴ (Tdap: ≥7 yrs)														(Tdap)		
<i>Haemophilus influenzae</i> type b ⁵ (Hib)			1 st dose	2 nd dose	See footnote 5				←-----3 rd or 4 th dose,----- See footnote 5							
Pneumococcal conjugate ⁶ (PCV13)			1 st dose	2 nd dose	3 rd dose				←-----4 th dose-----→							
Pneumococcal polysaccharide ⁶ (PPSV23)																
Inactivated poliovirus ⁷ (IPV) (<18 yrs)			1 st dose	2 nd dose	←-----3 rd dose-----→							4 th dose				
Influenza ⁸ (IIV; LAIV) 2 doses for some: See footnote 8					Annual vaccination (IIV only)						Annual vaccination (IIV or LAIV)					
Measles, mumps, rubella ⁹ (MMR)								←-----1 st dose-----→				2 nd dose				
Varicella ¹⁰ (VAR)								←-----1 st dose-----→				2 nd dose				
Hepatitis A ¹¹ (HepA)								←-----2-dose series, See footnote 11-----→								
Human papillomavirus ¹² (HPV2: females only; HPV4: males and females)															(3-dose series)	
Meningococcal ¹³ (Hib-Men-CY ≥ 6 weeks; MenACWY-D ≥ 9 mos; MenACWY-CRM ≥ 2 mos)			See footnote 13											1 st dose		Booster

Range of recommended ages for all children
 Range of recommended ages for catch-up immunization
 Range of recommended ages for certain high-risk groups
 Range of recommended ages during which catch-up is encouraged and for certain high-risk groups
 Not routinely recommended

This schedule includes recommendations in effect as of January 1, 2014. Any dose not administered at the recommended age should be administered at a subsequent visit, when indicated and feasible. The use of a combination vaccine generally is preferred over separate injections of its equivalent component vaccines. Vaccination providers should consult the relevant Advisory Committee on Immunization Practices (ACIP) statement for detailed recommendations, available online at <http://www.cdc.gov/vaccines/hcp/acip-recs/index.html>. Clinically significant adverse events that follow vaccination should be reported to the Vaccine Adverse Event Reporting System (VAERS) online (<http://www.vaers.hhs.gov>) or by telephone (800-822-7967). Suspected cases of vaccine-preventable diseases should be reported to the state or local health department. Additional information, including precautions and contraindications for vaccination, is available from CDC online (<http://www.cdc.gov/vaccines/recs/vac-admin/contraindications.htm>) or by telephone (800-CDC-INFO [800-232-4636]).

This schedule is approved by the Advisory Committee on Immunization Practices (<http://www.cdc.gov/vaccines/acip>), the American Academy of Pediatrics (<http://www.aap.org>), the American Academy of Family Physicians (<http://www.aafp.org>), and the American College of Obstetricians and Gynecologists (<http://www.acog.org>).

NOTE: The above recommendations must be read along with the footnotes of this schedule.

Footnotes — Recommended immunization schedule for persons aged 0 through 18 years—United States, 2014

For further guidance on the use of the vaccines mentioned below, see: <http://www.cdc.gov/vaccines/hcp/acip-recs/index.html>.

For vaccine recommendations for persons 19 years of age and older, see the adult immunization schedule.

Additional information

- For contraindications and precautions to use of a vaccine and for additional information regarding that vaccine, vaccination providers should consult the relevant ACIP statement available online at <http://www.cdc.gov/vaccines/hcp/acip-recs/index.html>.
- For purposes of calculating intervals between doses, 4 weeks = 28 days. Intervals of 4 months or greater are determined by calendar months.
- Vaccine doses administered 4 days or less before the minimum interval are considered valid. Doses of any vaccine administered ≥ 5 days earlier than the minimum interval or minimum age should not be counted as valid doses and should be repeated as age-appropriate. The repeat dose should be spaced after the invalid dose by the recommended minimum interval. For further details, see *MMWR, General Recommendations on Immunization and Reports / Vol. 60 / No. 2; Table 1. Recommended and minimum ages and intervals between vaccine doses* available online at <http://www.cdc.gov/mmwr/pdf/rr/rr6002.pdf>.
- Information on travel vaccine requirements and recommendations is available at <http://wwwnc.cdc.gov/travel/destinations/list>.
- For vaccination of persons with primary and secondary immunodeficiencies, see Table 13, "Vaccination of persons with primary and secondary immunodeficiencies," in General Recommendations on Immunization (ACIP), available at <http://www.cdc.gov/mmwr/pdf/rr/rr6002.pdf>; and American Academy of Pediatrics. Immunization in Special Clinical Circumstances, in Pickering LK, Baker CJ, Kimberlin DW, Long SS eds. *Red Book: 2012 report of the Committee on Infectious Diseases. 29th ed.* Elk Grove Village, IL: American Academy of Pediatrics.

1. Hepatitis B (HepB) vaccine. (Minimum age: birth)

Routine vaccination:

At birth:

- Administer monovalent HepB vaccine to all newborns before hospital discharge.
- For infants born to hepatitis B surface antigen (HBsAg)-positive mothers, administer HepB vaccine and 0.5 mL of hepatitis B immune globulin (HBIG) within 12 hours of birth. These infants should be tested for HBsAg and antibody to HBsAg (anti-HBs) 1 to 2 months after completion of the HepB series, at age 9 through 18 months (preferably at the next well-child visit).
- If mother's HBsAg status is unknown, within 12 hours of birth administer HepB vaccine regardless of birth weight. For infants weighing less than 2,000 grams, administer HBIG in addition to HepB vaccine within 12 hours of birth. Determine mother's HBsAg status as soon as possible and, if mother is HBsAg-positive, also administer HBIG for infants weighing 2,000 grams or more as soon as possible, but no later than age 7 days.

Doses following the birth dose:

- The second dose should be administered at age 1 or 2 months. Monovalent HepB vaccine should be used for doses administered before age 6 weeks.
- Infants who did not receive a birth dose should receive 3 doses of a HepB-containing vaccine on a schedule of 0, 1 to 2 months, and 6 months starting as soon as feasible. See Figure 2.
- Administer the second dose 1 to 2 months after the first dose (minimum interval of 4 weeks), administer the third dose at least 8 weeks after the second dose AND at least 16 weeks after the **first** dose. The final (third or fourth) dose in the HepB vaccine series should be administered no earlier than age 24 weeks.
- Administration of a total of 4 doses of HepB vaccine is permitted when a combination vaccine containing HepB is administered after the birth dose.

Catch-up vaccination:

- Unvaccinated persons should complete a 3-dose series.
- A 2-dose series (doses separated by at least 4 months) of adult formulation Recombivax HB is licensed for use in children aged 11 through 15 years.
- For other catch-up guidance, see Figure 2.

2. Rotavirus (RV) vaccines. (Minimum age: 6 weeks for both RV1 [Rotarix] and RV5 [RotaTeq])

Routine vaccination:

Administer a series of RV vaccine to all infants as follows:

1. If Rotarix is used, administer a 2-dose series at 2 and 4 months of age.
2. If RotaTeq is used, administer a 3-dose series at ages 2, 4, and 6 months.
3. If any dose in the series was RotaTeq or vaccine product is unknown for any dose in the series, a total of 3 doses of RV vaccine should be administered.

Catch-up vaccination:

- The maximum age for the first dose in the series is 14 weeks, 6 days; vaccination should not be initiated for infants aged 15 weeks, 0 days or older.
- The maximum age for the final dose in the series is 8 months, 0 days.
- For other catch-up guidance, see Figure 2.

3. Diphtheria and tetanus toxoids and acellular pertussis (DTaP) vaccine. (Minimum age: 6 weeks.

Exception: DTaP-IPV [Kinrix]: 4 years)

Routine vaccination:

- Administer a 5-dose series of DTaP vaccine at ages 2, 4, 6, 15 through 18 months, and 4 through 6 years. The fourth dose may be administered as early as age 12 months, provided at least 6 months have elapsed since the third dose.

Catch-up vaccination:

- The fifth dose of DTaP vaccine is not necessary if the fourth dose was administered at age 4 years or older.
- For other catch-up guidance, see Figure 2.

4. Tetanus and diphtheria toxoids and acellular pertussis (Tdap) vaccine. (Minimum age: 10 years for Boostrix, 11 years for Adacel)

Routine vaccination:

- Administer 1 dose of Tdap vaccine to all adolescents aged 11 through 12 years.
- Tdap may be administered regardless of the interval since the last tetanus and diphtheria toxoid-containing vaccine.
- Administer 1 dose of Tdap vaccine to pregnant adolescents during each pregnancy (preferred during 27 through 36 weeks gestation) regardless of time since prior Td or Tdap vaccination.

Catch-up vaccination:

- Persons aged 7 years and older who are not fully immunized with DTaP vaccine should receive Tdap vaccine as 1 (preferably the first) dose in the catch-up series; if additional doses are needed, use Td vaccine. For children 7 through 10 years who receive a dose of Tdap as part of the catch-up series, an adolescent Tdap vaccine dose at age 11 through 12 years should NOT be administered. Td should be administered instead 10 years after the Tdap dose.
- Persons aged 11 through 18 years who have not received Tdap vaccine should receive a dose followed by tetanus and diphtheria toxoids (Td) booster doses every 10 years thereafter.
- Inadvertent doses of DTaP vaccine:
 - If administered inadvertently to a child aged 7 through 10 years may count as part of the catch-up series. This dose may count as the adolescent Tdap dose, or the child can later receive a Tdap booster dose at age 11 through 12 years.
 - If administered inadvertently to an adolescent aged 11 through 18 years, the dose should be counted as the adolescent Tdap booster.
- For other catch-up guidance, see Figure 2.

5. Haemophilus influenzae type b (Hib) conjugate vaccine. (Minimum age: 6 weeks for PRP-T [ACTHIB, DTaP-IPV/Hib (Pentacel) and Hib-MenCY (MenHibrix)], PRP-OMP [PedvaxHIB or COMVAX], 12 months for PRP-T [Hiberix])

Routine vaccination:

- Administer a 2- or 3-dose Hib vaccine primary series and a booster dose (dose 3 or 4 depending on vaccine used in primary series) at age 12 through 15 months to complete a full Hib vaccine series.
- The primary series with ActHIB, MenHibrix, or Pentacel consists of 3 doses and should be administered at 2, 4, and 6 months of age. The primary series with PedvaxHib or COMVAX consists of 2 doses and should be administered at 2 and 4 months of age; a dose at age 6 months is not indicated.
- One booster dose (dose 3 or 4 depending on vaccine used in primary series) of any Hib vaccine should be administered at age 12 through 15 months. An exception is Hiberix vaccine. Hiberix should only be used for the booster (final) dose in children aged 12 months through 4 years who have received at least 1 prior dose of Hib-containing vaccine.

For further guidance on the use of the vaccines mentioned below, see: <http://www.cdc.gov/vaccines/hcp/acip-recs/index.html>.

5. Haemophilus influenzae type b (Hib) conjugate vaccine (cont'd)

- For recommendations on the use of MenHibrix in patients at increased risk for meningococcal disease, please refer to the meningococcal vaccine footnotes and also to *MMWR* March 22, 2013; 62(RR02);1-22, available at <http://www.cdc.gov/mmwr/pdf/rr/rr6202.pdf>.

Catch-up vaccination:

- If dose 1 was administered at ages 12 through 14 months, administer a second (final) dose at least 8 weeks after dose 1, regardless of Hib vaccine used in the primary series.
- If the first 2 doses were PRP-OMP (PedvaxHIB or COMVAX), and were administered at age 11 months or younger, the third (and final) dose should be administered at age 12 through 15 months and at least 8 weeks after the second dose.
- If the first dose was administered at age 7 through 11 months, administer the second dose at least 4 weeks later and a third (and final) dose at age 12 through 15 months or 8 weeks after second dose, whichever is later, regardless of Hib vaccine used for first dose.
- If first dose is administered at younger than 12 months of age and second dose is given between 12 through 14 months of age, a third (and final) dose should be given 8 weeks later.
- For unvaccinated children aged 15 months or older, administer only 1 dose.
- For other catch-up guidance, see Figure 2. For catch-up guidance related to MenHibrix, please see the meningococcal vaccine footnotes and also *MMWR* March 22, 2013; 62(RR02);1-22, available at <http://www.cdc.gov/mmwr/pdf/rr/rr6202.pdf>.

Vaccination of persons with high-risk conditions:

- Children aged 12 through 59 months who are at increased risk for Hib disease, including chemotherapy recipients and those with anatomic or functional asplenia (including sickle cell disease), human immunodeficiency virus (HIV) infection, immunoglobulin deficiency, or early component complement deficiency, who have received either no doses or only 1 dose of Hib vaccine before 12 months of age, should receive 2 additional doses of Hib vaccine 8 weeks apart; children who received 2 or more doses of Hib vaccine before 12 months of age should receive 1 additional dose.
- For patients younger than 5 years of age undergoing chemotherapy or radiation treatment who received a Hib vaccine dose(s) within 14 days of starting therapy or during therapy, repeat the dose(s) at least 3 months following therapy completion.
- Recipients of hematopoietic stem cell transplant (HSCT) should be revaccinated with a 3-dose regimen of Hib vaccine starting 6 to 12 months after successful transplant, regardless of vaccination history; doses should be administered at least 4 weeks apart.
- A single dose of any Hib-containing vaccine should be administered to unimmunized* children and adolescents 15 months of age and older undergoing an elective splenectomy; if possible, vaccine should be administered at least 14 days before procedure.
- Hib vaccine is not routinely recommended for patients 5 years or older. However, 1 dose of Hib vaccine should be administered to unimmunized* persons aged 5 years or older who have anatomic or functional asplenia (including sickle cell disease) and unvaccinated persons 5 through 18 years of age with human immunodeficiency virus (HIV) infection.
** Patients who have not received a primary series and booster dose or at least 1 dose of Hib vaccine after 14 months of age are considered unimmunized.*

6. Pneumococcal vaccines. (Minimum age: 6 weeks for PCV13, 2 years for PPSV23)

Routine vaccination with PCV13:

- Administer a 4-dose series of PCV13 vaccine at ages 2, 4, and 6 months and at age 12 through 15 months.
- For children aged 14 through 59 months who have received an age-appropriate series of 7-valent PCV (PCV7), administer a single supplemental dose of 13-valent PCV (PCV13).

Catch-up vaccination with PCV13:

- Administer 1 dose of PCV13 to all healthy children aged 24 through 59 months who are not completely vaccinated for their age.
- For other catch-up guidance, see Figure 2.

Vaccination of persons with high-risk conditions with PCV13 and PPSV23:

- All recommended PCV13 doses should be administered prior to PPSV23 vaccination if possible.
- For children 2 through 5 years of age with any of the following conditions: chronic heart disease (particularly cyanotic congenital heart disease and cardiac failure); chronic lung disease (including asthma if treated with high-dose oral corticosteroid therapy); diabetes mellitus; cerebrospinal fluid leak; cochlear implant; sickle cell disease and other hemoglobinopathies; anatomic or functional asplenia; HIV infection; chronic renal failure; nephrotic syndrome; diseases associated with treatment with immunosuppressive drugs or radiation therapy, including malignant neoplasms, leukemias, lymphomas, and Hodgkin disease; solid organ transplantation; or congenital immunodeficiency:
 - Administer 1 dose of PCV13 if 3 doses of PCV (PCV7 and/or PCV13) were received previously.
 - Administer 2 doses of PCV13 at least 8 weeks apart if fewer than 3 doses of PCV (PCV7 and/or PCV13) were received previously.

6. Pneumococcal vaccines (cont'd)

- Administer 1 supplemental dose of PCV13 if 4 doses of PCV7 or other age-appropriate complete PCV7 series was received previously.
- The minimum interval between doses of PCV (PCV7 or PCV13) is 8 weeks.
- For children with no history of PPSV23 vaccination, administer PPSV23 at least 8 weeks after the most recent dose of PCV13.

- For children aged 6 through 18 years who have cerebrospinal fluid leak; cochlear implant; sickle cell disease and other hemoglobinopathies; anatomic or functional asplenia; congenital or acquired immunodeficiencies; HIV infection; chronic renal failure; nephrotic syndrome; diseases associated with treatment with immunosuppressive drugs or radiation therapy, including malignant neoplasms, leukemias, lymphomas, and Hodgkin disease; generalized malignancy; solid organ transplantation; or multiple myeloma:
 - If neither PCV13 nor PPSV23 has been received previously, administer 1 dose of PCV13 now and 1 dose of PPSV23 at least 8 weeks later.
 - If PCV13 has been received previously but PPSV23 has not, administer 1 dose of PPSV23 at least 8 weeks after the most recent dose of PCV13.
 - If PPSV23 has been received but PCV13 has not, administer 1 dose of PCV13 at least 8 weeks after the most recent dose of PPSV23.
- For children aged 6 through 18 years with chronic heart disease (particularly cyanotic congenital heart disease and cardiac failure), chronic lung disease (including asthma if treated with high-dose oral corticosteroid therapy), diabetes mellitus, alcoholism, or chronic liver disease, who have not received PPSV23, administer 1 dose of PPSV23. If PCV13 has been received previously, then PPSV23 should be administered at least 8 weeks after any prior PCV13 dose.
- A single revaccination with PPSV23 should be administered 5 years after the first dose to children with sickle cell disease or other hemoglobinopathies; anatomic or functional asplenia; congenital or acquired immunodeficiencies; HIV infection; chronic renal failure; nephrotic syndrome; diseases associated with treatment with immunosuppressive drugs or radiation therapy, including malignant neoplasms, leukemias, lymphomas, and Hodgkin disease; generalized malignancy; solid organ transplantation; or multiple myeloma.

7. Inactivated poliovirus vaccine (IPV). (Minimum age: 6 weeks)

Routine vaccination:

- Administer a 4-dose series of IPV at ages 2, 4, 6 through 18 months, and 4 through 6 years. The final dose in the series should be administered on or after the fourth birthday and at least 6 months after the previous dose.

Catch-up vaccination:

- In the first 6 months of life, minimum age and minimum intervals are only recommended if the person is at risk for imminent exposure to circulating poliovirus (i.e., travel to a polio-endemic region or during an outbreak).
- If 4 or more doses are administered before age 4 years, an additional dose should be administered at age 4 through 6 years and at least 6 months after the previous dose.
- A fourth dose is not necessary if the third dose was administered at age 4 years or older and at least 6 months after the previous dose.
- If both OPV and IPV were administered as part of a series, a total of 4 doses should be administered, regardless of the child's current age. IPV is not routinely recommended for U.S. residents aged 18 years or older.
- For other catch-up guidance, see Figure 2.

8. Influenza vaccines. (Minimum age: 6 months for inactivated influenza vaccine [IIV], 2 years for live, attenuated influenza vaccine [LAIV])

Routine vaccination:

- Administer influenza vaccine annually to all children beginning at age 6 months. For most healthy, nonpregnant persons aged 2 through 49 years, either LAIV or IIV may be used. However, LAIV should NOT be administered to some persons, including 1) those with asthma, 2) children 2 through 4 years who had wheezing in the past 12 months, or 3) those who have any other underlying medical conditions that predispose them to influenza complications. For all other contraindications to use of LAIV, see *MMWR* 2013; 62 (No. RR-7):1-43, available at <http://www.cdc.gov/mmwr/pdf/rr/rr6207.pdf>.

For children aged 6 months through 8 years:

- For the 2013-14 season, administer 2 doses (separated by at least 4 weeks) to children who are receiving influenza vaccine for the first time. Some children in this age group who have been vaccinated previously will also need 2 doses. For additional guidance, follow dosing guidelines in the 2013-14 ACIP influenza vaccine recommendations, *MMWR* 2013; 62 (No. RR-7):1-43, available at <http://www.cdc.gov/mmwr/pdf/rr/rr6207.pdf>.
- For the 2014-15 season, follow dosing guidelines in the 2014 ACIP influenza vaccine recommendations.

For persons aged 9 years and older:

- Administer 1 dose.

For further guidance on the use of the vaccines mentioned below, see: <http://www.cdc.gov/vaccines/hcp/acip-recs/index.html>.

9. **Measles, mumps, and rubella (MMR) vaccine. (Minimum age: 12 months for routine vaccination)**
Routine vaccination:
- Administer a 2-dose series of MMR vaccine at ages 12 through 15 months and 4 through 6 years. The second dose may be administered before age 4 years, provided at least 4 weeks have elapsed since the first dose.
 - Administer 1 dose of MMR vaccine to infants aged 6 through 11 months before departure from the United States for international travel. These children should be revaccinated with 2 doses of MMR vaccine, the first at age 12 through 15 months (12 months if the child remains in an area where disease risk is high), and the second dose at least 4 weeks later.
 - Administer 2 doses of MMR vaccine to children aged 12 months and older before departure from the United States for international travel. The first dose should be administered on or after age 12 months and the second dose at least 4 weeks later.

Catch-up vaccination:

- Ensure that all school-aged children and adolescents have had 2 doses of MMR vaccine; the minimum interval between the 2 doses is 4 weeks.

10. **Varicella (VAR) vaccine. (Minimum age: 12 months)**

Routine vaccination:

- Administer a 2-dose series of VAR vaccine at ages 12 through 15 months and 4 through 6 years. The second dose may be administered before age 4 years, provided at least 3 months have elapsed since the first dose. If the second dose was administered at least 4 weeks after the first dose, it can be accepted as valid.

Catch-up vaccination:

- Ensure that all persons aged 7 through 18 years without evidence of immunity (see *MMWR* 2007; 56 [No. RR-4], available at <http://www.cdc.gov/mmwr/pdf/rr/rr5604.pdf>) have 2 doses of varicella vaccine. For children aged 7 through 12 years, the recommended minimum interval between doses is 3 months (if the second dose was administered at least 4 weeks after the first dose, it can be accepted as valid); for persons aged 13 years and older, the minimum interval between doses is 4 weeks.

11. **Hepatitis A (HepA) vaccine. (Minimum age: 12 months)**

Routine vaccination:

- Initiate the 2-dose HepA vaccine series at 12 through 23 months; separate the 2 doses by 6 to 18 months.
- Children who have received 1 dose of HepA vaccine before age 24 months should receive a second dose 6 to 18 months after the first dose.
- For any person aged 2 years and older who has not already received the HepA vaccine series, 2 doses of HepA vaccine separated by 6 to 18 months may be administered if immunity against hepatitis A virus infection is desired.

Catch-up vaccination:

- The minimum interval between the two doses is 6 months.

Special populations:

- Administer 2 doses of HepA vaccine at least 6 months apart to previously unvaccinated persons who live in areas where vaccination programs target older children, or who are at increased risk for infection. This includes persons traveling to or working in countries that have high or intermediate endemicity of infection; men having sex with men; users of injection and non-injection illicit drugs; persons who work with HAV-infected primates or with HAV in a research laboratory; persons with clotting-factor disorders; persons with chronic liver disease; and persons who anticipate close, personal contact (e.g., household or regular babysitting) with an international adoptee during the first 60 days after arrival in the United States from a country with high or intermediate endemicity. The first dose should be administered as soon as the adoption is planned, ideally 2 or more weeks before the arrival of the adoptee.

12. **Human papillomavirus (HPV) vaccines. (Minimum age: 9 years for HPV2 [Cervarix] and HPV4 [Gardasil])**

Routine vaccination:

- Administer a 3-dose series of HPV vaccine on a schedule of 0, 1-2, and 6 months to all adolescents aged 11 through 12 years. Either HPV4 or HPV2 may be used for females, and only HPV4 may be used for males.
- The vaccine series may be started at age 9 years.
- Administer the second dose 1 to 2 months after the first dose (minimum interval of 4 weeks), administer the third dose 24 weeks after the first dose and 16 weeks after the second dose (minimum interval of 12 weeks).

Catch-up vaccination:

- Administer the vaccine series to females (either HPV2 or HPV4) and males (HPV4) at age 13 through 18 years if not previously vaccinated.
- Use recommended routine dosing intervals (see above) for vaccine series catch-up.

13. **Meningococcal conjugate vaccines. (Minimum age: 6 weeks for Hib-MenCY [MenHibrix], 9 months for MenACWY-D [Menactra], 2 months for MenACWY-CRM [Menveo])**

Routine vaccination:

- Administer a single dose of Menactra or Menveo vaccine at age 11 through 12 years, with a booster dose at age 16 years.
- Adolescents aged 11 through 18 years with human immunodeficiency virus (HIV) infection should receive a 2-dose primary series of Menactra or Menveo with at least 8 weeks between doses.
- For children aged 2 months through 18 years with high-risk conditions, see below.

Catch-up vaccination:

- Administer Menactra or Menveo vaccine at age 13 through 18 years if not previously vaccinated.
- If the first dose is administered at age 13 through 15 years, a booster dose should be administered at age 16 through 18 years with a minimum interval of at least 8 weeks between doses.
- If the first dose is administered at age 16 years or older, a booster dose is not needed.
- For other catch-up guidance, see Figure 2.

Vaccination of persons with high-risk conditions and other persons at increased risk of disease:

- Children with anatomic or functional asplenia (including sickle cell disease):
 1. For children younger than 19 months of age, administer a 4-dose infant series of MenHibrix or Menveo at 2, 4, 6, and 12 through 15 months of age.
 2. For children aged 19 through 23 months who have not completed a series of MenHibrix or Menveo, administer 2 primary doses of Menveo at least 3 months apart.
 3. For children aged 24 months and older who have not received a complete series of MenHibrix or Menveo or Menactra, administer 2 primary doses of either Menactra or Menveo at least 2 months apart. If Menactra is administered to a child with asplenia (including sickle cell disease), do not administer Menactra until 2 years of age and at least 4 weeks after the completion of all PCV13 doses.
- Children with persistent complement component deficiency:
 1. For children younger than 19 months of age, administer a 4-dose infant series of either MenHibrix or Menveo at 2, 4, 6, and 12 through 15 months of age.
 2. For children 7 through 23 months who have not initiated vaccination, two options exist depending on age and vaccine brand:
 - a. For children who initiate vaccination with Menveo at 7 months through 23 months of age, a 2-dose series should be administered with the second dose after 12 months of age and at least 3 months after the first dose.
 - b. For children who initiate vaccination with Menactra at 9 months through 23 months of age, a 2-dose series of Menactra should be administered at least 3 months apart.
 - c. For children aged 24 months and older who have not received a complete series of MenHibrix, Menveo, or Menactra, administer 2 primary doses of either Menactra or Menveo at least 2 months apart.
- For children who travel to or reside in countries in which meningococcal disease is hyperendemic or epidemic, including countries in the African meningitis belt or the Hajj, administer an age-appropriate formulation and series of Menactra or Menveo for protection against serogroups A and W meningococcal disease. Prior receipt of MenHibrix is not sufficient for children traveling to the meningitis belt or the Hajj because it does not contain serogroups A or W.
- For children at risk during a community outbreak attributable to a vaccine serogroup, administer or complete an age- and formulation-appropriate series of MenHibrix, Menactra, or Menveo.
- For booster doses among persons with high-risk conditions, refer to *MMWR* 2013; 62(RR02);1-22, available at <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6202a1.htm>.

Catch-up recommendations for persons with high-risk conditions:

1. If MenHibrix is administered to achieve protection against meningococcal disease, a complete age-appropriate series of MenHibrix should be administered.
2. If the first dose of MenHibrix is given at or after 12 months of age, a total of 2 doses should be given at least 8 weeks apart to ensure protection against serogroups C and Y meningococcal disease.
3. For children who initiate vaccination with Menveo at 7 months through 9 months of age, a 2-dose series should be administered with the second dose after 12 months of age and at least 3 months after the first dose.
4. For other catch-up recommendations for these persons, refer to *MMWR* 2013; 62(RR02);1-22, available at <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6202a1.htm>.

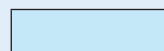
For complete information on use of meningococcal vaccines, including guidance related to vaccination of persons at increased risk of infection, see *MMWR* March 22, 2013; 62(RR02);1-22, available at <http://www.cdc.gov/mmwr/pdf/rr/rr6202.pdf>.

2014 Recommended Immunizations for Adults by Age

Talk to your healthcare professional about these vaccines:	If you are this age,					
	19-21 years	22-26 years	27-49 years	50-59 years	60-64 years	65+ years
Influenza (Flu) ¹	Get a flu vaccine every year					
Tetanus, diphtheria, pertussis (Td/Tdap) ²	Get a Tdap vaccine once, then a Td booster vaccine every 10 years					
Varicella (Chickenpox) ³	2 doses					
HPV Vaccine for Women ^{3,4}	3 doses					
HPV Vaccine for Men ^{3,4}	3 doses	3 doses				
Zoster (Shingles) ⁵					1 dose	
Measles, mumps, rubella (MMR) ³	1 or 2 doses					
Pneumococcal (PCV13) ⁷	1 dose					
Pneumococcal (PPSV23) ⁷	1 or 2 doses					1 dose
Meningococcal	1 or more doses					
Hepatitis A ³	2 doses					
Hepatitis B ³	3 doses					
<i>Haemophilus influenzae</i> type b (Hib)	1 or 3 doses					



Boxes this color show that the vaccine is recommended for all adults who have not been vaccinated, unless your healthcare professional tells you that you cannot safely receive the vaccine or that you do not need it.



Boxes this color show when the vaccine is recommended for adults with certain risks related to their health, job or lifestyle that put them at higher risk for serious diseases. Talk to your healthcare professional to see if you are at higher risk.



No recommendation

FOOTNOTES:

1. Influenza vaccine: There are several flu vaccines available—talk to your healthcare professional about which flu vaccine is right for you.
2. Td/Tdap vaccine: Pregnant women are recommended to get Tdap vaccine with each pregnancy in the third trimester to increase protection for infants who are too young for vaccination, but at highest risk for severe illness and death from pertussis (whooping cough). People who have not had Tdap vaccine since age 11 should get a dose of Tdap followed by Td booster doses every 10 years.
3. Varicella, HPV, MMR, Hepatitis A, Hepatitis B vaccine: These vaccines are needed for adults who didn't get these vaccines when they were children.
4. HPV vaccine: There are two HPV vaccines, but only one, HPV (Gardasil®), should be given to men. Gay men or men who have sex with men who are 22 through 26 years old should get HPV vaccine if they haven't already started or completed the series.
5. Zoster vaccine: You should get the zoster vaccine even if you've had shingles before.
6. MMR vaccine: If you were born in 1957 or after, and don't have a record of being vaccinated or having had these infections, talk to your healthcare professional about how many doses you may need.
7. Pneumococcal vaccine: There are two different types of pneumococcal vaccines: PCV13 and PPSV23. Talk with your healthcare professional to find out if one or both pneumococcal vaccines are recommended for you.


If you are traveling outside of the United States, you may need additional vaccines. Ask your healthcare professional which vaccines you may need.


For more information, call toll free 1-800-CDC-INFO (1-800-232-4636) or visit <http://www.cdc.gov/vaccines>


2014 Recommended Immunizations for Adults by Medical Condition


If you have this health condition,

Talk to your healthcare professional about these vaccines:	Pregnancy	Weakened immune system (not human immunodeficiency virus [HIV])	HIV Infection		Kidney disease or poor kidney function	Asplenia (if you do not have a spleen or it does not work well)	Heart disease, chronic lung disease, chronic alcoholism	Diabetes (Type 1 and Type 2)	Chronic Liver Disease	
			CD4 count is less than 200	CD4 count is 200 or greater						
Influenza (Flu) ¹		Get a flu vaccine every year								
Tetanus, diphtheria, pertussis (Td/Tdap) ²	1 dose Tdap each pregnancy	Get Tdap vaccine once, then a Td booster every 10 years								
Varicella (Chickenpox) ³		SHOULD NOT GET VACCINE		2 doses						
HPV Vaccine for Women ^{3,4}		3 doses through age 26 years								
HPV Vaccine for Men ^{3,4}		3 doses through age 26 years			3 doses through age 21 years					
Zoster (Shingles) ⁵		SHOULD NOT GET VACCINE		1 dose for those 60 years and older						
Measles, mumps, rubella (MMR) ^{3,6}		SHOULD NOT GET VACCINE		1 or 2 doses						
Pneumococcal (PCV13) ⁷		1 dose					1 dose			
Pneumococcal (PPSV23) ⁷	1 or 2 doses	1 or 2 doses					1 or 2 doses			
Meningococcal		1 or more doses			1 or more doses		1 or more doses			
Hepatitis A ³		2 doses								
Hepatitis B ³		3 doses		3 doses		3 doses		3 doses		
<i>Haemophilus influenzae</i> type b (Hib)		post-HSCT recipients only	1 or 3 doses					1 or 3 doses		

 Boxes this color show that the vaccine is recommended for all adults who have not been vaccinated, unless your healthcare professional tells you that you cannot safely receive the vaccine or that you do not need it.

 Boxes this color show when the vaccine is recommended for adults with certain risks related to their health, job or lifestyle that put them at higher risk for serious diseases. Talk to your healthcare professional to see if you are at higher risk.

 Boxes this color indicate the adult should NOT get this vaccine.

 No recommendation

FOOTNOTES:

- Influenza vaccine: There are several flu vaccines available—talk to your healthcare professional about which flu vaccine is right for you.
- Td/Tdap vaccine: Pregnant women are recommended to get Tdap vaccine with each pregnancy in the third trimester to increase protection for infants who are too young for vaccination but at highest risk for severe illness and death from pertussis (whooping cough). People who have not had Tdap vaccine since age 11 should get a dose of Tdap followed by Td booster doses every 10 years.
- Varicella, HPV, MMR, Hepatitis A, Hepatitis B vaccine: These vaccines are needed for adults who didn't get these vaccines when they were children.
- HPV vaccine: There are two HPV vaccines, but only one, HPV (Gardasil®), should be given to men. Gay men or men who have sex with men who are 22 through 26 years old should get HPV vaccine if they haven't already started or completed the series.
- Zoster vaccine: You should get the zoster vaccine even if you've had shingles before.
- MMR vaccine: If you were born in 1957 or after, and don't have a record of being vaccinated or having had these infections, talk to your healthcare professional about how many doses you may need.
- Pneumococcal vaccine: There are two different types of pneumococcal vaccines: PCV13 and PPSV23. Talk with your healthcare professional to find out if one or both pneumococcal vaccines are recommended for you.

If you are traveling outside of the United States, you may need additional vaccines. Ask your healthcare professional which vaccines you may need.

For more information, call toll free 1-800-CDC-INFO (1-800-232-4636) or visit <http://www.cdc.gov/vaccines>



Minimum Immunization Requirements for Those Entering a Child Care Facility or School in Illinois, Fall-2014

Vaccine Requirement	Child Care Facility, Preschool, Early Childhood Pre-Kindergarten Programs	Kindergarten through 12 th Grade		Minimum Intervals Allowed Between Doses and Other Options for Proof of Immunity
		First Entry into School (Kindergarten or First Grade)	Other Grades	
DTP/DTaP/ or Tdap, Td (Diphtheria, Tetanus, Pertussis)	Three doses by 1 year of age One additional booster dose by 2 nd birthday	Four or more doses of DTP/DTaP with the last dose qualifying as a booster and received on or after the 4 th birthday	Three or more doses of DTP/DTaP or Td with the last dose qualifying as a booster and received on or after the 4 th birthday Beginning school year 2013-2014 Students entering 6th thru 12th grades: 1 dose of Tdap	Between series doses: 4 weeks (28 days) Between series and booster: 6 months
Polio	Two doses by 1 year of age. One additional dose by 2 nd birthday	Three or more doses of the same type of Polio vaccine with the last dose qualifying as a booster and received on or after the 4 th birthday. *If the series is given in any combination of polio vaccine types, 4 or more doses are required with the last being a booster on or after the 4 th birthday.	Three or more doses of Polio with the last dose qualifying as a booster and received on or after the 4 th birthday. *If the series is given in any combination of polio vaccine types, 4 or more doses are required with the last being a booster on or after the 4 th birthday.	Minimum interval between series doses: 4 weeks (28 days)
Measles	One dose on or after the 1 st birthday but prior to 24 months of age	Two doses of Measles Vaccine, the 1 st dose must have been received on after the 1 st birthday and the second dose no less than 4 weeks (28 days) later.		<i>Laboratory evidence of measles immunity OR Certified physician verification* of measles disease by date of illness</i> *Cases diagnosed after 7/1/02 must include lab evidence
Rubella	One dose on or after the 1 st birthday but prior to 24 months of age	Two doses of Rubella Vaccine, the 1 st dose must have been received on after the 1 st birthday and the second dose no less than 4 weeks (28 days) later.		<i>Laboratory evidence of rubella immunity</i> History of disease is not acceptable proof of immunity to rubella
Mumps	One dose on or after the 1 st birthday but prior to 24 months of age	Two doses of Mumps Vaccine, the 1 st dose must have been received on after the 1 st birthday and the second dose no less than 4 weeks (28 days) later.		<i>Laboratory evidence of mumps immunity OR Certified physician verification of mumps disease by date of illness</i>
Haemophilus influenzae type b	Refer to Hib vaccination schedule for series Children 24-59 mos. without series must have one dose after 15 mos. of age	Not required after the 5th birthday (60 months of age)		Refer to Hib vaccination schedule
Hepatitis B	Three doses for all children 2 years of age or older Third dose must have been administered on or after 6 months of age (168 days)	No Requirements		Minimum intervals between doses: 1 & 2- at least 4 weeks (28 days) 2 & 3 - at least 2 months (56 days) 1 & 3 - at least 4 months (112 days) <i>Laboratory evidence of prior or current infection</i>
Varicella	One dose on or after the 1 st birthday	Two doses of Varicella Vaccine , the 1 st dose must have been received on after the 1 st birthday and the second dose no less than 4 weeks (28 days) later.		<i>Statement from physician or health care provider verifying disease history OR Laboratory evidence of varicella immunity</i>
		Applies to Children entering grades 6 thru 12 for 2014-2015 school year Three doses administered at recommended intervals		Applies to Students entering grades 1 thru 12 One dose of Varicella on or after the 1 st birthday Applies to Students entering 6th or 9th grade beginning 2014-2015 school year Two doses of Varicella Vaccine, the 1 st dose must have been received on after the 1 st birthday and the second dose no less than 4 weeks (28 days) later <i>Statement from physician or health care provider verifying disease history OR Laboratory evidence of varicella immunity</i>
Invasive Pneumococcal Disease	Refer to PCV vaccination schedule for series Children 24-59 mos. without series must have one dose	Not required after the 5th birthday (60 months of age)		Refer to PCV vaccination schedule

Source: Child Health Examination Code/Part 665, Immunization Code/Part 695, Public Act 095-0159
Prepared by: Illinois Department of Public Health Immunization Section. February 2014

Section 695.APPENDIX A Vaccination Schedule for Haemophilus influenzae type b Conjugate Vaccines (Hib)

Vaccine	Age at 1 st of doses for dose (mos.)	Primary series	Booster	Total number series
HbOC/PRP-T HibTITER™	2-6	3 doses, 2mo. apart ^a	12-15 mo. ^{bc}	4
	7-11	2 doses, 2mo. apart ^a	12-18 mo. ^{bc}	3
	12-14	1 dose	15 mo. ^{bc}	2
ActHib ^e ™ OmniHib™ TETRAMUNE™	15-59	1 dose ^d	None	1
PRP-OMP PedvaxHIB™	2-6	2 doses, 2mo.apart ^a	12 mo. ^{bc}	3
	7-11	2 doses, 2mo.apart ^a	12-18 mo. ^{bc}	3
	12-14	1 dose	15 mo. ^{bc}	2
	15-59	1 dose ^d	None	1
PRP-D ProHIBIT™	15-59	1 dose ^{cd}	None	1

^a Minimally acceptable interval between doses is one month.

^b At least 2 months after previous dose.

^c After the primary infant Hib vaccine series is completed, any of the licensed Hib conjugate vaccines may be used as a booster dose.

^d Children 15-59 months of age should receive only a single dose of Hib vaccine.

^e Reconstituted with DTP as a combined DTP/Hib vaccine

Note: A DTP/Hib combination vaccine can be used in place of HbOC or PRP-T

(Source: Amended at 26 Ill. Reg. 10792, effective July 1, 2002)

**“PROPOSED”
MENINGOCOCCAL CONJUGATE VACCINE (MCV4)
FOR SCHOOL YEAR 2015-2016**

PROPOSED REQUIREMENT WILL BE FOR 6TH AND 12TH GRADE ENTRY

6 th Grade Entry	Must show proof of receiving one dose of meningococcal conjugate vaccine (MCV4)
12 th Grade Entry	Must show proof of receiving two doses of meningococcal conjugate vaccine (MCV4) The second dose of MCV4 must be \geq 16 years of age
	If the first dose of MCV4 was administered \geq 16 years of age, then only 1 dose of MCV4 is required at 12 th grade entry

Two manufacturers for meningococcal conjugate vaccine (MCV4):
Menactra by sanofi Pasteur
Menveo by Novartis

Governor Quinn signed the law in August 2013; this is now proceeding through the administrative rule process.

Recommended Immunization Schedule for Persons Age 0 through 18 Years - United States, 2013

18 Months to 18 Years

Vaccine	18 mos	19-23 mos	2-3 yrs	4-6 yrs	7-10 yrs	11-12 yrs	13-15 yrs	16-18 yrs
Meningococcal - MCV4						←1 st dose→		booster

Range of recommended ages for all children

Range of recommended ages for catch-up immunization

Routine vaccination:

- Administer MCV4 vaccine at age 11–12 years, with a booster dose at age 16 years.
- Adolescents aged 11 through 18 years with human immunodeficiency virus (HIV) infection should receive a 2-dose primary series of MCV4, with at least 8 weeks between doses. See [MMWR 2011; 60: 1018–1019](#).

Catch-up vaccination:

- Administer MCV4 vaccine at age 13 through 18 years if not previously vaccinated.
- If the first dose is administered at age 13 through 15 years, a booster dose should be administered at age 16 through 18 years with a minimum interval of at least 8 weeks between doses.
- If the first dose is administered at age 16 years or older, a booster dose is not needed.

September 2013



Pat Quinn, Governor
LaMar Hasbrouck, MD, MPH, Director

525-535 West Jefferson Street • Springfield, Illinois 62761-0001 • www.idph.state.il.us

MEMORANDUM

TO: Pediatricians, Family Medicine Physicians, Internal Medicine Physicians, Emergency Medicine Physicians, Obstetricians, Gynecologists, and other Healthcare professionals, IDPH Regional Offices and Local Health Departments

FROM: William Moran, Chief, Immunization Section

DATE: March 10, 2014

RE: Reminder of 2014-15 school immunization requirements

Many providers are seeing Illinois students for school physicals and immunizations for the upcoming fall enrollment. This is a reminder of Administrative Code changes impacting immunization requirements effective, fall 2014. Below are the new requirements as well as a web link for additional information.

Hepatitis B:

Previous hepatitis B vaccination requirement for students entering fifth grade has been changed to be a requirement for students *entering sixth grade*:

Children entering the *sixth grade* shall show proof of having received three doses of hepatitis B vaccine, or other proof of immunity described in Section 665.250(f). The first two doses shall have been received no less than four weeks (28 days) apart. The interval between the second and third doses shall be at least two months. The interval between the first and third doses shall be at least four months. Proof of prior or current infection, if verified by laboratory evidence, may be substituted for proof of vaccination.

Rubella:

1. Beginning with the school year 2014-2015, children entering school at any grade level (kindergarten through 12) shall show proof of having received two doses of live rubella virus vaccine, the first dose on or after the first birthday and the second dose no less than four weeks (28 days) after the first dose, or other acceptable proof of immunity.
2. For students attending school programs where grade levels (kindergarten through 12) are not assigned, including special education programs, proof of two doses of live rubella virus vaccine and shall be submitted prior to the school years in which the child reaches

Improving public health, one community at a time

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Illinois Department of Public Health Immunization Section- Regional Contacts

the ages of five, 11 and 15.

Mumps:

1. Beginning with the school year 2014-2015, children entering school at any grade level (kindergarten through 12) shall show proof of having received two doses of live mumps virus vaccine, the first dose on or after the first birthday and the second dose no less than four weeks (28 days) after the first dose, or other acceptable proof of immunity.
2. For students attending school programs where grade levels (kindergarten through 12) are not assigned, including special education programs, proof of having received two doses of live mumps virus vaccine and shall be submitted prior to the school years in which the child reaches the ages of five, 11 and 15.

Varicella:

1. Beginning with school year 2014-2015, any child entering kindergarten, sixth grade, or ninth grade for the first time shall show proof of having received two doses of varicella vaccine, the first dose on or after the first birthday and the second dose no less than four weeks (28 days) after the first dose, or proof of prior varicella disease or laboratory evidence of varicella immunity.
2. For students attending school programs where grade levels (kindergarten through 12) are not assigned, proof of having received at least two doses of varicella vaccine or other proof of immunity shall be submitted prior to the school year in which the child reaches the ages of five, 11 and 15.
3. Only those children who have been (1) immunized with varicella vaccine, (2) have had physician diagnosed varicella disease, (3) have a health care provider's interpretation that a parent's or legal guardian's description of varicella disease is indicative of past infection, (4) or have laboratory evidence of immunity, shall be considered to be immune.

Invasive Pneumococcal Disease:

1. Any child under two years of age entering a child care facility or school program below the kindergarten level shall show proof of immunization that complies with the pneumococcal vaccination schedule in Appendix F (see following page).
2. Children 24 to 59 months of age who have not received the primary series of pneumococcal conjugate vaccine, according to the recommended vaccination schedule, shall show proof of receiving one dose of pneumococcal vaccine.
3. Any child who has reached his or her fifth birthday shall not be required to provide proof of immunization with pneumococcal conjugate vaccine.

For additional information on other immunization requirements, referenced Appendices, immunization exemptions, laboratory evidence of disease, please utilize the following link:

<http://www.ilga.gov/commission/jcar/admincode/077/07700665sections.html> and
<http://www.ilga.gov/commission/jcar/admincode/077/07700695sections.html>

If you have additional questions please call your regional immunization representative. (Map enclosed).

Section 695.APPENDIX B Vaccination Schedule for Pneumococcal Conjugate Vaccines (PVC13)

Age of Child (Months)	Vaccination History	Primary Series and Booster Intervals	Total Doses Required
2-6 minimum age of six weeks	0 doses	3 doses, 2 months apart; 4 th dose at age 12-15 months	4
	1 dose	2 doses, 2 months apart; 4 th dose at age 12-15 months	4
	2 doses	1 dose, 2 months after most recent dose; 4 th dose at age 12-15 months	4
7-11	0 doses	2 doses, 2 months apart; 3 rd dose at age 12-15 months	3
	1 or 2 doses before age 7 months	1 dose, 2 months after most recent dose; 3 rd dose at 12-15 months and > 2 months after prior dose	3-4
12-23	0 doses	2 doses, \geq 2 months apart	2
	1 dose administered before age 12 months	2 doses, \geq 2 months apart	2
	1 dose administered on or after 12 months of age	1 dose \geq 2 months after most recent dose	2
	2 or 3 doses administered before age 12 months	1 dose, \geq 2 months after most recent dose	3-4
24-59 Healthy Children	Any incomplete schedule	1 dose, \geq 2 months after most recent dose	1
Children at High Risk[¶]	Any incomplete schedule	2 doses separated by 2 months	2

[¶] Children with certain chronic conditions or immuno-suppressive conditions are recommended to receive a dose of pneumococcal polysaccharide vaccine (PPV23) in addition to PCV7 two months after the last PCV7.

Illinois Department of Public Health Immunization Section- Regional Contacts



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AIDS and HIV

AIDS (acquired immune deficiency syndrome), caused by infection with the human immunodeficiency virus (HIV), remains one of the most devastating pandemics in modern history. Since HIV was first identified more than 15 years ago, it has spread rapidly to every corner of the globe. In Illinois, more than 26,200 cases of AIDS were reported to the Illinois Department of Public Health between January 1981 and December 2001. Nearly every county in the state has reported at least one case of HIV or AIDS.

What is AIDS?

AIDS is a disease that causes the body to lose its natural protection against infection. A person with AIDS is more likely to become ill from infections and unusual types of pneumonia and cancer that healthy persons normally can fight off. It is caused by the human immunodeficiency virus. The virus, which is found in the blood and other body fluids of infected individuals, attacks certain white blood cells that protect the body against illness. Currently, there is no vaccine or cure for AIDS.

How does someone get HIV?

HIV is not easy to get. Both men and women can become infected and can give the virus to someone else. HIV is found in the blood, semen and vaginal secretions of infected persons and can be spread in the following ways:

- Having sex – vaginal, anal or oral – with an HIV-infected person (male or female)
- Sharing drug needles or injection equipment with an HIV-infected person to inject or "shoot" drugs
- Passing the virus from an HIV-infected woman to her baby during pregnancy or during birth (An infected mother also can pass HIV to her baby through breastfeeding.)

HIV cannot be spread in the following ways:

- Shaking hands, hugging or simple kissing
- Coughs or sneezes, sweat or tears
- Mosquitoes, toilet seats or donating blood
- Eating food prepared or handled by an infected person
- Everyday contact with HIV-infected persons at school, work, home or anywhere else

The most common modes of exposure to HIV are –

- sex between men who have sex with men
- injection drug use
- heterosexual contact, primarily with injection drug users

Because HIV-infected persons may look and feel healthy, many are unaware they are infected and capable of infecting others. Only an HIV antibody test can determine exposure to the virus. Too often, people at greatest risk of HIV infection do not know their high-risk behaviors can result in HIV infection, or they are reluctant or unable to change those high-risk behaviors.

How is HIV diagnosed?

An HIV antibody test, either from a blood sample or an oral sample, can tell whether your body has been infected with the virus. If it has, your immune system makes proteins called antibodies. It takes most persons up to 12 weeks after exposure to develop detectable antibodies ("window period"), but some may take as long as six months. If your test is positive for HIV antibodies, it means you are infected and can infect others. If the test is negative, it generally means you are not infected. But, because the "window period" may be as long as six months, you should be tested again if, in the six months prior to the test, you engaged in behavior that could transmit the virus.

Where is the test available?

Anonymous or confidential counseling and testing services are available at many local health departments and community agencies, including through some outreach testing sites. A trained counselor will help you understand the test, your results and how to protect your health whether you are infected or not. For help locating a convenient test site, call the toll-free AIDS/HIV and STD Hotline at 1-800-243-2437. You also can arrange to be tested by your personal physician.

How can infection with HIV be prevented?

To avoid infection through sex, the only sure way is not to have anal, vaginal or oral sexual intercourse or to have sex only with someone who is not infected and who has sex only with you. Using latex condoms correctly every time you have vaginal, anal or oral sex can greatly lower your risk of infection. Don't impair your judgement with drugs. Never share needles or injection equipment to inject drugs or steroids. HIV in blood from an infected person can remain in a needle, syringe or other item, then be injected directly into the bloodstream of the next user.

Is HIV disease treatable?

People who are infected with HIV can do many things to live healthier and longer lives. First, they must take care of themselves: eat right, get plenty of exercise and sleep and avoid being exposed to airborne and foodborne pathogens. There are also medications that slow the growth of the virus and delay or prevent certain life-threatening conditions. The Illinois Department of Public Health provides FDA-approved prescription drugs through its AIDS Drug Assistance Program (ADAP) for HIV-infected patients who meet specific income guidelines. Since managing the personal, financial and medical aspects of this disease can be daunting for many faced with the challenge, HIV-infected persons generally are offered case management services through 10 HIV care consortia. Case managers coordinate an effective system of care based on each client's individual needs. The ADAP Hotline is 1-800-825-3518.

Is confidential information available?

Yes. To ask questions about personal risk or to learn more about HIV or other sexually transmitted diseases, call the free and anonymous AIDS/HIV and STD Hotline at 1-800-243-2437 or TTY (hearing impaired use only) 1-800-782-0423.

IDPH Communicable Disease Guide 2002

Animal Bites (Potential for Rabies)

Incubation Period

In animals, the incubation period has not been specifically established. In humans, symptoms of rabies usually appear within three to eight weeks but can be days or years following the time of exposure. Once symptoms appear, rabies is almost always fatal.

Early Signs and Symptoms

In animals, rabies may result in behavior changes, e.g., a nocturnal animal appearing during daylight hours; a wild animal allowing humans to approach it; a domesticated animal appearing overly aggressive or overly docile; an animal exhibiting excess salivation, difficulty walking, or having a stunned or paralyzed appearance; or, in the case of a bat, difficulty flying. In humans, rabies is often preceded by a sense of apprehension, headache, fever, malaise, and subtle changes in personality or cognition; pain is often associated with the site of a previous animal bite.

Period of Communicability

In dogs, cats and ferrets, this period is usually three to seven days before signs of illness due to rabies and throughout the course of the disease. In other animals, particularly wild animals, the period of communicability is not specifically established and may be lengthy before signs of rabies appear. Many wild animals, for example, bats, raccoons, skunks, foxes, coyotes, wolves and other biting mammals, may carry rabies. Rabbits, opossums, squirrels, chipmunks, rats and mice are rarely infected with rabies virus. Exposures to birds, fish, amphibians or reptiles never pose a risk of rabies.

Method of Transmission

Transmission occurs when a person is exposed to the saliva of a rabid animal through a bite or scratch or when the animal's saliva contacts a fresh abrasion or mucous membrane. Transmission also can occur if there is exposure to a rabid animal's brain tissue or cerebrospinal fluid.

Control of Cases

Animal bites and scratches should be cleansed immediately by washing the bite site with soap and water; some may require medical attention. **When there is any question about an animal bite or contact with a bat having the potential for rabies exposure, it should be reported to the local health authority.**

Bites from some species, such as bats, may go undetected due to small teeth size, so the local health authority should be contacted to determine if rabies preventive treatment is recommended and if animal control should be notified. Should it be determined that a person not capable of knowing a bite occurred (an infant or a sleeping person) has been present in the same room with a bat, rabies post-exposure prophylaxis will be recommended if the bat cannot be tested and found negative for rabies.

Control of Contacts

No restrictions

General Measures

Educate children to avoid any domestic or wild animal that is acting strangely, is sick or is unfamiliar to them. Teach children to report any contact with a wild animal or any unfamiliar domestic animal to an adult and to inform an adult any time they are bitten or scratched by any animal. Ensure that dogs, cats and ferrets are fully vaccinated against rabies.

Source: Illinois Department of Public Health, Communicable Disease Guide 2002

http://www.idph.state.il.us/health/infect/comm_disease_guide.pdf

Illinois Department of Public Health

Prevention & Control

Bed Bugs

[\(En Español\)](#)

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| <ul style="list-style-type: none">• <u>Identification and Inspection</u> (PDF)• <u>Health Care Facilities</u> (PDF)• <u>Multi-Unit Housing</u> (PDF)• <u>Office Buildings</u> (PDF)• <u>Schools and Day Care Centers</u> (PDF) | <ul style="list-style-type: none">• <u>If You Get Bed Bugs</u> (PDF)• <u>If You Enter Places That Might Have Bed Bugs</u> (PDF)• <u>Bite Back! You can control bed bugs</u> (PDF)• <u>2011 Bed Bug Report</u> (PDF) |
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The bed bug (*Cimex lectularius*) has been a parasite of humans throughout written history. Its adaptation to humans is so complete that its bite is not noticed until well after the bug leaves its victim, if it is noticed at all. Attracted by the warmth of our bodies and the carbon dioxide we exhale, bed bugs emerge usually at night from hiding places, seeking human blood. **While pathogens have been found in bed bugs, the bed bug apparently does not transmit diseases to humans.**

Prior to the widespread use of synthetic insecticides, this small, brown blood-sucking bug was perhaps the most unwanted pest in America. The insidious bed bug was loathed even more than the cockroach. Although the bug's impact was greatly reduced by insecticides during the 1940s and 1950s, it remained an occasional invader of homes, hotels and shelters. Pest management professionals now agree that bed bugs have become the most difficult pest to control.

Bed bugs (*Cimex* spp.) feed on the blood of animals including people and pets. Some species, known as bat bugs, feed on bats, and others on birds such as chickens, pigeons, swallows and swifts. All will wander in search of a new host if their primary host leaves or abandons its roost or nest. In structures, bat bugs typically appear in and around attics and chimneys. Though they will bite humans, they do not survive without their preferred hosts.

Bed bugs can survive more than a year without feeding, but most adults and nymphs probably do not live more than six months without a meal. This ability lets them wait for transient hosts that periodically inhabit camp cabins, apartments and temporary housing. It also helps them survive transportation. Today, bed bugs “hitchhike” more easily than ever, via public transportation and luggage, and in secondhand furniture, mattresses, bedding and clothing. In multi-unit buildings, bed bug infestations that are not adequately attended to often spread between units with or without human help, making eradication much more difficult and costly.

Most people have never seen a bed bug. Adults are wingless, about one-fourth of an inch long, and flat to fit in cracks and crevices where they hide by day. Females typically lay three to five adhesive eggs per day in crevices and depressions. Eggs and newly hatched nymphs are somewhat translucent and only about one-sixteenth of an inch long. After feeding, nymphs become bright red.

At night, bed bugs seek warm hosts, leaving their hiding places in mattresses, box springs, bed frames, nightstands, curtains, couches and wall voids, baseboards, carpet edges, door and window frames, picture frames, smoke detectors, electrical switches and outlets, peeling paint and wallpaper.

BED BUG BITES



Bed bug nymph taking a blood meal

The bed bug painlessly bites its victim, injects saliva to ensure blood flow, and ingests the host’s blood through needle-like mouthparts. During the three to five minutes it takes to complete feeding, the bug elongates and becomes more reddish. It then retreats to its hiding place to digest the meal, and will return to feed in three to 10 days.

Reactions to bed bug bites vary among individuals. Many persons show no signs of bites. Others don’t realize they’ve been bitten until redness and swelling appear around the bite, sometimes with intense itching.

Some exhibit inflamed swollen spots that may occur in linear series or have a rash-like appearance. Such bite marks, when they appear, may not show for several days after the person is bitten.

SIGNS OF BED BUGS

When bed bugs are suspected, sleeping and resting places should be thoroughly inspected. Check all possible hiding places, mindful that bed bugs, especially the young nymphs and eggs, can fit into very tiny cracks and crevices. Don’t overlook places where pets rest, and where bats or birds have entered structures. In these instances, bat or bird bugs, not bed bugs, may be present. If bats or birds are a source of infestation, they should be excluded from the premises. Note that bats and most bird species are protected by law and should not be killed. Contact the Illinois Department of Natural Resources for guidelines on bat or bird exclusion and removal.

Blood smears on bedding may indicate bed bug infestation, along with brownish black specks (bed bug feces) and the amber-colored “shells” (shed exoskeletons) of bed bugs. Heavy infestations can be detected by the peculiar musty sweet odor of bed bug secretions.

MANAGING BED BUGS

Perhaps more than any other structural pest, the bed bug illustrates the need for an integrated pest management (IPM) approach. IPM employs not a single method, such as pesticide application alone, but combines several of the best means of control, often adopting less hazardous and more effective pest management. Thus the best bed bug management plans incorporate more than one of the effective control methods listed below.

ENCASEMENTS

Mattress covers or encasements are used to enclose mattresses and box springs. They can be purchased online or from stores that sell home furnishings and bedding. Good encasements are made of soft material and have zippers that stay zipped, preventing bed bug escape.

If bed bugs are found or suspected on mattresses and box springs, both can be sealed using encasements. Often box springs are the bed bug's primary hiding place. Any bed bugs inside an encasement cannot bite through it and will eventually die.

Encasing mattresses and box springs is often better than treating them with pesticides or throwing them away. Encasements prevent bed bugs from living on mattresses and box springs, and purchasing two encasements is much less expensive than purchasing a new mattress and box springs.

VACUUMING

Once bed bugs and their hideouts are discovered, a pesticide-free solution is to vacuum and dispose of the bag in a tightly sealed garbage bag or trash container. Vacuuming can pick up bed bugs, but bed bug eggs are less susceptible to vacuuming because they are sticky and adhere to surfaces. Moreover, vacuum cleaners can be sources of bed bug distribution. Not all bed bugs are killed when vacuumed. Those that survive may escape from vacuum cleaners and be transported elsewhere if canisters and bags are not disposed of carefully. In addition, bed bugs and their eggs may remain in the brushes and attachments of vacuum cleaners, where they can be transported to other rooms or units. For these reasons, the decision to vacuum should be carefully considered. Where vacuuming is done, it should be done with great care to avoid spreading infestations.

STEAM

Like vacuuming, steam cleaning is not likely to eliminate all bed bugs from the premises, but it can be a useful supplement to pesticide treatments. Steam can be useful for flushing and killing bed bugs hidden deep in furniture such as couches, where insecticide treatment may be ineffective or impractical.

Units that produce "dry" steam are less likely to damage household goods. Steam must be at least 113 degrees Fahrenheit (F), the minimum temperature to kill bed bugs, and care must be taken to reduce pressure so that bed bugs are not literally "blown away" before they can be killed by the steam. Steaming should be avoided around hazards such as electrical outlets.

HEAT

Some infested items can be microwaved to destroy bed bugs. Drying items such as clothing and rugs in a hot dryer for 20 minutes or more also will kill all stages of bed bugs. However, sealing infested items in plastic bags and leaving them in the sun on hot days has not proven effective.

Portable heating enclosures, such as the PackTite™, work by heating infested items to temperatures lethal to bed bugs. They are useful for killing bed bugs in luggage, but may *not* kill all the bed bugs within dense items such as books.

Pest management professionals are increasingly looking to heat to control bed bugs. Whole houses and, in some cases, multi-unit structures are heated to temperatures well above those lethal to bed bugs, to help assure uniform heating of household contents. Rooms must be heated for several hours during which bulky contents are turned to help ensure heat penetration deep enough to kill bed bugs hiding inside.

Heat treatment is labor intensive and requires special equipment. Typically a generator is used to supply power to heating units (maybe three or four for an average-size house) and fans (about two per room) that circulate the heat, usually between 140 F and 150 F. Higher temperatures can damage furnishings and electronic equipment.

Heat treatments of this type are advantageous because they present no pesticide hazard. However, they also provide no residual activity. That is, they do not prevent a structure from being re-infested after it is heat treated. For this reason, residual pesticides are often applied in conjunction with heat treatments. Such applications may not prevent re-infestation, but help control any bed bugs not killed by the heat. A certain percentage of heat treatments, perhaps 10 to 20 percent, fail to kill all the bed bugs present. Often this is due to residents failing to adequately prepare the premises for heating.

COLD

Abrupt temperature change is best when attempting to kill bed bugs, so the bugs do not have time to adjust to the new temperature. Because it can take many hours for heat or cold to penetrate objects, the process of killing bed bugs is complicated by the density and depth of the items to be heated or frozen. It may take 15 days at 32 F to kill bed bug adults and 30 days to kill bed bug eggs that are *unprotected*, and much longer to kill those that are hidden inside items. Temperatures below freezing will kill quicker, but less is known about killing bed bugs with cold compared with using heat against them.

One method of applying freezing temperatures to bed bugs entails the use of carbon dioxide (CO₂) applied as “snow” with a portable application device, i.e., Cryonite™. When applied directly onto bed bugs, the frozen CO₂ will kill them. However, this method is similar to using contact pesticides, that is, there is no residual activity. It can kill only as many bed bugs as the applicator can find. The advantage of using this type of freezing device is that bed bugs may be killed quickly and without the use of more hazardous pesticides. Again, this is not a stand-alone treatment, and it is recommended that it be used as a supplemental to the application of residual pesticides and/or other means of control.

PESTICIDES

Pesticides, including liquid and dust formulations, can be applied directly into cracks and crevices harboring bed bugs. For the majority of bed bug infestations, hiring an experienced pest management

professional is preferable to doing it yourself.

Also known as bombing, fogging and incorrectly as fumigating*, **space treatments with aerosols are ineffective against well-hidden bed bugs and can present a fire or explosion hazard. Their use is not recommended.**

Do not apply pesticides to mattresses, bedding or furniture unless the product's label specifically allows application to those items. Do not apply pesticides to any surfaces that will be in prolonged contact with people.

The effective use of pesticides for bed bug control typically involves a thorough inspection during which the technician will kill any bed bugs he/she discovers, applying contact or residual pesticides directly on the bugs. This is followed by residual application to all cracks, crevices and voids, likely to harbor bed bugs. The pesticide used should be one that remains active for weeks, allowing bed bugs that were missed on the initial inspection to contact treated surfaces long enough to receive a lethal dose.

Research has shown that some bed bugs are resistant to the pyrethroid pesticides that have been most commonly used in recent years by pest management professionals. Likewise, pyrethroids such as deltamethrin and permethrin have been among the active ingredients most commonly available in pesticides at retail stores. The ongoing use of pyrethroids has undoubtedly contributed to the resistance we see today in some bed bug populations.

To varying degrees, bed bugs have been successfully managed using pyrethroids, but more recently with non-pyrethroid pesticides to which bed bugs show little or no resistance.

Relying solely on the application of pesticides to control bed bugs ignores the integrated approach to successful pest control that also should include excluding bed bugs from their hiding places, killing them with heat/steam/cold, and altering human behavior to help contain bed bugs and prevent their spread.

Even with such integrated pest management plans, bed bug eradication often takes weeks or months, and follow-up inspections and treatment as needed should be performed at two-week intervals – at least until residents see no bites or bed bugs for two consecutive months.

INSPECTION

Successful control of bed bugs often depends on thorough inspection of the premises believed to be infested. Finding no insects identified as bed bugs does not mean that bed bugs are not present. It can mean that the inspection was inadequate, or that bed bugs are present but so few in number that the inspector missed them. It is not uncommon for even the most diligent and experienced inspectors to fail to find *all* of the bed bugs present in a structure.

Inspection requires knowledge, dedication and time. At minimum an inspection should involve a detailed examination of mattresses, box springs and bed frames, as well as likely hiding places for bed bugs within 20 feet of beds and other places where residents may sleep or rest, e.g., on couches).

Clutter-free space will be needed to allow furnishings to be moved and manipulated for inspection. In general, rooms with more furnishings will take more time to inspect.

Especially in situations where a large amount of time would be required for a pest management professional to thoroughly inspect a structure, bed bug detecting dogs are sometimes employed. Well-trained and handled dogs can also be of value in structures or units with lesser infestations, i.e., where human inspectors might easily overlook bed bugs because only a few bugs are present.

Dogs have been sniffing out insects such as termites for many years, and are now being used as inspection tools for bed bug detection. But while companies using dogs may advertise them as being highly accurate in finding bed bugs, one should not get the impression that dogs are infallible or that they are in all ways superior to human inspectors. Research on the effectiveness of dogs as bed bug detectors suggests that for those who would employ dogs, the message is *buyer beware*. There appears to be great variance in the accuracy of bed bug dogs, and even well-trained dogs are subject to missing bed bugs and to giving “false positives” (signaling the presence of bed bugs where there are none).

It should also be noted that pest management professionals are subject to state regulation, licensing and regulation, while bed bug dog teams are typically unregulated. In Illinois, for example, bed bug detection dogs are regarded as inspection tools, not devices that facilitate the application of pesticides. A few private organizations certify dogs and their handlers as bed bug detectors, holding them to certain standards before awarding certification. But at present, these organizations, like dogs and handlers, are not subject to regulations that govern those who apply pesticides to control bed bugs. Nevertheless, the National Pest Management Association (NPMA) recommends that bed bug detection teams be independently certified and adhere to the minimum standards found in the NPMA’s *Best Management Practices for Bed Bugs* at: www.npmapestworld.org/publicpolicy/BedBugs.cfm

TRAPS

By itself, trapping is rarely if ever capable of eradicating a bed bug infestation. Bed bug traps are primarily *monitoring* devices, not control devices. They are useful for detecting the presence of bed bugs, especially for detecting them before they multiply and spread.

Unfortunately standard insect monitors (“sticky traps”) are not very good at trapping bed bugs. To date, the best bed bug trap as measured by cost, ease of use, and effectiveness, is the “Climbup™ Insect Interceptor.” This trap resembles a plastic dish and is placed beneath the legs of beds and other furniture on which persons might relax and serve as “bait” for bed bugs. Bed bugs that climb into the dish are unable to climb its slippery inner surface (which is coated with talcum powder). Studies have shown that even inspections performed by trained and experienced pest management professionals often miss some bed bugs, especially in heavier infestations, and that bed leg traps can catch many of those missed bed bugs.

Whether you use traps or not, beds and bedclothes should not touch walls or furniture, and bed clothes should not contact the floor. In this way the bed is isolated, forcing bed bugs that attempt to access a sleeping person, to enter the traps, be captured and expire. Wrapping double-sided carpet tape or duct tape around bed legs also can trap bed bugs attempting to enter beds.

Other types of bed bug traps include those that do not rely on humans as bait, but instead use CO₂ and/or other attractants. CO₂ is thus far the most powerful lure for bed bugs, as it is the primary cue they follow to locate hosts. Traps that issue CO₂ for a period of time are more expensive than Climbup™ traps, but can effectively trap bed bugs when no host is present, such as in common areas, vacant homes or units, offices, schools, and theaters. Thus they can help confirm infestation and eradication.

Versions of bed leg traps and CO₂ traps can be “homemade” and also effective. Constructing a CO₂ trap can be much less expensive than buying one that is commercially available, but care must be taken to avoid burning skin by handling dry ice, and the ice will probably need to be resupplied nightly.

NOTE: When pesticides are used, it is the applicator’s legal responsibility to read and follow directions on the product label. Not following label directions, even if they conflict with information provided herein, is a violation of federal law.

* Typically used for control of wood-destroying organisms, true fumigation of structures is occasionally performed for bed bug control. Fumigating a structure involves “tenting” it, i.e., draping and sealing it with tarps so that the fumigant, a poisonous gas, can be applied into and contained within the structure where it penetrates the contents and kills all pests within. Like whole-room heat treatments, fumigation has no lasting effect (it leaves no pesticide residue), is labor-intensive, and can damage contents. It is also more expensive, especially in northern states where fumigations are done less frequently. The advantage of fumigation over heat treatment may be that fumigation is more likely to kill all the pests within a structure.

Illustrations courtesy of the U.S. Centers for Disease Control and Prevention.

For more information, contact the Illinois Department of Public Health, Division of Environmental Health, 525 W. Jefferson St., Springfield, IL 62761, 217-782-5830, TTY (hearing-impaired use only) 800-547-0466.

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What is campylobacteriosis?

Campylobacteriosis is an infectious disease caused by bacteria of the genus *Campylobacter*. Most people who become ill with campylobacteriosis get diarrhea, cramping, abdominal pain, and fever within two to five days after exposure to the organism. The diarrhea may be bloody and can be accompanied by nausea and vomiting. The illness typically lasts about one week. Some infected persons do not have any symptoms. In persons with compromised immune systems, *Campylobacter* occasionally spreads to the bloodstream and causes a serious life-threatening infection.

How common is *Campylobacter*?

Campylobacter is one of the most common causes of diarrheal illness in the United States. Most cases occur as isolated, sporadic events, not as part of recognized outbreaks. Active surveillance through the Foodborne Diseases Active Surveillance Network (FoodNet) indicates that about 14 cases are diagnosed each year for each 100,000 persons in the population. Many more cases go undiagnosed or unreported, and campylobacteriosis is estimated to affect over 1.3 million persons every year. Campylobacteriosis occurs much more frequently in the summer months than in the winter. The organism is isolated from infants and young adults more frequently than from persons in other age groups and from males more frequently than females. Although *Campylobacter* infection does not commonly cause death, it has been estimated that approximately 76 persons with *Campylobacter* infections die each year.

What sort of germ is *Campylobacter*?

Campylobacter organisms are spiral-shaped bacteria that can cause disease in humans and animals. Most human illness is caused by one species, called *Campylobacter jejuni*, but human illness can also be caused by other species. *Campylobacter jejuni* grows best at 37°C to 42°C, the approximate body temperature of a bird (41°C to 42°C), and seems to be well adapted to birds, who carry it without becoming ill. These bacteria are fragile. They cannot tolerate drying and can be killed by oxygen. They grow only in places with less oxygen than the amount in the atmosphere. Freezing reduces the number of *Campylobacter* bacteria on raw meat.

How is the infection diagnosed?

Many different kinds of infections can cause diarrhea and bloody diarrhea. *Campylobacter* infection is diagnosed when a culture of a stool specimen yields the bacterium.

How can campylobacteriosis be treated?

Almost all persons infected with *Campylobacter* recover without any specific treatment. Patients should drink extra fluids as long as the diarrhea lasts. Antimicrobial therapy is warranted only for patients with severe disease or those at high risk for severe disease, such as those with immune systems severely weakened from medications or other illnesses. Azithromycin and fluoroquinolones (e.g., ciprofloxacin) are commonly used for treatment of these infections, but resistance to fluoroquinolones is common. Antimicrobial susceptibility testing can help guide appropriate therapy.

Are there long-term consequences?

Most people who get campylobacteriosis recover completely within two to five days, although sometimes recovery can take up to 10 days. Rarely, *Campylobacter* infection results in long-term consequences. Some people develop arthritis. Others may develop a rare disease called Guillain-Barré syndrome that affects the nerves of the body beginning several weeks after the diarrheal illness. This occurs when a person's immune system is "triggered" to attack the body's own nerves resulting in paralysis. The paralysis usually lasts several weeks and requires intensive medical care. It is estimated that approximately one in every 1,000 reported *Campylobacter* illnesses leads to Guillain-Barré syndrome. As many as 40% of Guillain-Barré syndrome cases in this country may be triggered by campylobacteriosis.

How do people get infected with this germ?

Campylobacteriosis usually occurs in single, sporadic cases, but it can also occur in outbreaks, when two or more people become ill from the same source. Most cases of campylobacteriosis are associated with eating raw or undercooked poultry meat or from cross-contamination of other foods by these items. Outbreaks of *Campylobacter* have most often been associated with unpasteurized dairy products, contaminated water, poultry, and produce. Animals can also be infected, and some people get infected from contact with the stool of an ill dog or cat. The organism is not usually spread from one person to another, but this can happen if the infected person is producing a large volume of diarrhea.

It only takes a very few *Campylobacter* organisms (fewer than 500) to make a person sick. Even one drop of juice from raw chicken meat can have enough *Campylobacter* in it to infect a person! One way to become infected is to cut poultry meat on a cutting board, and then use the unwashed cutting board or utensil to prepare vegetables or other raw or lightly cooked foods. The *Campylobacter* organisms from the raw meat can get onto the other foods.

How does food or water get contaminated with *Campylobacter*?

Many chicken flocks are infected with *Campylobacter* but show no signs of illness. *Campylobacter* can be easily spread from bird to bird through a common water source or through contact with infected feces. When an infected bird is slaughtered, *Campylobacter* organisms can be transferred from the intestines to the meat. In 2011, *Campylobacter* was found on 47% of raw chicken samples bought in grocery stores and tested through the National Antimicrobial Resistance Monitoring System (NARMS). *Campylobacter* can also be present in the giblets, especially the liver.

Unpasteurized milk can become contaminated if the cow has an infection with *Campylobacter* in her udder or if the milk is contaminated with manure. Surface water and mountain streams can become contaminated from infected feces from cows or wild birds. *Campylobacter* is common in the developing world, and travelers to foreign countries are at risk for becoming infected with *Campylobacter*. Approximately one-fifth (19%) of *Campylobacter* cases identified in FoodNet are associated with international travel.

What can be done to prevent *Campylobacter* infection?

Some simple food handling practices can help prevent *Campylobacter* infections.

- Cook all poultry products thoroughly. Make sure that the meat is cooked throughout (no longer pink) and any juices run clear. All poultry should be cooked to reach a minimum internal temperature of 165 °F.
- If you are served undercooked poultry in a restaurant, send it back for further cooking.
- Wash hands with soap before preparing food
- Wash hands with soap after handling raw foods of animal origin and before touching anything else.
- Prevent cross-contamination in the kitchen by using separate cutting boards for foods of animal origin and other foods and by thoroughly cleaning all cutting boards, countertops, and utensils with soap and hot water after preparing raw food of animal origin.
- Do not drink unpasteurized milk or untreated surface water.
- Make sure that persons with diarrhea, especially children, wash their hands carefully and frequently with soap to reduce the risk of spreading the infection.
- Wash hands with soap after contact with pet feces.

Physicians who diagnose campylobacteriosis and clinical laboratories that identify this organism should report their findings to the local health department. If many cases occur at the same time, it may mean that an outbreak has occurred in which many people were exposed to a common contaminated food item or water source. If this food or water is still available, more people could get infected. Public health departments investigate outbreaks to identify the source so that action can be taken to prevent more cases.



Chancroid

What is chancroid?

Chancroid is a highly contagious yet curable sexually transmitted disease (STD) caused by the bacteria *Haemophilus ducreyi* [hum-AH-fill-us DOO-cray]. Chancroid causes ulcers, usually of the genitals. Swollen, painful lymph glands, or inguinal buboes [in-GWEEN-al BEW-boes], in the groin area are often associated with chancroid. Left untreated, chancroid may facilitate the transmission of HIV.

How common is it?

The prevalence of chancroid has declined in the United States. When infection does occur, it is usually associated with sporadic outbreaks. Worldwide, chancroid appears to have declined as well, although infection might still occur in some regions of Africa and the Caribbean. Chancroid, as well as genital herpes and syphilis, is a risk factor in the transmission of HIV infection.

A definitive diagnosis of chancroid requires the identification of *H. ducreyi* on special culture media that is not widely available from commercial sources; even when these media are used, sensitivity is less than 80 percent. No FDA-cleared PCR test for *H. ducreyi* is available in the United States, but such testing can be performed by clinical laboratories that have developed their own PCR test and have conducted a CLIA verification study.

The combination of a painful genital ulcer and tender suppurative inguinal adenopathy suggests the diagnosis of chancroid. A probable diagnosis of chancroid, for both clinical and surveillance purposes, can be made if all of the following criteria are met: 1) the patient has one or more painful genital ulcers; 2) the patient has no evidence of *T. pallidum* infection by darkfield examination of ulcer exudate or by a serologic test for syphilis performed at least seven days after onset of ulcers; 3) the clinical presentation, appearance of genital ulcers and, if present, regional lymphadenopathy

are typical for chancroid; and 4) a test for HSV performed on the ulcer exudate is negative.

How do people get chancroid?

Chancroid is transmitted in two ways:

- *sexual transmission* through skin-to-skin contact with open sore(s).
- *non-sexual transmission* when pus-like fluid from the ulcer is moved to other parts of the body or to another person.

A person is considered to be infectious when ulcers are present. There has been no reported disease in infants born to women with active chancroid at time of delivery.

What are the signs or symptoms of chancroid?

- Symptoms usually occur within four days to ten days from exposure. They rarely develop earlier than three days or later than ten days.
- The ulcer begins as a tender, elevated bump, or papule, that becomes a pus-filled, open sore with eroded or ragged edges.
- The ulcer is soft to the touch (unlike a syphilis chancre that is hard or rubbery). The term soft chancre is frequently used to describe the chancroid sore.
- The ulcers can be very painful in men but women are often unaware of them.
- Because chancroid is often asymptomatic in women, they may be unaware of the lesion(s).
- Painful lymph glands may occur in the groin, usually only on one side; however, they can occur on both sides.

How is chancroid diagnosed?

Diagnosis is made by isolating the bacteria *Hemophilus ducreyi* in a culture from a genital ulcer. The chancre is often confused with syphilis, herpes or lymphogranuloma venereum; therefore, it is important that your health care provider rule these diseases out.

A Gram stain to identify *H. ducreyi* is possible but can be misleading because of other organisms found in most genital ulcers.

What is the treatment for chancroid?

Successful treatment for chancroid cures the infection, resolves the clinical symptoms, and prevents transmission to others. In advanced cases, scarring can result, despite successful therapy.

Antibiotics used to treat chancroid include; Azithromycin 1 g orally, Ceftriaxone 250 mg intramuscularly (IM), Ciprofloxacin 500 mg orally or Erythromycin 500 mg orally.

Ciprofloxacin is contraindicated for pregnant and lactating women.

Azithromycin and ceftriaxone offer the advantage of single-dose therapy. Worldwide, several isolates with intermediate resistance to either ciprofloxacin or erythromycin have been reported. However, because cultures are not routinely performed, data are limited regarding the current prevalence of antimicrobial resistance.

Follow-up

Patients should be re-examined three days to seven days after initiation of therapy. If treatment is successful, ulcers usually improve symptomatically within three days and objectively within seven days after therapy. If no clinical improvement is evident, the clinician must consider whether 1) the diagnosis is correct, 2) the patient is coinfecting with another STD, 3) the patient is infected with HIV, 4) the treatment was not used as instructed, or 5) the *H. ducreyi* strain causing the infection is resistant to the prescribed antimicrobial. The time required for complete healing depends on the size of the ulcer; large ulcers might require greater than two weeks. In addition, healing is slower for some uncircumcised men who have ulcers under the foreskin. Clinical resolution of fluctuant lymphadenopathy is slower than that of ulcers and might require needle aspiration or incision and drainage, despite otherwise successful therapy. Although needle aspiration of buboes is a simpler procedure, incision and drainage might be preferred because of reduced need for subsequent drainage procedures.

Other Management Considerations

Men who are uncircumcised and patients with HIV infection do not respond as well to treatment as persons who are circumcised or HIV-negative. Patients should be tested for HIV infection at the time chancroid is diagnosed. If the initial test results were negative, a serologic test for syphilis and HIV infection should be performed three months after the diagnosis of chancroid.

Special Considerations

Pregnancy

Ciprofloxacin is contraindicated during pregnancy and lactation. No adverse effects of chancroid on pregnancy outcome have been reported.

How can chancroid be prevented?

- Abstinence (not having sex)
- Mutual monogamy [having sex with only one uninfected partner]
- Latex condoms for vaginal, oral and anal sex. Using latex condoms may protect the penis or vagina from infection, but does not protect other areas such as the scrotum or anal area. Chancroid lesions can occur in genital areas that are covered or protected by a latex condom, but may occur in areas that are not covered or protected by a condom. Latex condoms, when used consistently and correctly, can reduce the risk of chancroid, genital herpes, syphilis, and genital warts, only when the infected areas are covered or protected by the condom.

If you do get chancroid, avoid contact with the infected area to prevent chance of spreading the infection to other parts of the body.

Why worry?

Chancroid has been well established as a cofactor for HIV transmission. Moreover, persons with HIV may experience slower healing of chancroid, even with treatment, and may need to take medications for a longer period of time. Complications from chancroid include:

- In 50 percent of cases, the lymph node glands in the groin become infected within five to eight days of appearance of initial sores.
- Glands on one side become enlarged, hard, painful and fuse together to form a bubo (BEW-bo), an inflammation and swelling of one or more lymph nodes with overlying red skin. Surgical drainage of the bubo may be necessary to relieve pain.
- Ruptured buboes are susceptible to secondary bacterial infections.
- In uncircumcised males, new scar tissue may result in phimosis [constriction so the foreskin cannot be retracted over the head of the penis]. Circumcision may be required to correct this.

What should I tell my partner?

You should talk to your partner as soon as you learn you have chancroid. Telling a partner can be hard, but it's important that you talk to your partner as soon as possible so she or he can get treatment.

How do I address the subject with my health care provider?

If you have a genital ulcer or painful, swollen lymph nodes, you need to talk to your doctor about whether or not you should be tested. However, it's important to remember that some people, usually women, are asymptomatic. If you are having unprotected sex or discover that your partner is having unprotected sex with another person, you may want to ask your doctor about being tested for STDs.

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health fact sheets



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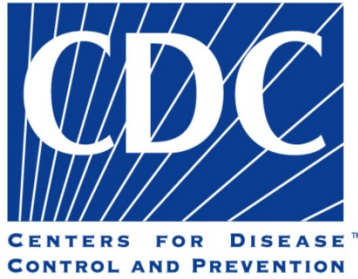
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CHICKENPOX

Chickenpox is a very contagious disease caused by the varicella-zoster virus (VZV). It causes a blister-like rash, itching, tiredness, and fever. Chickenpox can be serious, especially in babies, adults, and people with weakened immune systems. It spreads easily from infected people to others who have never had chickenpox or received the chickenpox vaccine. Chickenpox spreads in the air through coughing or sneezing. It can also be spread by touching or breathing in the virus particles that come from chickenpox blisters.

The best way to prevent chickenpox is to get the chickenpox vaccine. Before the vaccine, about 4 million people would get chickenpox each year in the United States. Also, about 10,600 people were hospitalized and 100 to 150 died each year as a result of chickenpox.

Signs and Symptoms

Anyone who hasn't had chickenpox or received the chickenpox vaccine can get the disease. Chickenpox most commonly causes an illness that lasts about 5-10 days.

The classic symptom of chickenpox is a rash that turns into itchy, fluid-filled blisters that eventually turn into scabs. The rash may first show up on the face, chest, and back then spread to the rest of the body, including inside the mouth, eyelids, or genital area. It usually takes about one week for all the blisters to become scabs.

Other typical symptoms that may begin to appear 1-2 days before rash include:

- high fever
- tiredness
- loss of appetite
- headache

Children usually miss 5 to 6 days of school or childcare due to their chickenpox. Some people who have been vaccinated against chickenpox can still get the disease. However, the symptoms are usually milder with fewer blisters and mild or no fever. About 25% to 30% of vaccinated people who get chickenpox will develop illness as serious as chickenpox in unvaccinated persons. Some people who get chickenpox may have more severe symptoms and may be at higher risk for complications.

Transmission

Chickenpox is a very contagious disease caused by the varicella-zoster virus. The virus spreads easily from people with chickenpox to others who have never had the disease or received the chickenpox vaccine. The virus spreads in the air when an infected person coughs or sneezes. It can also be spread by touching or breathing in the virus particles that come from chickenpox blisters. Chickenpox can also be spread from people with shingles.

When a person is contagious?

A person with chickenpox can spread the disease from 1 to 2 days before they get the rash until all their chickenpox blisters have formed scabs. It takes from 10 to 21 days after exposure to a person with chickenpox or shingles for someone to develop chickenpox. If a person vaccinated for chickenpox gets the disease, they can still spread it to others. For most people, getting chickenpox once provides immunity for life. However, for a few people, they can get chickenpox more than once, although this is not common.

Prevention

The best way to prevent chickenpox is to get the chickenpox vaccine. Children, adolescents, and adults should have two doses of chickenpox vaccine. Chickenpox vaccine is very safe and effective at preventing the disease. Most people who get the vaccine will not get chickenpox. If a vaccinated person does get chickenpox, it is usually mild—with fewer blisters and mild or no fever. The chickenpox vaccine prevents almost all cases of severe disease.

Vaccination

Chickenpox vaccine protects you against a very uncomfortable and sometimes serious disease. Chickenpox used to be very common in the United States. About 4 million people would get the disease each year. Also, about 10,600 people were hospitalized and 100 to 150 died each year because of chickenpox. Thankfully, chickenpox vaccine has changed all that. CDC recommends two doses of chickenpox vaccine for children, adolescents, and adults. Two doses of the vaccine are about 98% effective at preventing chickenpox. When you get vaccinated, you protect yourself and others in your community. This is especially important for people who cannot get vaccinated, such as those with weakened immune systems or pregnant women. Some people who are vaccinated against chickenpox may still get the disease. However, it is usually milder with fewer blisters and little or no fever.



Varicela (Chickenpox)

La varicela es una enfermedad muy contagiosa causada por el virus de la varicela zóster (VZV). Produce un sarpullido con ampollas, picazón, cansancio y fiebre. La varicela puede ser grave, especialmente en los bebés, los adultos y las personas con sistemas inmunitarios debilitados. Se transmite fácilmente de las personas infectadas a otras que nunca han tenido varicela o no se han vacunado. La varicela se propaga en el aire a través de la tos o los estornudos. También, se puede propagar por tocar o por respirar las partículas del virus que provienen de las ampollas que causa.

La mejor forma de prevenir la varicela es vacunándose. Antes de contar con la vacuna, unos 4 millones de personas contraían varicela cada año en los Estados Unidos. Además, alrededor de 10,600 personas eran hospitalizadas y de 100 a 150 morían por causa de esta enfermedad

Signos y síntomas

Cualquier persona que no haya tenido varicela o no se haya vacunado puede contraer esta enfermedad. La varicela, por lo general, causa una enfermedad que dura entre 5 y 10 días.

El síntoma clásico de la varicela es un sarpullido que produce picazón y ampollas llenas de líquido que al final se vuelven costras. El sarpullido puede aparecer primero en la cara, el pecho y la espalda, y extenderse después al resto del cuerpo, incluido el interior de la boca, los párpados, o el área genital. Por lo general, toma una semana para que todas las ampollas se vuelvan costras.

Otros síntomas típicos que pueden comenzar a manifestarse 1 o 2 días antes del sarpullido incluyen:

- Fiebre alta
- Cansancio
- Pérdida del apetito
- Dolor de cabeza

Los niños por lo general pierden 5 a 6 días de escuela o guardería debido a la varicela. Algunas personas que se han vacunado contra la varicela también pueden enfermarse. Sin embargo, los síntomas generalmente son leves, con menos ampollas y con poco o nada de fiebre. Alrededor del 25% al 30% de las personas vacunadas que contraigan varicela padecerán enfermedad de la misma gravedad como la que afecta a las que no se vacunaron. Algunas personas que contraen varicela pueden presentar síntomas más graves y tener mayor riesgo de complicaciones.

Transmisión

La varicela es una enfermedad muy contagiosa causada por el virus de la varicela zóster. Este virus se transmite fácilmente de personas infectadas a otras que nunca han tenido varicela o no se han vacunado. También se propaga en el aire cuando una persona infectada tose o estornuda. Además, se puede propagar por tocar o por respirar las partículas del virus que provienen de las ampollas de la varicela.

La varicela también la pueden propagar personas con culebrilla. El virus de la varicela zóster también causa culebrilla. Una persona con culebrilla puede transmitirles el virus a otras que nunca han tenido varicela o no se han vacunado contra esta enfermedad. En estos casos, la persona expuesta puede contraer varicela.

Cuándo es contagiosa una persona?

Una persona con varicela puede transmitir la enfermedad desde 1 a 2 días antes de que le brote el sarpullido hasta que todas las ampollas de la varicela hayan formado costras.

Pueden pasar de 10 a 21 días después de la exposición a un enfermo con varicela o culebrilla, antes de que la persona expuesta presente la varicela.

Si una persona vacunada contra la varicela contrae esta enfermedad, también se la puede transmitir a otros.

La mayoría de las personas que contraen varicela una vez, quedan inmunes de por vida. Sin embargo, algunas personas pueden enfermarse de varicela más de una vez, aunque esto es poco común.

Prevención

La mejor forma de prevenir la varicela es vacunándose. Los niños, los adolescentes y los adultos deben recibir dos dosis de la vacuna contra la varicela.

La vacuna contra la varicela es muy segura y eficaz para prevenir la enfermedad. La mayoría de las personas que reciben la vacuna no contraerán varicela. Si una persona vacunada contrae varicela, por lo general es leve, con menos ampollas y poco o nada de fiebre. La vacuna previene casi todos los casos graves de la enfermedad.

Vacunación

La Vacuna contra la varicela lo protege a usted contra una enfermedad muy incómoda y a veces muy grave. Varicela solía ser muy común en los Estados Unidos. El CDC recomienda dos dosis de vacuna contra la varicela para los niños, adolescentes y adultos. Cuando se tienen dos dosis de la vacuna de la varicela, esta es 98% eficaz en la prevención de la varicela. Cuando usted obtiene la vacuna, se protege usted y las demás personas en su comunidad. Esto es especialmente importante para las personas que no pueden vacunarse, como aquellas personas que tienen el sistema inmunológico débil o mujeres embarazadas.

Algunas personas que son vacunadas contra la varicela, tienen la posibilidad contraer la enfermedad. Sin embargo, esta es generalmente más leve, presenta menos ampollas y poca o ninguna fiebre.



Chlamydia

What is chlamydia?

Chlamydia is a common sexually transmitted disease (STD) caused by infection with *Chlamydia trachomatis*. It can cause cervicitis in women and urethritis and proctitis in both men and women. Chlamydial infections in women can lead to serious consequences including pelvic inflammatory disease (PID), tubal factor infertility, ectopic pregnancy, and chronic pelvic pain. Lymphogranuloma venereum (LGV), another type of STD caused by different serovars of the same bacterium, occurs commonly in the developing world, and has more recently emerged as a cause of outbreaks of proctitis among men who have sex with men (MSM) worldwide.

How common is chlamydia?

Chlamydia is the most frequently reported bacterial sexually transmitted infection in the United States. In 2010, 1.4 million cases of chlamydia were reported to the U.S.CDC from 50 states and the District of Columbia, but an estimated 2.86 million infections occur annually. A large number of cases are not reported because most people with chlamydia do not have symptoms and do not seek testing. Chlamydia is most common among young people. It is estimated that one in 15 sexually active females aged 14-19 years has chlamydia.

How do people get chlamydia?

People get chlamydia by having sex (anal, vaginal or oral) with someone who has the infection. Chlamydia can still be transmitted even if a man does not ejaculate. People who have had chlamydia and have been treated can get infected again if they have sex with an infected person.

Chlamydia can be spread from an infected woman to her baby during childbirth.

Who is at risk for chlamydia?

Any sexually active person can be infected with chlamydia. Anyone with genital symptoms such as discharge, burning during urination, unusual sores, or rash should refrain from having sex until they are able to see a health care provider about their symptoms.

Also, anyone with an oral, anal or vaginal sex partner who has been recently diagnosed with an STD should see a health care provider for evaluation.

Because chlamydia is usually asymptomatic, screening is necessary to identify most infections. Screening programs have been demonstrated to reduce rates of adverse sequelae in women. CDC recommends yearly chlamydia screening of all sexually active women age 25 or younger and older women with risk factors for chlamydial infections (e.g., women who have a new or more than one sex partner). Pregnant women should be screened during their first prenatal care visit. Pregnant women younger than 25 or at increased risk for chlamydia (e.g., women who have a new or more than one sex partner) should be screened again in their third trimester. Any woman who is sexually active should discuss her risk factors with a health care provider who can then determine if more frequent screening is necessary.

Routine screening is not recommended for men. However, the screening of sexually active young men should be considered in clinical settings with a high prevalence of chlamydia (e.g., adolescent clinics, correctional facilities, and STD clinics) when resources permit and do not hinder screening efforts in women.

Men who have sex with men (MSM) who have receptive anal sex should be screened for chlamydia each year. MSM who have multiple and/or anonymous sex partners should be screened more frequently (e.g., at three to six month intervals).

HIV-infected sexually active women who are age 25 or younger or have other risk factors, and all HIV-infected patients who report having receptive anal sex should be screened for chlamydia at their first HIV care visit and then at least annually. A patient's health care provider might determine more frequent screening is necessary, based on the patient's risk factors.

What are the symptoms?

Chlamydia is known as a "silent" infection because most infected people have no symptoms. If symptoms do occur, they may not appear until several weeks after exposure. Even when it causes no symptoms, chlamydia can damage a woman's reproductive organs.

In women, the bacteria first infect the cervix (structure that connects the vagina or birth canal to the uterus or womb) and/or the urethra (urine canal). Some infected women have an abnormal vaginal discharge or a burning sensation when urinating. Untreated infections can spread upward to the uterus and fallopian tubes (tubes that carry fertilized eggs from the ovaries to the uterus), causing pelvic inflammatory disease (PID). PID can be silent, or can cause symptoms such as abdominal and pelvic pain. Even if PID causes no symptoms initially, it can lead to infertility (not being able to get pregnant) and other complications later on.

Some infected men have discharge from their penis or a burning sensation when urinating. Pain and swelling in one or both testicles (known as “epididymitis”) may occur, but is less common.

Chlamydia can infect the rectum in men and women, either through receptive anal sex, or possibly via spread from the cervix and vagina. While these infections often cause no symptoms, they can cause rectal pain, discharge, and/or bleeding (known as “proctitis”).

What kinds of complications can the infection cause?

The initial damage that chlamydia causes often goes unnoticed. However, chlamydial infections can lead to serious health problems.

In women, untreated infection can spread upward to the uterus and fallopian tubes (tubes that carry fertilized eggs from the ovaries to the uterus), causing pelvic inflammatory disease (PID). PID can be silent, or can cause symptoms such as abdominal and pelvic pain. Both symptomatic and silent PID can cause permanent damage to a woman’s reproductive tract and lead to long-term pelvic pain, inability to get pregnant and potentially deadly ectopic pregnancy (pregnancy outside the uterus).

Complications are rare in men. Infection sometimes spreads to the tube that carries sperm from the testis, causing pain, fever, but, rarely, preventing a man from being able to father children.

How does chlamydia affect a pregnant woman and her baby?

In pregnant women, untreated chlamydia has been associated with pre-term delivery, and can spread to the newborn, causing an eye infection or pneumonia. Screening and treatment of chlamydia during pregnancy is the best way to prevent these complications. All pregnant women should be screened for chlamydia at their first prenatal visit.

How is chlamydia diagnosed?

There are laboratory tests to diagnose chlamydia. Specimens commonly used for testing include a cotton swab of the vagina (collected by the woman herself or her health care provider) or a urine sample.

How is chlamydia treated?

Penicillin is not effective against chlamydia.

Chlamydia can be easily treated and cured with antibiotics. HIV-positive persons with chlamydia should receive the same treatment as those who are HIV-negative.

Persons with chlamydia should abstain from having sex for seven days after single dose antibiotics, or until completion of a seven-day course of antibiotics, to prevent spreading the infection to partners.

Repeat infection with chlamydia is common. Persons whose sex partners have not been appropriately treated are at high risk for re-infection. Having multiple chlamydial infections increases a woman's risk of serious reproductive health complications, including pelvic inflammatory disease and ectopic pregnancy. Women and men with chlamydia should be retested about three months after treatment of an initial infection, regardless of whether they believe that their sex partners were successfully treated.

Infants infected with chlamydia may develop conjunctivitis (infection of the membrane lining the eyelids) and/or pneumonia. Chlamydial infection in infants can be treated with antibiotics.

What about partners?

If a person has been diagnosed and treated for chlamydia, he or she should tell all anal, vaginal or oral sex partners from the past two months so that they can see a health care provider and be treated. This will reduce the risk that the sex partners will develop serious complications from chlamydia and will reduce the person's risk of becoming re-infected. A person with chlamydia and all of his or her sex partners must avoid having sex until they have completed their treatment for chlamydia (i.e., seven days after a single dose of antibiotics or until completion of a seven-day course of antibiotics) and until they no longer have symptoms.

To help get partners treated quickly, health care providers may give patients extra medicine or prescriptions to give to their sex partners. This is called expedited partner

therapy or EPT. EPT is only available in some parts of the country, it is available in Illinois. Consult a health care provider to find out if it is available in a specific area. Sex partners should still be encouraged to see a health care provider, regardless of whether they receive EPT.

How can chlamydia be prevented?

Not having sex is the best protection against chlamydia and other STDs. Having sex with only one uninfected partner who only has sex with you is also safe. Latex male condoms, when used consistently and correctly, can reduce the risk of getting or giving chlamydia. The surest way to avoid chlamydia is to abstain from vaginal, anal and oral sex or to be in a long-term mutually monogamous relationship with a partner who has been tested and is known to be uninfected.

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Conjunctivitis

What is conjunctivitis?

Conjunctivitis is an inflammation of the thin, clear membrane (conjunctiva) that covers the white of the eye and the inside surface of the eyelids. Conjunctivitis, commonly known as “pink eye,” is most often caused by a virus but also can be caused by bacterial infection, allergies (e.g., cosmetics, pollen) and chemical irritation.

How is it spread?

Anyone can get conjunctivitis. It can spread fairly easily from person to person, especially in dormitories, schools or other places where large numbers of persons congregate. People commonly get conjunctivitis by coming into contact with the tears or other eye discharges of an infected person, and then touching their own eyes. Hands, towels and washcloths can spread conjunctivitis. Symptoms normally appear a few days after contact with an infected person or an object contaminated with the virus (such as a towel).

Individuals with conjunctivitis may be contagious as long as symptoms persist or the eye appears abnormal. Risk of conjunctivitis increases with use of contact lenses, and touching/rubbing the eyes without handwashing first.

What are the symptoms of conjunctivitis?

Symptoms of conjunctivitis may include the following:

- Eye redness and irritation
- Sensitivity to bright light
- Itchiness or a gritty sensation in the eye
- Swollen eyelids
- Tearing and discharge (Discharge may make the eyelids and eyelashes stick together or have crusty debris, especially in the morning.)

Viral conjunctivitis often begins with fairly sudden onset of pain or the feeling of dust in the eye. Infection may begin in only one eye but often spreads to involve both.

Should I contact a doctor if I develop symptoms of conjunctivitis?

You should contact your health care provider –

- if you have symptoms of conjunctivitis and they do not improve in 24-48 hours;
- if you have conjunctivitis and wear contact lenses;
- if you have vision problems or significant eye pain; or
- if you develop fever.

Other concerns, including the duration of your conjunctivitis symptoms, whether or not your symptoms are improving as expected, etc., should also be shared with your health care provider.

How is conjunctivitis treated?

Treatment varies with the cause. There is no curative treatment for common viral conjunctivitis; it usually will go away by itself in one to six weeks. Lubricating eye drops sometimes help to ease symptoms. (Do not share these eye drops with other persons.) If symptoms last for more than 24-48 hours, or vision is affected, it is important to be seen by a health care practitioner. Other kinds of conjunctivitis often have specific treatments that may be prescribed.

A person with conjunctivitis should follow these general guidelines:

- If medication has been prescribed, use exactly as directed for the full course of treatment. (All treatments used for conjunctivitis should be thrown away when no longer needed.)
- Be sure to wash hands with soap and water before and after using eye medication.
- Wash hands frequently during waking hours with soap and water (15 seconds), and use paper towels or blow dry.
- Avoid touching your eyes. Gently wipe discharge from the eye using disposable tissues.
- Use warm or cool water compresses to reduce discomfort.
- Do not use eye makeup. Discard eye makeup if used when conjunctivitis was present because organisms may remain in makeup and cause a reoccurrence.

Should contact lens wearers take special precautions?

- Disinfect lenses, also clean and disinfect storage case.
- Do not use eye drops or ointment with the lens in place.
- Do not wear contact lenses until eyes are entirely clear of conjunctivitis.
- If using disposable lenses, discard; after infection clears, use new lenses.

Can conjunctivitis be prevented?

Conjunctivitis can be prevented by practicing good hygiene.

- Wash hands frequently with soap and water.
- Use clean paper towels to dry hands.
- Avoid touching the hands of others or rubbing the eyes.
- Avoid exposure to eye irritants such as perfumes and smoke.
- Throw away machine wash towels, tissues and other items that touch the eyes **after each use**.
- Avoid sharing towels and wash cloths.
- Avoid sharing eye drops, eye makeup, contact lens solution, tissues and other items used on the face.

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Crabs

What are crabs?

Crabs are parasites. Crabs are often referred to as pubic lice and are not to be confused with body lice. The scientific name for crabs is **Pediculus pubis**. Crabs need blood to survive, but they can live up to 24 hours off a human body. Crabs have three very distinct phases; egg, nit (egg or young louse), and adult louse. The louse is the stage of the parasite that causes itching. Louse is the singular for lice (like mouse and mice).

How common are they?

In the United States, there are an estimated 3 million cases of crabs every year.

How do people get crabs?

Sexual transmission - You can get crabs when you have skin-to-skin contact with another person. Even when there is no sexual penetration, you can get (or give) crabs.

Non-sexual transmission - You can get crabs from sleeping in an infested bed or using infested towels.

Pubic lice found on children may be a sign of sexual exposure or abuse.

Animals do not get or spread lice.

What are the signs or symptoms of crabs?

- The most common symptom of crabs is itching in your pubic area. The itching is caused by an allergic reaction to the bites, and usually starts about five days after you get crabs.
- If you have crabs and look closely enough in your pubic area, you may see small crab-like parasites that may be whitish-gray or rust colored.

- Crab eggs are small and oval-shaped. They are attached to the base of the hair (close to where it comes out of your body).
- Crabs are usually found in your pubic area; however, you may find them in your armpits, eyelashes, beard/mustache and sometimes in the hair on your head.

How are crabs diagnosed?

You can usually see the crabs yourself if you look closely enough. The adult pubic louse resembles a miniature crab which has six legs, but their two front legs are very large and look like the pincher claws of a crab; this is how they got the nickname “crabs.” You might need a magnifying glass to help you identify them. If you are uncertain, have a health care provider examine you. He or she may need to use a microscope.

What is the treatment for crabs?

A lice-killing lotion containing 1 percent permethrin or a mousse containing pyrethrins and piperonyl butoxide can be used to treat pubic ("crab") lice. These products are available over-the-counter without a prescription at a local drug store or pharmacy. These medications are safe and effective when used exactly according to the instructions in the package or on the label.

Lindane shampoo is a prescription medication that can kill lice and lice eggs. However, lindane is not recommended as a first-line therapy. Lindane can be toxic to the brain and other parts of the nervous system; its use should be restricted to patients who have failed treatment with or cannot tolerate other medications that pose less risk. **Lindane should not be used to treat premature infants, persons with a seizure disorder, women who are pregnant or breast-feeding, persons who have very irritated skin or sores where the lindane will be applied, infants, children, the elderly, and persons who weigh less than 110 pounds.**

Malathion* lotion 0.5 percent (Ovide*) is a prescription medication that can kill lice and some lice eggs; however, malathion lotion (Ovide*) currently has not been approved by the U.S. Food and Drug Administration (FDA) for treatment of pubic ("crab") lice.

Ivermectin has been used successfully to treat lice; however, ivermectin currently has not been approved by the U.S. Food and Drug Administration (FDA) for treatment of lice.

How to treat pubic lice infestations: (Warning: See special instructions for treatment of lice and nits on eyebrows or eyelashes. The lice medications described in this section should not be used near the eyes.)

1. Wash the infested area; towel dry.
2. Carefully follow the instructions in the package or on the label. Thoroughly saturate the pubic hair and other infested areas with lice medication. Leave medication on hair for the time recommended in the instructions. After waiting the recommended time, remove the medication by following carefully the instructions on the label or in the box.
3. Following treatment, most nits will still be attached to hair shafts. Nits may be removed with fingernails or by using a fine-toothed comb.
4. Put on clean underwear and clothing after treatment.
5. **To kill any lice or nits remaining on clothing, towels or bedding, machine wash and machine dry those items that the infested person used during the two to three days before treatment. Use hot water (at least 130 degrees F) and the hot dryer cycle.**
6. Items that cannot be laundered can be dry-cleaned or stored in a sealed plastic bag for two weeks.
7. All sex partners from within the previous month should be informed that they are at risk for infestation and should be treated.
8. Persons should avoid sexual contact with their sex partner(s) until both they and their partners have been successfully treated and re-evaluated to rule out persistent infestation.
9. Repeat treatment in nine to ten days if live lice are still found.
10. Persons with pubic lice should be evaluated for other sexually transmitted diseases.

Special instructions for treatment of lice and nits found on eyebrows or eyelashes:

- If only a few live lice and nits are present, it may be possible to remove these with fingernails or a nit comb.
- If additional treatment is needed for lice or nits on the eyelashes, careful application of ophthalmic-grade petrolatum ointment (only available by prescription) to the eyelid margins two to four times a day for 10 days is effective. Regular petrolatum (e.g., Vaseline)* should not be used because it can irritate the eyes if applied.

After you are cured, you may still have some itching as a result of a skin irritation or allergic reaction. If so, you can use hydrocortisone cream. Clothes and other items that

cannot be washed can be placed in a plastic bag for two weeks. Repeat treatment in seven to ten days if lice are still found.

How can crabs be prevented?

Pubic ("crab") lice most commonly are spread directly from person to person by sexual contact. Pubic lice very rarely may be spread by clothing, bedding or a toilet seat.

- Abstinence (not having sex).
- Mutual monogamy (having sex with only one uninfected partner).
- Limit the number of sex partners to reduce your risk of all STDs.
- Use latex condoms for all types of sexual penetration (oral, vaginal, anal). **Note: Latex condoms, when used consistently and correctly, can reduce the risk of transmission of other STDs, but are not considered effective against crabs.**
- Know your partner(s). Careful consideration and open communication between partners may protect all partners involved from infection.
- Have regular check-ups if you are sexually active.
- If you have an STD, don't have sex (oral, vaginal, or anal) until all partners have been treated.
- Machine wash and dry clothing worn and bedding used by the infested person in the hot water (at least 130°F) laundry cycle and the high heat drying cycle. Clothing and items that are not washable can be dry-cleaned OR sealed in a plastic bag and stored for 2 weeks.
- Do not share clothing, bedding, and towels used by an infested person.
- Do not use fumigant sprays or fogs; they are not necessary to control pubic ("crab") lice and can be toxic if inhaled or absorbed through the skin.
- Prompt, qualified, and appropriate medical intervention and treatment and follow-up are important steps in breaking the disease cycle.

Why should I worry about having crabs?

You may get a secondary infection as a result of scratching.

Should I tell my partner?

Yes. Telling a partner can be hard. It's important that you talk to your partner as soon as possible so she or he can get treatment. Also, it is possible to pass crabs back and forth. If you get treated and your partner does not, you may get infected again. You will need to wash all clothes, sheets and towels in hot water (at least 130-degrees F).

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CRYPTOSPORIDIOSIS IN IMMUNOCOMPROMISED PERSONS

What is cryptosporidiosis?

Cryptosporidiosis is a disease caused by an intestinal parasite. Watery diarrhea and often abdominal cramping are the major symptoms. Other symptoms include nausea, vomiting, fatigue, weight loss and low-grade fever. In some patients, symptoms will come and go and in other patients they will be persistent. Symptoms usually occur about a week after exposure, but can begin as soon as one day or as late as 12 days after exposure.

How do you get cryptosporidiosis?

The parasite *Cryptosporidium parvum* is found in the feces of infected animals and people. Persons, dogs and cats become infected when they swallow this parasite. This is one reason why hands should be washed after contact with pets. Hands also should be washed after changing a child's diaper and after using the toilet. Other activities that bring a person in contact with feces of another person can result in exposure. The parasite, which can be present in sewage or runoff from feed lots, can contaminate water sources, and several large waterborne outbreaks have occurred. Outbreaks also have occurred in child day care centers. In Illinois, 75-100 cases of cryptosporidiosis are reported annually.

How serious is cryptosporidiosis?

Symptoms can last for up to 30 days in persons who are otherwise healthy. In persons with weakened immune systems, including people with HIV/AIDS and cancer, transplant patients taking immunosuppressive drugs and people with genetically weakened immune systems, symptoms can persist indefinitely. Persistent diarrhea due to cryptosporidiosis in these persons can lead to death.

How is cryptosporidiosis diagnosed?

The patient's physician can order a special test to detect the presence of *Cryptosporidium* in a stool specimen. Routine stool examinations will not detect this parasite.

How is cryptosporidiosis treated?

There is no effective cure for cryptosporidiosis. Persons with this disease should drink plenty of fluids and get extra rest. Physicians may prescribe medication to slow the diarrhea during recovery.

What should I do to protect myself against cryptosporidiosis?

- Wash hands after handling pets or other animals.
- Wash hands after handling items that might be contaminated with the feces of other persons.
- Wash hands before preparing or handling food.
- Wash hands after gardening or other contact with soil.
- Wash produce thoroughly before eating.
- Avoid unpasteurized milk or milk products.
- Avoid exposure to calves and lambs and places where these animals are raised.
- Avoid sexual contact with other persons that involves exposure to their feces. Follow "safer sex" guidelines.
- Avoid drinking water directly from rivers, lakes and streams.

What is the correct way to wash hands?

- Use a running stream of warm water.
- Lather hands vigorously with soap for at least 15 seconds.
- Rinse hands under running warm water so that the water flows from the wrist to the fingertips.
- Dry hands.
- If in a public place, turn off water faucet with a disposable paper towel after drying hands.

Are public water supplies free of *Cryptosporidium*?

Not necessarily. *Cryptosporidium* is common in the lakes and rivers that many public water supplies use. It is highly resistant to disinfection and even well-operated water treatment systems cannot ensure that drinking water will be completely free of *Cryptosporidium*.

Should I drink water from the public water supply?

If an outbreak of waterborne cryptosporidiosis is occurring in your community, boil water before drinking, drink bottled water, or drink water that has passed through a special filter. These protective measures must be used consistently in order to protect against infection.

It is not known whether severely immunocompromised persons are at increased risk

if no waterborne outbreak of cryptosporidiosis is occurring in their communities. The risk is likely to vary from city to city, depending on the quality of the city's water source and the quality of water treatment. Current data do not support a recommendation that severely immunocompromised persons in all U.S. cities boil or avoid drinking tap water. Immunocompromised persons should consult with their physicians about what measures are best for them.

What are my choices if my doctor advises me not to drink regular tap water?

- Boil water before drinking or before using it for cooking by bringing it to a rolling boil for five minutes.
- Use a "point-of-use" (personal use, end-of-tap, under sink) filter. Only point-of-use filters that remove particles one micrometer or less in diameter should be considered. Filters in this category that provide the greatest assurance of *Cryptosporidium* removal include those that use reverse osmosis, those labeled as "absolute" one micrometer filters, or those certified by NSF (National Sanitation Foundation) International under Standard 53 for "cyst removal." The "nominal" one micrometer filter rating is not standardized and many filters in this category may not reliably remove *Cryptosporidium*. As with all filters, people should follow the manufacturer's instructions for filter use and replacement. ("Point-of-use" filters meeting the above criteria may not necessarily remove organisms other than *Cryptosporidium* that could pose a health hazard for severely immunocompromised individuals.)
- Use bottled water. Water sources (wells, springs, municipal tap water) and bottled water treatment processes vary considerably. Therefore, individuals should not presume that all bottled waters are absolutely free of *Cryptosporidium*. Bottled waters derived from protected well and spring water sources are less likely to be contaminated by *Cryptosporidium* than bottled municipal drinking water because municipal drinking water is typically derived from less protected sources, such as rivers and lakes. Cryptosporidiosis has been acquired from contaminated well water, but water treated by distillation or reverse osmosis before bottling assures *Cryptosporidium* removal. Water passed through a filter that meets the above criteria for a "point-of-use" device before bottling will provide nearly the same level of *Cryptosporidium* removal as distillation or reverse osmosis. Bottled waters meeting the above criteria may not necessarily be free of organisms other than *Cryptosporidium* that could pose a health hazard for severely immunocompromised individuals.

To obtain a list of filters that meet NSF criteria, write to NSF International, 3475 Plymouth Road, P.O. Box 130140, 789 N. Dixboro Road, Ann Arbor, MI 48113-0140. Individuals who contact bottlers or filter manufacturers for information should request data supporting claims that a brand of bottled water or filter can meet the above criteria.

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Escherichia coli O157:H7

What is *Escherichia coli* ?

E. coli O157:H7, one of hundreds of strains of the bacterium *Escherichia coli*, is an emerging cause of foodborne illness. While most strains are harmless and live in the intestines of healthy humans and animals, this particular strain produces a powerful toxin that can cause severe illness. It was first identified as a cause of illness in 1982 during an outbreak of severe bloody diarrhea traced to contaminated hamburgers. (The combination of letters and numbers refers to specific markers found on the bacterium's surface that distinguish it from other *E. coli*, which have other O and H markers.)

How common is the infection?

No good national data are available because many laboratories do not routinely test for the organism. Data from one laboratory that does regularly test for *E. coli* O157:H7 suggest that an estimated 20,000 cases may occur in the United States annually. In some parts of the U.S., particularly the northernmost states, this infection is not rare. It may well be a global problem. Now common in Canada, the infection is being increasingly recognized in Europe, South Africa, the southern regions of South America, Australia and Japan.

In Illinois, 100-200 cases of *E. coli* O157:H7 are reported each year.

What sort of illness does it cause?

Many persons infected with the bacterium develop severe diarrhea and painful abdominal cramps, although some people show few or no symptoms. The diarrhea can be very bloody. Because there is usually little or no fever, a person may think some other condition is causing the bowel to bleed, and this infection may go unrecognized. The illness usually resolves in five to 10 days.

In some persons, particularly children younger than 5 years of age and the elderly, the infection can lead to destruction of red blood cells (hemolytic anemia) and acute kidney failure (also known as uremia). This complication, hemolytic uremic syndrome (HUS), can lead to stroke, seizures and death. About 2 percent to 7 percent of infections lead to HUS. In the United States, *E. coli* O157:H7 infection is the primary cause of HUS, which is the principal cause of acute kidney failure in children. Most children with HUS are hospitalized for about two weeks.

How is *E. coli* diagnosed?

There are many causes of bloody diarrhea and abdominal cramps. Specific laboratory tests can identify *E. coli* O157:H7 in the stool of an infected person. However, these tests often are not performed unless the laboratory is instructed to do them.

How is *E. coli* treated?

Most persons recover without antibiotics or other specific treatment in five to 10 days. Antidiarrheal agents, such as loperamide (Imodium®), should be avoided.

HUS, a life-threatening condition that is usually treated in an intensive care unit, often requires blood transfusions and kidney dialysis. With intensive care, the fatality rate for HUS is 3 percent to 5 percent.

Are there any long-term consequences?

Persons with diarrhea alone usually recover completely, although it may be several months before bowel habits are entirely normal.

Among those who develop HUS, about 8 percent have a poor outcome, such as chronic kidney failure, high blood pressure, stroke, paralysis, bowel resection, blindness or seizures. A decline in kidney function may appear years later in about one-third of those persons who have had HUS. Thus, this infection may be a preventable cause of chronic kidney failure.

How is *E. coli* O157:H7 spread?

Most cases of *E. coli* O157:H7 infection come from undercooked ground beef. Beef that is still pink, or has blood-tinged juices, has not been cooked enough to kill *E. coli* O157:H7. While the number of organisms required to cause disease is not known, it is suspected to be very small. **Contaminated meat looks and smells normal.** The infection also can result from drinking raw unpasteurized milk or drinking or swimming in sewage-contaminated water.

The bacterium is present in the stools of infected persons, and it can be passed from one person to another if hygiene and hand washing habits are inadequate. This is particularly likely to occur among toddlers who are not fully toilet trained. Family members and playmates of such children are at high risk of becoming infected. Bacteria are usually cleared from the stools within a week after the diarrhea resolves. However, in some cases, particularly in young children, the organism may persist in the stool for weeks after the diarrhea has resolved.

How does food become contaminated?

The organism can be found on a small number of cattle farms, where it can live in the intestines of healthy cattle. When the animal is slaughtered, the meat may be contaminated by intestinal contents. When this meat is ground, fecal organisms that were on the outside of the meat are then thoroughly mixed throughout the ground beef. These bacteria can survive **unless the meat is thoroughly cooked.**

Bacteria present on a cow's udders or on equipment may get into and contaminate raw milk.

What can the consumer do to prevent this illness?

- Since hamburger and ground beef may be contaminated with this bacterium, **thorough cooking is essential to prevent** illness. This applies to hamburger prepared at home and hamburger served in restaurants. Hamburgers should be brown or gray on the inside, with clear juices (if any), and the inside should be hot. For advice on how to cook hamburger safely, call the U.S.D.A. Meat and Poultry Hotline, 800-535-4555 (voice and TTY), or your county extension home economist.
- Raw unpasteurized milk can transmit many diseases, including *E. coli* O157:H7 infection, even if it is obtained from healthy cattle. Consume only pasteurized milk and pasteurized milk products.
- When someone develops *E. coli* O157:H7 infection, careful hand washing with soap and warm water will reduce the risk of spreading it. Frequent supervised hand washing with soap and warm water is particularly important if the patient is a young child. If feasible, young children with *E. coli* O157:H7 infection who are still in diapers should not be in contact with uninfected children.
- Treatment of municipal water supplies with adequate levels of chlorine or other effective disinfectants is critical to guard against chance contamination of water when pipes leak or repairs are made.

What else can be done to prevent the infection?

E. coli O157:H7 will continue to be an important public health concern as long as it contaminates meat. It is conceivable that cattle could be vaccinated against the infection, but research into such prevention measures is just beginning.

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Fifth Disease

Fifth disease is a mild rash illness caused by parvovirus B19. This disease is also called erythema infectiosum. It is more common in children than adults. A person usually gets sick within 4 to 14 days (sometimes up to 20 days) after getting infected with parvovirus B19. About 20% of children and adults who get infected with this virus will not have any symptoms.

Signs & Symptoms

The first symptoms of fifth disease are usually mild and nonspecific. The first symptoms of fifth disease are usually

- fever,
- runny nose, and
- headache.

Then, you can get a rash on your face and body. After several days, you may get a red rash on your face. This is called "slapped cheek" rash. This rash is the most recognized feature of fifth disease. It is more common in children than adults. Some people may get a second rash a few days later on their chest, back, buttocks, or arms and legs. The rash may be itchy, especially on the soles of the feet. The rash can vary in intensity and may come and go for several weeks. It usually goes away in 7 to 10 days, but it can last several weeks. As the rash starts to go away, it may look lacy.

You may also have painful or swollen joints

People with fifth disease can also develop pain and swelling in their joints (polyarthropathy syndrome). This is more common in adults, especially women. Some adults with fifth disease may only have painful joints, usually in the hands, feet, or knees, but no other symptoms. The joint pain usually lasts 1 to 3 weeks, but it can last for months or longer. It usually goes away without any long-term problems.

Transmission

People with fifth disease are most contagious before they get rash or joint pain and swelling. Parvovirus B19 spreads through respiratory secretions (such as saliva, sputum, or nasal mucus) when an infected person coughs or sneezes. You are most contagious when it seems like you have "just a cold" and before you get the rash or joint pain and swelling. After you get the rash, you are probably not contagious. So, it is usually safe for you to go back to work or for your child to go back to school or a child care center.

The contagious period for fifth disease is different from many other rash illnesses. For example, people with measles can spread the measles virus when they have the rash. However, people with fifth disease who weakened immune systems may be contagious for a longer amount of time.

Parvovirus B19 can also spread through blood or blood products. A pregnant woman who is infected with parvovirus B19 can pass the virus to her baby.

Diagnosis

Healthcare providers can often diagnose fifth disease just by seeing "slapped cheek" rash on a patient's face. A blood test can also be done to determine if you are susceptible or immune to parvovirus B19 infection or if you were recently infected. Once you recover from fifth disease, you develop immunity that generally protects you from parvovirus B19 infection in the future.

Prevention & Treatment

Prevention

People with fifth disease are most contagious when it seems like they have "just a cold" and before they get the rash or joint pain and swelling.

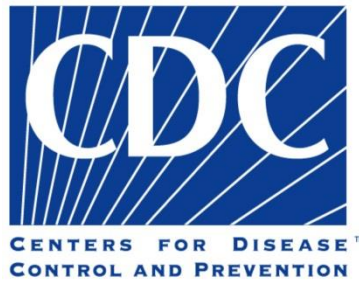
You can reduce your chance of being infected with parvovirus B19 or infecting others by

- washing your hands often with soap and water
- covering your mouth and nose when you cough or sneeze
- not touching your eyes, nose, or mouth
- avoiding close contact with people who are sick
- staying home when you are sick

After you get the rash, you are probably not contagious. So, it is usually safe for you to go back to work or for your child to return to school or a child care center. Healthcare providers who are pregnant should know about potential risks to their baby and discuss this with their doctor. All healthcare providers and patients should follow strict infection control practices to prevent parvovirus B19 from spreading.

Treatment

Fifth disease is usually mild and will go away on its own. Children and adults who are otherwise healthy usually recover completely. Treatment usually involves relieving symptoms, such as fever, itching, and joint pain and swelling. People who have complications from fifth disease should see their healthcare provider for medical treatment. There is no vaccine or medicine that can prevent parvovirus B19 infection.



What is giardiasis?

Giardiasis (GEE-are-DYE-uh-sis) is a diarrheal illness caused by a one-celled, microscopic parasite, *Giardia intestinalis* (also known as *Giardia lamblia*). Once an animal or person has been infected with *Giardia intestinalis*, the parasite lives in the intestine and is passed in the stool. Because the parasite is protected by an outer shell, it can survive outside the body and in the environment for long periods of time.

During the past 2 decades, *Giardia* infection has become recognized as one of the most common causes of waterborne disease (found in both drinking and recreational water) in humans in the United States. *Giardia* are found worldwide and within every region of the United States.

How do you get giardiasis and how is it spread?

The *Giardia* parasite lives in the intestine of infected humans or animals. Millions of germs can be released in a bowel movement from an infected human or animal. *Giardia* is found in soil, food, water, or surfaces that have been contaminated with the feces from infected humans or animals. You **can** become infected after accidentally swallowing the parasite; you **cannot** become infected through contact with blood. *Giardia* can be spread by:

- Accidentally putting something into your mouth or swallowing something that has come into contact with feces of a person or animal infected with *Giardia*.
- Swallowing recreational water contaminated with *Giardia*. Recreational water includes water in swimming pools, hot tubs, jacuzzis, fountains, lakes, rivers, springs, ponds, or streams that can be contaminated with sewage or feces from humans or animals.
- Eating uncooked food contaminated with *Giardia*.
- Accidentally swallowing *Giardia* picked up from surfaces (such as bathroom fixtures, changing tables, diaper pails, or toys) contaminated with feces from an infected person.

What are the symptoms of giardiasis?

Giardia infection can cause a variety of intestinal symptoms, which include

- Diarrhea
- Gas or flatulence
- Greasy stools that tend to float
- Stomach cramps
- Upset stomach or nausea.

These symptoms may lead to weight loss and dehydration. Some people with giardiasis have no symptoms at all.

How long after infection do symptoms appear?

Symptoms of giardiasis normally begin 1 to 2 weeks (average 7 days) after becoming infected.

How long will symptoms last?

In otherwise healthy persons, symptoms of giardiasis may last 2 to 6 weeks. Occasionally, symptoms last longer.

Who is most likely to get giardiasis?

Anyone can get giardiasis. Persons more likely to become infected include

- Children who attend day care centers, including diaper-aged children
- Child care workers
- Parents of infected children
- International travelers
- People who swallow water from contaminated sources
- Backpackers, hikers, and campers who drink unfiltered, untreated water
- Swimmers who swallow water while swimming in lakes, rivers, ponds, and streams
- People who drink from shallow wells

Contaminated water includes water that has not been boiled, filtered, or disinfected with chemicals. Several community-wide outbreaks of giardiasis have been linked to drinking municipal water or recreational water contaminated with *Giardia*.

What should I do if I think I may have giardiasis?

See your health care provider.

How is a *Giardia* infection diagnosed?

Your health care provider will likely ask you to submit stool samples to check for the parasite. Because *Giardia* can be difficult to diagnose, your provider may ask you to submit several stool specimens over several days.

What is the treatment for giardiasis?

Several prescription drugs are available to treat *Giardia*. Although *Giardia* can infect all people, young children and pregnant women may be more susceptible to dehydration resulting from diarrhea and should, therefore, drink plenty of fluids while ill.

My child does not have diarrhea, but was recently diagnosed as having giardiasis. My health care provider says treatment is not necessary. Is this true?

Treatment is not necessary when the child has no symptoms. However, there are a few exceptions. If your child does not have diarrhea, but is having nausea, fatigue (very tired), weight loss, or a poor appetite, you and your health care provider may wish to consider treatment. If your child attends a day care center where an outbreak is continuing to occur despite efforts to control it, screening and treating children who have no obvious symptoms may be a good idea. The same is true if several family members are ill, or if a family member is pregnant and therefore not able to take the most effective anti- *Giardia* medications.

If I have been diagnosed with giardiasis, should I worry about spreading the infection to others?

Yes, a *Giardia* infection can be very contagious. Follow these guidelines to avoid spreading giardiasis to others:

1. Wash your hands with soap and water after using the toilet, changing diapers, and before eating or preparing food.
2. Do not swim in recreational water (pools, hot tubs, lakes or rivers, the ocean, etc.) if you have *Giardia* and for at least 2 weeks after diarrhea stops. You can pass *Giardia* in your stool and contaminate water for several weeks after your symptoms have ended. This has resulted in outbreaks of *Giardia* among recreational water users.
3. Avoid fecal exposure during sexual activity.

How can I prevent a *Giardia* infection?

Practice good hygiene.

1. Wash hands thoroughly with soap and water.
 - a. Wash hands after using the toilet and before handling or eating food (especially for persons with diarrhea).
 - b. Wash hands after every diaper change, especially if you work with diaper-aged children, even if you are wearing gloves.
2. Protect others by not swimming if you are experiencing diarrhea (essential for children in diapers).

Avoid water that might be contaminated.

1. Do not swallow recreational water.
2. Do not drink untreated water from shallow wells, lakes, rivers, springs, ponds, and streams.
3. Do not drink untreated water during community-wide outbreaks of disease caused by contaminated drinking water.
4. Do not use untreated ice or drinking water when traveling in countries where the water supply might be unsafe.

These symptoms may lead to weight loss and dehydration. Some people with giardiasis have no symptoms at all.

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What should I do if I think I may have giardiasis?

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3. Avoid fecal exposure during sexual activity.

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2. Protect others by not swimming if you are experiencing diarrhea (essential for children in diapers).

Avoid water that might be contaminated.

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3. Do not drink untreated water during community-wide outbreaks of disease caused by contaminated drinking water.
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Gonorrhea

In Illinois, the incidence of gonorrhea has declined significantly since 1975, when 59,000 cases were reported. Yet, almost 17,000 cases of the disease were reported in the state in 2011. It is estimated that another nearly 17,000 cases, mostly among teenagers and young adults, go unreported each year. The approximate annual cost of gonorrhea and its complications in Illinois is more than \$3 million.

United States Centers for DC estimates that, annually, more than 700,000 people in the United States get new gonorrhea infections and less than half of these infections are reported to CDC. In 2010, nearly 322,000 cases of gonorrhea were reported to CDC.

What is gonorrhea?

Gonorrhea is a sexually transmitted disease (STD) caused by a bacterium, *Neisseria gonorrhoeae* (gonococcus), that grows and multiplies in moist, warm areas of the reproductive tract, including the cervix (opening to the womb), uterus (womb), and fallopian tubes (egg canals) in women, and in the urethra (urine canal) in women and men. The bacterium can grow in the mouth, throat, eyes and anus. In women, the cervix is the most common site of infection. However, the disease can spread to the uterus and fallopian tubes, resulting in pelvic inflammatory disease. This, in turn, can cause infertility and ectopic pregnancy.

How common is gonorrhea?

Gonorrhea is a very common infectious disease. CDC estimates that, annually, more than 700,000 people in the United States get new gonorrheal infections, and less than half of these infections are reported to CDC. In 2011, 321,849 cases of gonorrhea were reported to CDC.

How is gonorrhea spread?

People get gonorrhea by having sex (anal, vaginal or oral) with someone who has the disease. Gonorrhea can still be transmitted via fluids even if a man does not ejaculate. Gonorrhea can be spread from an untreated mother to her baby during childbirth.

People who have had gonorrhea and have been treated may get infected again if they have sexual contact with a person infected with gonorrhea. When the infection occurs in children, it is most commonly due to child abuse.

Who is at risk for gonorrhea?

Any sexually active person can be infected with gonorrhea. It is a very common STD. In the United States, the highest reported rates of infection are among sexually active teenagers, young adults, and African Americans.

What are the symptoms of gonorrhea?

Some men with gonorrhea may have no symptoms at all. However, common symptoms in men include a burning sensation when urinating, or a white, yellow or green discharge from the penis that usually appears one to 14 days after infection. Sometimes men with gonorrhea get painful or swollen testicles.

Most women with gonorrhea do not have any symptoms. Even when a woman has symptoms, they are often mild and can be mistaken for a bladder or vaginal infection. The initial symptoms in women can include a painful or burning sensation when urinating, increased vaginal discharge, or vaginal bleeding between periods. More advanced symptoms, which indicate progression to pelvic inflammatory disease, include abdominal pain, vomiting or fever. Women with gonorrhea are at risk of developing serious complications from the infection, even if symptoms are not present or are mild.

Symptoms of rectal infection in both men and women may include discharge, anal itching, soreness, bleeding, or painful bowel movements. Rectal infections may cause no symptoms. Infections in the throat may cause a sore throat, but usually cause no symptoms.

What are the complications of gonorrhea?

Untreated gonorrhea can cause serious and permanent health problems in both women and men.

In women, gonorrhea can spread into the uterus (womb) or fallopian tubes (egg canals) and cause pelvic inflammatory disease (PID). The symptoms may be mild or

can be very severe and can include abdominal pain and fever. PID can lead to internal abscesses (pus-filled pockets that are hard to cure) and chronic (long-lasting) pelvic pain. PID can damage the fallopian tubes enough that a woman will be unable to have children. It also can increase her risk of ectopic pregnancy. Ectopic pregnancy is a life-threatening condition in which a fertilized egg grows outside the uterus, usually in a fallopian tube.

In men, gonorrhea can cause a painful condition called epididymitis in the tubes attached to the testicles. In rare cases, this may prevent a man from being able to father children.

If not treated, gonorrhea can spread to the blood or joints. This condition can be life-threatening.

How does gonorrhea affect a pregnant woman and her baby?

If a pregnant woman has gonorrhea, she may give the infection to her baby as the baby passes through the birth canal during delivery. This can cause serious health problems for the baby. Treating gonorrhea as soon as it is detected in pregnant women will make these health outcomes less likely. Pregnant women should consult a health care provider for appropriate examination, testing, and treatment, as necessary.

What about Gonorrhea and HIV?

Untreated gonorrhea can increase a person's risk of acquiring or transmitting HIV the virus that causes AIDS.

Who should be tested for gonorrhea?

Any sexually active person can be infected with gonorrhea. Anyone with genital symptoms such as discharge, burning during urination, unusual sores, or rash should stop having sex and see a health care provider immediately.

Also, anyone with an oral, anal or vaginal sex partner who has been recently diagnosed with an STD should see a health care provider for evaluation.

Some people should be tested for gonorrhea even if they do not have symptoms or know of a sex partner who has gonorrhea. Anyone who is sexually active should discuss his or her risk factors with a health care provider and ask whether he or she should be tested for gonorrhea or other STDs.

People who have gonorrhea should be tested for other STDs.

How is gonorrhea diagnosed?

Most of the time, a urine test can be used to test for gonorrhea. However, if a person has had oral and/or anal sex, swabs may be used to collect samples from the throat and/or rectum. In some cases, a swab may be used to collect a sample from a man's urethra (urine canal) or a woman's cervix (opening to the womb).

How is gonorrhea treated?

Gonorrhea can be cured with the right treatment. CDC now recommends **dual therapy** (i.e. using two drugs) for the treatment of gonorrhea. It is important to take all of the medication prescribed to cure gonorrhea. Medication for gonorrhea should not be shared with anyone. Although medication will stop the infection, it will not repair any permanent damage done by the disease. Antimicrobial resistance in gonorrhea is of increasing concern, and successful treatment of gonorrhea is becoming more difficult. If a person's symptoms continue for more than a few days after receiving treatment, he or she should return to a health care provider to be reevaluated.

What about partners?

If a person has been diagnosed and treated for gonorrhea, he or she should tell all recent anal, vaginal or oral sex partners (all sex partners within 60 days before the onset of symptoms or diagnosis) so they can see a health provider and be treated. This will reduce the risk that the sex partners will develop serious complications from gonorrhea and will reduce the person's risk of becoming reinfected. A person with gonorrhea and all of his or her sex partners must avoid having sex until they have completed their treatment for gonorrhea and until they no longer have symptoms. For tips on talking to partners about sex and STD testing, visit <http://www.gytnow.org/talking-to-your-partner> .

How is gonorrhea prevented?

Not having sex is the best protection against gonorrhea and other STDs. Having sex with only one uninfected partner who only has sex with you is also safe. Latex male condoms, when used consistently and correctly, can reduce the risk of getting or giving gonorrhea. The surest way to avoid gonorrhea is to abstain from vaginal, anal and oral sex or to be in a long-term mutually monogamous relationship with a partner who has been tested and is known to be uninfected.

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Group A *Streptococcus* Information for Parents/Caregivers

What is group A *Streptococcus* (GAS)?

Group A *Streptococcus* is a bacterium found in the human throat or on the skin. There are approximately 300 cases of invasive GAS infection, which is a more serious type of strep infection, reported in Illinois each year. Single cases of non-invasive strep infections such as strep throat are not reportable but public health should be informed of outbreaks in settings such as schools, long term care and group homes.

What kind of illnesses does Group A *Streptococcus* infection cause and what are the symptoms?

Some persons with GAS infections experience no signs or symptoms. For those with symptoms, the most common illnesses are strep throat and a skin infection called impetigo. Symptoms of these illnesses are described below.

- Strep throat – swollen tonsils possibly covered with a grayish-white film, swollen lymph nodes, fever with or without chills, painful swallowing and headache.
- Impetigo - mild skin infection accompanied by open, draining sores and other general symptoms of GAS infection such as fever, swollen lymph nodes and a sore throat.

How is Group A *Streptococcus* spread?

GAS can be spread from any individual who harbors the bacteria even if they do not have any symptoms. Persons without symptoms are usually less contagious. The bacteria are transmitted from person to person by direct contact with mucus or secretions (e.g. nasal secretions) from an infected person. Transmission occurs less frequently through indirect contact with articles or objects handled by an infected person. The time from exposure to illness is one day to three days.

Untreated individuals can be contagious for 10 days to 21 days or longer. An infected person is typically no longer infectious after the first 24 hours of appropriate antibiotic treatment.

How is Group A *Streptococcus* diagnosed and treated?

Depending on the type of infection suspected, specific laboratory tests will be conducted to confirm the diagnosis. If the diagnosis is confirmed, treatment with the proper antibiotic is indicated. As with any antibiotic use, it is important to complete the entire course as prescribed by your health care provider.

Is there any way to reduce the chances of getting a GAS infection?

As with most communicable diseases, the spread of group A *Streptococcus* infections may be reduced by good hygiene. Effective handwashing after coughing or sneezing and before preparing foods or eating is essential. Persons with fever and prolonged sore throats should be seen by a doctor for testing. If GAS infection is diagnosed, the person should stay home from work, school or day care until fever free and 24 hours or more after taking an antibiotic.

Parents should inform the school if their child is diagnosed with a strep infection so other children can be observed for symptoms. Schools will monitor the illnesses and report outbreaks to the local health department. Early reporting can help prevent the spread of Streptococcal infections.

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Group A *Streptococcus* (GAS) Infections

What is group A streptococcus (GAS)?

Group A *Streptococcus* is a bacterium found in the human throat or on the skin. There are approximately 350 cases of invasive GAS infection reported in Illinois each year.

What kind of illnesses does GAS infection cause and what are the symptoms?

Some persons with GAS infections experience no signs or symptoms. For those with symptoms, the most common illnesses are “strep throat,” a skin infection called impetigo and scarlet fever. Symptoms of these illnesses are described below.

- "Strep throat," – swollen tonsils possible covered with a grayish-white film, swollen lymph nodes, fever with or without chills, painful swallowing and headache.
- Impetigo - mild skin infection accompanied by open, draining sores and other general symptoms of GAS infection such as fever, swollen lymph nodes and a sore throat.
- Scarlet fever - characterized by a fever, sore throat, red sandpaper-like rash and a red "strawberry" tongue. It is caused by several different strains of the streptococcal bacteria, all of which produce a toxin that cause the characteristic red rash.

Anyone suspected of having an infection with Group A Streptococcus should immediately seek medical care for testing and treatment. Though common, GAS infections can become very serious if untreated.

What are the complications of GAS infections?

- Glomerulonephritis is a rare but serious complication of streptococcal infection that limits your kidney’s ability to remove waste from your blood. Symptoms

include blood in urine, frothy or foamy urine and swelling in your feet, ankles, legs, abdomen or face.

- Untreated strep throat or an incomplete antibiotic course can result in rheumatic fever. Rheumatic fever is rare but serious as it causes permanent damage to the heart's valves.

Types of GAS Infections

GAS infections can sometimes cause invasive disease, including pneumonia, meningitis, infection of the skin and muscle (necrotizing fasciitis) as well as an illness resembling toxic shock syndrome (Streptococcal Toxic Shock Syndrome or STSS). Though relatively uncommon, these invasive infections can progress rapidly and be life threatening.

Persons at higher risk for invasive disease include those with:

- chronic conditions (diabetes, cancer),
- compromised immune systems (receiving chemotherapy, autoimmune disorders or HIV infection) or
- open wounds or sores that allow the bacteria to enter the tissue.

It also is believed that infection with certain strains of Group A Streptococcus increases the likelihood of invasive disease.

What are signs of necrotizing fasciitis and Streptococcal toxic shock syndrome (STSS)?

Necrotizing fasciitis:

- Severe pain and swelling, often rapidly increasing
- Fever
- Redness at a wound site

STSS:

- Fever
- Abrupt onset of generalized or localized severe pain, often in an arm or leg
- Dizziness with or without confusion
- Influenza-like syndrome

How is GAS spread?

GAS can be spread from any individual who harbors the bacteria even if they do not have any symptoms. Persons without symptoms are usually less contagious. The bacteria are transmitted from person to person by direct contact with mucus or secretions (e.g. nasal secretions) from an infected person. Transmission occurs less frequently through contact with articles handled by an infected person. The time from exposure to illness is one to three days.

Untreated individuals can be contagious for 10-21 days or longer. An infected person is typically no longer infectious after the first 24 hours of appropriate treatment.

How can GAS be treated?

Group A *Streptococcus* bacteria can be treated with several different antibiotics. As with any antibiotic use, it is important to complete the entire course as prescribed by your health care provider.

Is there any way to reduce the chances of getting a GAS infection?

As with most communicable diseases, the spread of group A *Streptococcus* infections may be reduced by good hygiene. Effective hand washing after coughing or sneezing and before preparing foods or eating is essential (<http://www.cdc.gov/handwashing/>). Persons with fever and sore throats should be seen by a doctor for testing. If GAS infection is diagnosed, the person should stay home from work, school or day care until fever free and 24 hours or more after taking an antibiotic.

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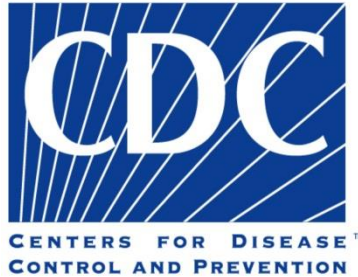
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Hand, foot, and mouth disease

Hand, foot, and mouth disease (HFMD) is a common illness of infants and children. It is characterized by fever, sores in the mouth, and a rash with blisters. HFMD begins with a mild fever, poor appetite, malaise ("feeling sick"), and frequently a sore throat. One or 2 days after the fever begins, painful sores develop in the mouth. They begin as small red spots that blister and then often become ulcers. They are usually located on the tongue, gums, and inside of the cheeks. The skin rash develops over 1 to 2 days with flat or raised red spots, some with blisters. The rash does not itch, and it is usually located on the palms of the hands and soles of the feet. It may also appear on the buttocks. A person with HFMD may have only the rash or the mouth ulcers.

Is HFMD the same as foot-and-mouth disease?

No. HFMD is often confused with foot-and-mouth disease of cattle, sheep, and swine. Although the names are similar, the two diseases are not related at all and are caused by different viruses. For information on foot-and-mouth disease, please visit the web site of the US Department of Agriculture at <http://www.aphis.usda.gov/lpa/issues/fmd/fmd.html>

What causes HFMD?

Viruses from the group called enteroviruses cause HFMD. The most common cause is coxsackievirus A16; sometimes, HFMD is caused by enterovirus 71 or other enteroviruses. The enterovirus group includes polioviruses, coxsackieviruses, echoviruses and other enteroviruses.

Is HFMD serious?

Usually not. HFMD caused by coxsackievirus A16 infection is a mild disease and nearly all patients recover without medical treatment in 7 to 10 days. Complications are uncommon. Rarely, the patient with coxsackievirus A16 infection may also develop "aseptic" or viral meningitis, in which the person has fever, headache, stiff neck, or back pain, and may need to be hospitalized for a few days. Another cause of HFMD, EV71 may also cause viral meningitis and, rarely, more serious diseases, such as encephalitis, or a poliomyelitis-like paralysis. EV71 encephalitis may be fatal. Cases of fatal encephalitis occurred during outbreaks of HFMD in Malaysia in 1997 and in Taiwan in 1998.

Is HFMD contagious?

Yes, HFMD is moderately contagious. Infection is spread from person to person by direct contact with nose and throat discharges, saliva, fluid from blisters, or the stool of infected persons. A person is most contagious during the first week of the illness. HFMD is not transmitted to or from pets or other animals.

How soon will someone become ill after getting infected?

The usual period from infection to onset of symptoms ("incubation period") is 3 to 7 days. Fever is often the first symptom of HFMD.

Who is at risk for HFMD?

HFMD occurs mainly in children under 10 years old, but may also occur in adults too. Everyone is at risk of infection, but not everyone who is infected becomes ill. Infants, children, and adolescents are more likely to be susceptible to infection and illness from these viruses, because they are less likely than adults to have antibodies and be immune from previous exposures to them. Infection results in immunity to the specific virus, but a second episode may occur following infection with a different member of the enterovirus group.

What are the risks to pregnant women exposed to children with HFMD?

Because enteroviruses, including those causing HFMD, are very common, pregnant women are frequently exposed to them, especially during summer and fall months. As for any other adults, the risk of infection is higher for pregnant women who do not have antibodies from earlier exposures to these viruses, and who are exposed to young children - the primary spreaders of enteroviruses.

Most enterovirus infections during pregnancy cause mild or no illness in the mother. Although the available information is limited, currently there is no clear evidence that maternal enteroviral infection causes adverse outcomes of pregnancy such as abortion, stillbirth, or congenital defects. However, mothers infected shortly before delivery may pass the virus to the newborn. Babies born to mothers who have symptoms of enteroviral illness around the time of delivery are more likely to be infected. Most newborns infected with an enterovirus have mild illness, but, in rare cases, they may develop an overwhelming infection of many organs, including liver and heart, and die from the infection. The risk of this severe illness in newborns is higher during the first two weeks of life.

Strict adherence to generally recommended good hygienic practices by the pregnant woman may help to decrease the risk of infection during pregnancy and around the time of delivery.

When and where does HFMD occur?

Individual cases and outbreaks of HFMD occur worldwide, more frequently in summer and early autumn. In the recent past, major outbreaks of HFMD attributable to enterovirus 71 have been reported in some South East Asian countries (Malaysia, 1997; Taiwan, 1998).

How is HFMD diagnosed?

HFMD is one of many infections that result in mouth sores. Another common cause is oral herpesvirus infection, which produces an inflammation of the mouth and gums (sometimes called stomatitis). Usually, the physician can distinguish between HFMD and other causes of mouth sores based on the age of the patient, the pattern of

symptoms reported by the patient or parent, and the appearance of the rash and sores on examination. A throat swab or stool specimen may be sent to a laboratory to determine which enterovirus caused the illness. Since the testing often takes 2 to 4 weeks to obtain a final answer, the physician usually does not order these tests.

How is HFMD treated?

No specific treatment is available for this or other enterovirus infections. Symptomatic treatment is given to provide relief from fever, aches, or pain from the mouth ulcers.

Can HFMD be prevented?

Specific prevention for HFMD or other non-polio enterovirus infections is not available, but the risk of infection can be lowered by good hygienic practices. Preventive measures include frequent handwashing, especially after diaper changes (see "Handwashing" in: "An Ounce of Prevention: Keeps the Germs Away" at <http://www.cdc.gov/ncidod/op/handwashing.htm>), cleaning of contaminated surfaces and soiled items first with soap and water, and then disinfecting them by diluted solution of chlorine-containing bleach (made by mixing approximately ¼ cup of bleach with 1 gallon of water. (See more about cleaning and disinfecting in general at <http://www.cdc.gov/ncidod/op/cleaning.htm>). Avoidance of close contact (kissing, hugging, sharing utensils, etc.) with children with HFMD may also help to reduce of the risk of infection to caregivers.

HFMD in the childcare setting

HFMD outbreaks in child care facilities occur most often in the summer and fall months, and usually coincide with an increased number of cases in the community.

CDC has no specific recommendations regarding the exclusion of children with HFMD from child care programs, schools, or other group settings. Children are often excluded from group settings during the first few days of the illness, which may reduce the spread of infection, but will not completely interrupt it. Exclusion of ill persons may not prevent additional cases since the virus may be excreted for weeks after the symptoms have disappeared. Also, some persons excreting the virus, including most adults, may have no symptoms. Some benefit may be gained, however, by excluding children who have blisters in their mouths and drool or who have weeping lesions on their hands.

If an outbreak occurs in the child care setting:

- Make sure that all children and adults use good handwashing technique, especially after diaper changes.
- Thoroughly wash and disinfect contaminated items and surfaces using diluted solution of chlorine-containing bleach.



Head Lice Information for Schools

Students diagnosed with live head lice do not need to be sent home early from school; they can go home at the end of the day, be treated, and return to class after appropriate treatment has begun. Nits may persist after treatment, but successful treatment should kill crawling lice.

Head lice can be a nuisance but they have not been shown to spread disease. Personal hygiene or cleanliness in the home or school has nothing to do with getting head lice.

Both the American Association of Pediatrics and the National Association of School Nurses advocate that "no-nit" policies should be discontinued. "No-nit" policies that require a child to be free of nits before they can return to schools should be discontinued for the following reasons:

- Many nits are more than $\frac{1}{4}$ inch from the scalp. Such nits are usually not viable and very unlikely to hatch to become crawling lice, or may in fact be empty shells, also known as casings.
- Nits are cemented to hair shafts and are very unlikely to be transferred successfully to other people.
- The burden of unnecessary absenteeism to the students, families and communities far outweighs the risks associated with head lice.
- Misdiagnosis of nits is very common during nit checks conducted by nonmedical personnel

What are head lice?

The head louse, or *Pediculus humanus capitis*, is a parasitic insect that can be found on the head, eyebrows, and eyelashes of people. Head lice feed on human blood several time a day and live close to the human scalp. Head lice are not known to spread disease.

Who is at risk for getting head lice?

Head lice are found worldwide. In the United States, infestation with head lice is most common among pre-school children attending child care, elementary schoolchildren, and the household members of infested children. Although reliable data on how many people in the United States get head lice each year are not available, an estimated 6 million to 12 million infestations occur

each year in the United States among children 3 to 11 years of age. In the United States, infestation with head lice is much less common among African-Americans than among persons of other races, possibly because the claws of the of the head louse found most frequently in the United States are better adapted for grasping the shape and width of the hair shaft of other races.

Head lice move by crawling; they cannot hop or fly. Head lice are spread by direct contact with the hair of an infested person. Anyone who comes in head-to-head contact with someone who already has head lice is at greatest risk. Spread by contact with clothing (such as hats, scarves, coats) or other personal items (such as combs, brushes, or towels) used by an infested person is uncommon. Personal hygiene or cleanliness in the home or school has nothing to do with getting head lice.

What do head lice look like?

Head lice have three forms: the egg (also called a nit), the nymph, and the adult.



Actual size of the three lice forms compared to a penny. (CDC Photo)



Illustration of egg on a hair shaft. (CDC Photo)

Egg/Nit: Nits are lice eggs laid by the adult female head louse at the base of the hair shaft nearest the scalp. Nits are firmly attached to the hair shaft and are oval-shaped and very small (about the size of a knot in thread) and hard to see. Nits often appear yellow or white although live nits sometimes appear to be the same color as the hair of the infested person. Nits are

often confused with dandruff, scabs, or hair spray droplets. Head lice nits usually take about 8–9 days to hatch. Eggs that are likely to hatch are usually located no more than ¼ inch from the base of the hair shaft. Nits located further than ¼ inch from the base of hair shaft may very well be already hatched, non-viable nits, or empty nits or casings. This is difficult to distinguish with the naked eye.



Nymph form. (CDC Photo)

Nymph: A nymph is an immature louse that hatches from the nit. A nymph looks like an adult head louse, but is smaller. To live, a nymph must feed on blood. Nymphs mature into adults about 9–12 days after hatching from the nit.



Adult louse. (CDC Photo)

Adult: The fully grown and developed adult louse is about the size of a sesame seed, has six legs, and is tan to grayish-white in color. Adult head lice may look darker in persons with dark hair than in persons with light hair. To survive, adult head lice must feed on blood. An adult head louse can live about 30 days on a person's head but will die within one or two days if it falls off a person. Adult female head lice are usually larger than males and can lay about six eggs each day.



Adult louse claws. (CDC Photo)

Where are head lice most commonly found?

Head lice and head lice nits are found almost exclusively on the scalp, particularly around and behind the ears and near the neckline at the back of the head. Head lice or head lice nits sometimes are found on the eyelashes or eyebrows but this is uncommon. Head lice hold tightly to hair with hook-like claws at the end of each of their six legs. Head lice nits are cemented firmly to the hair shaft and can be difficult to remove even after the nymphs hatch and empty casings remain.

What are the signs and symptoms of head lice infestation?

- Tickling feeling of something moving in the hair.
- Itching, caused by an allergic reaction to the bites of the head louse.
- Irritability and difficulty sleeping; head lice are most active in the dark.
- Sores on the head caused by scratching. These sores can sometimes become infected with bacteria found on the person's skin.

How did my child get head lice?

Head-to-head contact with an already infested person is the most common way to get head lice. Head-to-head contact is common during play at school, at home, and elsewhere (sports activities, playground, slumber parties, camp).

Although uncommon, head lice can be spread by sharing clothing or belongings. This happens when lice crawl, or nits attached to shed hair hatch, and get on the shared clothing or belongings. Examples include:

- sharing clothing (hats, scarves, coats, sports uniforms) or articles (hair ribbons, barrettes, combs, brushes, towels, stuffed animals) recently worn or used by an infested person;
- or lying on a bed, couch, pillow, or carpet that has recently been in contact with an infested person.

Dogs, cats, and other pets do not play a role in the spread of head lice.

How is head lice infestation diagnosed?

The diagnosis of a head lice infestation is best made by finding a live nymph or adult louse on the scalp or hair of a person. Because nymphs and adult lice are very small, move quickly, and avoid light, they can be difficult to find. Use of a magnifying lens and a fine-toothed comb may be helpful to find live lice. If crawling lice are not seen, finding nits firmly attached within a ¼ inch of base of the hair shafts strongly suggests, but does not confirm, that a person is infested

and should be treated. Nits that are attached more than ¼ inch from the base of the hair shaft are almost always dead or already hatched. Nits are often confused with other things found in the hair such as dandruff, hair spray droplets, and dirt particles. If no live nymphs or adult lice are seen, and the only nits found are more than ¼-inch from the scalp, the infestation is probably old and no longer active and does not need to be treated.

If you are not sure if a person has head lice, the diagnosis should be made by their health care provider, local health department, or other person trained to identify live head lice.

How is head lice infestation treated?

Is infestation with head lice reportable to health departments?

Most health departments do not require reporting of head lice infestation. However, it may be beneficial for the sake of others to share information with school nurses, parents of classmates, and others about contact with head lice.

I don't like my school's "no-nit" policy; can CDC do something?

No. CDC is not a regulatory agency. School head lice policies often are determined by local school boards. Local health departments may have guidelines that address school head lice policies; check with your local and state health departments to see if they have such recommendations.

Do head lice spread disease?

Head lice should not be considered as a medical or public health hazard. Head lice are not known to spread disease. Head lice can be an annoyance because their presence may cause itching and loss of sleep. Sometimes the itching can lead to excessive scratching that can sometimes increase the chance of a secondary skin infection.

Can head lice be spread by sharing sports helmets or headphones?

Head lice are spread most commonly by direct contact with the hair of an infested person. Spread by contact with inanimate objects and personal belongings may occur but is very uncommon. Head lice feet are specially adapted for holding onto human hair. Head lice would have difficulty attaching firmly to smooth or slippery surfaces like plastic, metal, polished synthetic leathers, and other similar materials.

Can wigs or hair pieces spread lice?

Head lice and their eggs (nits) soon perish if separated from their human host. Adult head lice can live only a day or so off the human head without blood for feeding. Nymphs (young head lice) can live only for several hours without feeding on a human. Nits (head lice eggs) generally

die within a week away from their human host and cannot hatch at a temperature lower than that close to the human scalp. For these reasons, the risk of transmission of head lice from a wig or other hairpiece is extremely small, particularly if the wig or hairpiece has not been worn within the preceding 48 hours by someone who is actively infested with live head lice.

Can swimming spread lice?

Data show that head lice can survive under water for several hours but are unlikely to be spread by the water in a swimming pool. Head lice have been seen to hold tightly to human hair and not let go when submerged under water. Chlorine levels found in pool water do not kill head lice.

Head lice may be spread by sharing towels or other items that have been in contact with an infested person's hair, although such spread is uncommon. Children should be taught not to share towels, hair brushes, and similar items either at poolside or in the changing room.

Swimming or washing the hair within 1–2 days after treatment with some head lice medicines might make some treatments less effective. Seek the advice of your health care provider or health department if you have questions.



HEAD LICE

What are the symptoms of a head lice infestation?

The earliest and most common symptom of a head lice infestation is itching, particularly in the area behind the ears and at the nape of the neck. Intense scratching may lead to secondary bacterial infection.

How are head lice spread?

Head lice can be passed from person to person through direct contact. But they also can be transferred indirectly among clothing items when coats, hats and scarves hang or are stored touching one another (in cloak rooms or when these items are placed against one another on coat hooks or racks). Head lice also can be spread when infested hair brushes or combs are shared or when infested bedding, towels or shower caps are shared. Once present in a home, school or institutional environment, head lice usually spread rapidly.

There are many misconceptions about head lice. They do not transmit communicable diseases. They do not jump or fly; they can only crawl. Head lice depend completely on their host for nourishment; their only source of food is human blood. The prevalence of head lice infestation is no different in individuals with long hair than in those with short hair. Head lice seldom occur on eyebrows or eyelashes. They infest persons from all socioeconomic levels, without regard for age, race, sex or standards of personal hygiene. Animals are not a source of human lice.

How long do head lice live?

The life span of an adult louse on a host ranges up to 30 days. During this time, the female head louse can deposit about 90 eggs. After incubating for seven to 10 days, the nits hatch and, after another 10 days, mature into adult head lice and the cycle begins again. Off the host, adult head lice can live about two to four days at 74 degrees Fahrenheit (F) and one to two days at 86 degrees. Nits will remain alive off

the host for up to 10 days; they will not hatch at or below room temperature (68 degrees F).

How are head lice infestations treated?

Both prescription and over-the-counter remedies are effective in treating head lice. But it is important that pregnant women and infants be treated under the direction of a physician because of concerns about potentially adverse effects. Be careful not to use topical preparations more frequently and over longer periods of time than directed. Overuse of these preparations may cause dermatitis or result in absorption of potentially toxic quantities of the drug. Since agents that kill lice may not kill nits completely even when used according to directions the U. S. Centers for Disease Control and Prevention (CDC) recommends that infested patients be treated twice. The interval between treatments should approximate the incubation period for nits (seven to 10 days) so the second application will kill any newly hatched parasites. Waiting longer than 10 days to apply a second treatment may allow some parasites to mature and lay more eggs.

All persons who have head lice in a household should be treated. To treat an infested person--

- Remove all clothing;
- Apply head lice medication according to label instructions (do not bathe before treatment), using a towel to protect the eyes;
- Have the person bathe and put on clean clothing after treatment; and
- Repeat treatment in seven to 10 days.

Special fine-tooth combs (nit combs) are readily available and can be used to scrape nits and lice off the hair shaft. Combing out nits and lice after proper treatment is not necessary to eliminate infestation, but it may be used for cosmetic reasons or may be required by school "nit-free" policies or by health authorities. Parents and guardians should check treated children for lice and nits daily for two or three weeks after treatment.

Should objects (e.g., clothing, furniture, etc.) be treated?

Objects that are able to harbor head lice and serve as vehicles of transmission should be treated.

- Exposing lice and nits to temperatures above 125 degrees F for 10 minutes is lethal. Most personal articles of clothing and bedding can be disinfested by

machine washing in hot water or machine drying for at least 20 minutes using the hot cycle. Be sure to allow time between loads for water to reheat to the disinfecting temperature.

- Place non-washable personal articles of clothing or bedding in the dryer on high heat for at least 20 minutes, dry clean or seal non-washable fabrics in a plastic bag for a minimum of 10 days.
- Place combs and brushes in a pan of water and heat on a stove to about 150 degrees F for 10 minutes. If heating may damage combs or brushes, soak them for one hour in a phenol solution (e.g., Lysol®). To prevent the spread of head lice, do not share combs, brushes, hats, coats, towels or other articles that come in contact with the head, neck and shoulders.
- Thoroughly vacuum or clean car seats, bus seats, and individual infant and car seats according to manufacturer's directions.
- Fumigating rooms and using insecticidal sprays on furniture and carpets are not recommended to kill head lice; **thorough** vacuuming of houses and rooms inhabited by infested persons is sufficient.

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Hepatitis A

What is hepatitis?

Hepatitis is an inflammation of the liver caused by certain viruses and other factors, such as alcohol abuse, some medications and trauma. Its various forms affect millions of Americans. Although many cases of hepatitis are not a serious threat to health, infection with certain hepatitis viruses can become chronic (long-lasting) and can sometimes lead to liver failure and death.

How many kinds of viral hepatitis are there?

There are four major types of hepatitis, all caused by different viruses: hepatitis A, hepatitis B, hepatitis C and delta hepatitis. This “HealthBeat” focuses on hepatitis A.

What is hepatitis A and how is it transmitted?

Hepatitis A, formerly known as infectious hepatitis, is caused by the hepatitis A virus. The virus enters through the mouth, multiplies in the body and is passed in the stool. It can be carried on the hands of an infected person who does not wash his or her hands thoroughly after using the toilet. The infection can be spread by direct contact with the hepatitis A virus or when another person consumes food or drink handled by an infected person who does not practice good hygiene, such as handwashing. In some cases, it can be spread to persons who ingest sewage-contaminated water.

What are the symptoms of hepatitis A?

The symptoms of hepatitis A include fatigue, poor appetite, fever and vomiting. Urine may become darker. Jaundice may then appear. Symptoms can appear from 15 to 50 days after exposure, but usually within 28 to 30 days of being exposed to the virus.

The disease is rarely fatal, and most people recover in a few weeks without any complications. Infants and young children tend to have very mild or no symptoms and are less likely to develop jaundice than are older children and adults. Not everyone

infected with the virus will have all of the symptoms. There are no long-term effects. Once an individual recovers from hepatitis A, he or she is immune for life and does not continue to carry the virus.

During the recovery period, it is important to avoid drinking alcohol and taking certain prescription and over-the-counter medications (e.g., acetaminophen/Tylenol®), which can injure the liver.

How contagious is hepatitis A?

Casual contacts — fellow classmates or work associates, for example — are generally not at risk. Because close personal contact in classrooms or offices is unlikely and because older children and adults typically practice good hygiene, the likelihood that hepatitis A will be transmitted in these settings is reduced. However, hepatitis A can be transmitted in child day-care settings, especially if good hygiene is not practiced after changing diapers. It also is due to the close personal contact among children, who are still learning to practice proper hygiene.

The contagious period begins about two weeks before symptoms appear and continues up to one week after the onset of jaundice (a yellowing of the skin and whites of the eyes). Because of the delay in symptoms, a person can transmit the virus without realizing it.

In Illinois, the incidence of hepatitis A has declined since 1990, when 1,726 cases were recorded, to 112 cases in 2008.

How can hepatitis A be prevented?

The single most effective way to prevent the spread of the hepatitis A virus is careful handwashing after using the toilet. Also, infected people should not handle foods during the contagious period (about two weeks before symptoms appear and up to one week after onset of jaundice).

Is there a vaccine to prevent hepatitis A?

In 1995, a hepatitis A vaccine was licensed for use in the United States. This vaccine is recommended for children older than one year of age and certain adolescents, persons who plan to travel to countries where hepatitis A occurs frequently, those who have blood clotting disorders or chronic liver disease, men who have sex with men and illegal drug users. Two doses of the vaccine are needed for lasting protection. These doses should be given at least 6 months apart. Please check with your physician.

After receiving the full series of vaccinations, a person should develop long-term immunity. Research suggests immunity could last as long as 20 years.

What is the proper handwashing technique?

Wet hands with soap and warm water. Rub hands for 20 seconds, making sure you clean under fingernails. Rinse under warm water. Dry hands on a paper towel or your own clean towel. In washrooms where paper towels are available, use a paper towel to turn off the water faucet and throw the towel away.

How can illness be prevented after a possible exposure to the hepatitis A virus, such as eating food handled by someone with hepatitis A in a restaurant?

A vaccine is available that can help prevent hepatitis A infection if it is given early enough.

Who should NOT get the vaccine after being exposed to hepatitis A in a setting such as a restaurant?

- Individuals who have had hepatitis A infection before or received 2 shots of the hepatitis A vaccine
- Individuals who have had a severe reaction to the hepatitis A vaccine or another vaccine in the past
- Individuals who are allergic to neomycin (an antibiotic)
- Infants less than 12 months of age
- Pregnant women

Anyone who is moderately or severely ill at the time the shot is scheduled should probably wait until they recover. People with a mild illness can usually get the vaccine.

How long will this vaccine protect me against hepatitis A?

One dose of hepatitis A vaccine provides protection for at least 1 year. A second dose in 6 to 12 months provides protection for at least 20 years. A vaccination series started with one brand of vaccine may be completed with the same or other brand of hepatitis A vaccine.

Can I get hepatitis A more than once?

No. Once you have had hepatitis A infection you cannot get it again.

Who should receive immune globulin to prevent hepatitis A?

For individuals who should not get the vaccine, or if vaccine is not available, a "shot" called an immune globulin can be given. Immune globulin is a sterile preparation of antibodies that can lower the risk of infection for about 3 to 5 months. Also, people with a weakened immune system or chronic liver disease should be given one dose of immune globulin.

Household members, day-care contacts or others in close personal contact with an infected person should call a doctor or their local health department to obtain information about receiving preventive treatment to reduce the risk of becoming ill. In normal working and classroom situations (except day-care centers), contacts do not need to receive immune globulin or vaccine.

How is hepatitis A treated?

No special medicines or antibiotics are used to treat a person once symptoms appear. Generally, bed rest is all that is needed.

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Hepatitis B

What is hepatitis?

Hepatitis is an inflammation of the liver caused by certain viruses and other factors, such as alcohol abuse, some medications and trauma. Its various forms affect millions of Americans. Although many cases of hepatitis are not a serious threat to health, infection with certain hepatitis viruses can become chronic (long-lasting) and can sometimes lead to liver failure and death.

How many kinds of viral hepatitis are there?

There are four major types of viral hepatitis, all caused by different viruses: hepatitis A, hepatitis B, hepatitis C and delta hepatitis. This "HealthBeat" focuses on hepatitis B.

What is hepatitis B and how is it transmitted?

Infection with the hepatitis B virus (HBV) may be without any symptoms, mild or severe. Among adults infected by HBV, 90 percent to 94 percent recover completely and have no long term effects. Six percent to 10 percent will become chronic carriers of HBV and will be at risk of developing cirrhosis or liver cancer. Over time, hepatitis B can destroy the liver (cirrhosis) and can cause liver cancer.

HBV is spread by direct contact with blood or other body fluids of infected people. (Delta hepatitis is spread the same ways as HBV; however, it is a defective hepatitis virus that can only be acquired in the presence of hepatitis B virus.)

Each year, an estimated 200,000 to 300,000 persons in the United States become infected with HBV. In Illinois, there were 591 cases of HBV reported in 1990; this declined to 315 reported cases in 1994.

Since the disease is not easily spread, persons with HBV do not pass the virus to others through casual contact, such as shaking hands or sharing a work space or

bathroom facility. HBV is most commonly transmitted by sharing drug needles, by engaging in high-risk sexual behavior (especially anal sex), from a mother to her baby during childbirth and in the health-care setting.

What are the symptoms of hepatitis B?

Many people infected with viral hepatitis have no symptoms. For example, about one-third of people infected with HBV have a completely "silent" disease. When symptoms are present, they may be mild or severe. The most common early symptoms are mild fever, headache, muscle aches, fatigue, loss of appetite, nausea, vomiting and diarrhea. Later symptoms may include dark coffee-colored, rather than dark yellow, urine, clay-colored stools, abdominal pain, and yellowing of the skin and whites of the eyes (jaundice).

About 15 percent to 20 percent of patients develop short-term arthritis-like problems. Another one-third of those with hepatitis B develop only mild flu-like symptoms without jaundice. Very severe hepatitis B is rare, but it is life-threatening. Signs and symptoms, which require immediate medical attention, include prolonged blood clotting time, personality changes and agitated behavior.

Can people with no symptoms pass hepatitis B to others?

Some people infected with HBV become chronic carriers of the virus, although they may have no symptoms. There are an estimated 1.5 million HBV carriers in the United States and 300 million carriers worldwide. Children, when exposed to HBV, are at greatest risk of becoming carriers. Up to 90 percent of babies who become infected at birth with HBV, and up to half of youngsters who are infected before 5 years of age, become chronic carriers.

How is hepatitis B diagnosed?

Several blood tests can detect signs of HBV even before symptoms develop. These tests measure liver function and identify HBV antigens (certain portions of the hepatitis B virus) or antibodies (proteins produced by the body in response to the virus) in the blood.

How is hepatitis B treated?

There are no specific treatments for the acute symptoms of viral hepatitis B. Doctors recommend bed rest, preventing dehydration, a healthy diet and avoidance of alcoholic beverages.

A synthetic form of the protein interferon alpha is used to treat people with chronic hepatitis B. The drug improves liver function in some people with hepatitis and diminishes symptoms, although it may cause side effects such as headache, fever and other flu-like symptoms.

Most patients with mild to severe acute hepatitis begin to feel better in two to three weeks and recover completely within four to eight weeks. People with HBV infection who also become infected with the hepatitis C virus at the same time may be at particular risk for developing severe, life-threatening hepatitis.

Many chronic carriers remain symptom free or develop only a mild condition, chronic persistent hepatitis. However, approximately 25 percent go on to develop the most serious complications of viral hepatitis: cirrhosis of the liver, liver cancer and immune system disorders.

How can hepatitis B be prevented?

The most effective means of preventing hepatitis B virus infection is to avoid contact with the blood and body fluids, including semen and vaginal secretions, of infected individuals. People who have hepatitis B virus infection should

- Avoid sharing items that could infect others, such as razors or toothbrushes.
- Protect sex partners from exposure to semen, vaginal fluids or blood through the proper use of latex condoms.

There are several vaccines available to prevent hepatitis B. Vaccination should be considered by people at high risk of infection: male homosexuals and heterosexuals with multiple partners, people who receive hemodialysis or blood products, household and sexual contacts of HBV carriers, and users of street drugs who share needles. Many health care and laboratory workers who handle blood and other body fluids also are vaccinated. People who come into direct contact with the blood or body fluids of an HBV carrier may receive one or more injections of hepatitis B immune globulin, sometimes in combination with hepatitis B vaccine. Immune globulin offers temporary protection, while the vaccine provides long-lasting immunity.

In an effort to eliminate chronic carriers of HBV, the U.S. Centers for Disease Control and Prevention (CDC) recommends that all newborn babies be vaccinated against the hepatitis B virus. The CDC and other groups have recommended that pregnant women be screened for hepatitis B as part of routine prenatal care. If the mother is infected, her baby can be given hepatitis B immune globulin and vaccine immediately after birth.

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Hepatitis C

What is hepatitis?

Hepatitis is an inflammation of the liver caused by certain viruses and other factors, such as alcohol abuse, some medications and trauma. Its various forms affect millions of Americans. Although many cases of hepatitis are not a serious threat to health, infection with certain hepatitis viruses can become chronic (long-lasting) and can sometimes lead to liver failure and death.

How many kinds of viral hepatitis are there?

There are four major types of viral hepatitis, all caused by different viruses: hepatitis A, hepatitis B, hepatitis C and delta hepatitis. This "HealthBeat" focuses on hepatitis C.

What is hepatitis C and how is it transmitted?

This type of hepatitis is caused by the hepatitis C virus (HCV), which infects approximately 36,000 persons each year in the United States. Although generally a mild condition, hepatitis C is much more likely than hepatitis B to lead to chronic liver disease. People infected with HCV can become chronic carriers of the virus, although they may have no symptoms. It is estimated that there are approximately 4 million HCV chronic carriers. Around 70 percent of all HCV carriers will develop chronic liver disease, regardless of whether they have symptoms.

HCV is spread primarily by exposure to human blood. Approximately 80 percent of persons who share needles to inject drugs are infected with HCV. Persons who receive blood transfusions face some risk, although it is very low since testing of donated blood for HCV began in 1990. Hepatitis C has been transmitted between sex partners and among household members, but the degree of risk is believed to be low. HCV is not spread by food or water or casual contact, such as shaking hands or sharing a work space or bathroom facility.

What are the symptoms of hepatitis C?

Many people infected with hepatitis C have no symptoms. When symptoms are present, they can range from mild to severe. The most common early symptoms are mild fever, headache, muscle aches, fatigue, loss of appetite, nausea, vomiting and diarrhea. Later symptoms may include dark coffee-colored rather than dark yellow urine, clay-colored stools, abdominal pain, and yellowing of the skin and/or whites of the eyes (jaundice).

Who should be tested for hepatitis C?

It is recommended that the following persons be routinely tested for hepatitis C:

- Persons who have ever (even if only one time) injected illegal drugs
- Persons who received blood products for treatment of bleeding problems prior to 1987 (those who received clotting factor concentrates produced before 1987)
- Persons who were ever on chronic renal dialysis
- Persons with persistently elevated liver function tests
- Persons who were notified they received a blood transfusion from a donor who later tested positive for HCV
- Persons who received a blood transfusion before July 1992
- Persons who receive an organ transplant before July 1992
- Health care, emergency medical and public safety workers who received an accidental needle stick or had mucous membrane exposure to HCV-positive blood
- Children born to HCV-positive mothers

Can people with no symptoms pass hepatitis C to others?

Yes. Infected persons, regardless of whether they have symptoms or not, can transmit their infection to others.

How is hepatitis C diagnosed?

A test is now available to identify antibody (proteins produced by the immune system in response to the virus) to HCV, which is present in approximately 50 percent of persons with early hepatitis C infections and in almost all with chronic hepatitis C infections. There are other tests that can confirm a positive antibody test result and tell the physician if the infection is causing damage to the liver. A liver biopsy sometimes is needed to enable the physician to determine the degree of damage to the liver.

How is hepatitis C treated?

There are no specific treatments for the symptoms of acute hepatitis C. Doctors recommend bed rest, preventing dehydration, a healthy diet and avoidance of alcoholic beverages. Most patients with mild to severe hepatitis C begin to feel better in two to three weeks and recover completely from their symptoms within four to eight weeks.

Synthetic forms of the protein interferon are used to treat some people with chronic hepatitis C. This can improve liver function in some people with hepatitis and diminishes symptoms, although it may cause side effects such as headache, fever and other flu-like symptoms. Sometimes this drug is used in combination with another drug, ribavirin. Treatment is effective in 10 percent to 40 percent of patients.

Many chronic carriers remain symptom free or develop only a mild condition, chronic persistent hepatitis. However, approximately 50 percent go on to develop the most serious complications of viral hepatitis: cirrhosis of the liver and liver cancer.

How can hepatitis C be prevented?

The most effective means of preventing hepatitis C is to avoid contact with human blood. Do not inject illegal drugs and do not share toothbrushes, razors or other items that might have blood on them.

No vaccines yet exist for HCV.

What do I do if I test positive for HCV?

You should have a medical evaluation to help determine that the HCV test result is not a false positive. Your physician may repeat the test or may see you regularly for a few months to test blood samples for liver enzymes and do a follow-up test again in six months. Persons who have hepatitis C should be considered potentially infectious. They should not donate blood, body organs, other tissue, or semen. Toothbrushes, razors or other items that could become contaminated with blood should not be shared. Cuts, open sores or other breaks in the skin should be covered to prevent the risk of blood exposures to others. When seeking medical or dental care, persons with HCV infections should inform those responsible for their care of their HCV status so that they can be appropriately evaluated.

Do not use alcohol, see your physician, do not take new over-the-counter drugs without first talking to your physician, and get vaccinated against hepatitis A and hepatitis B.

Although sexual transmission has occurred, presently there is little reported evidence that chronically infected persons infect long-term sex partners in mutually monogamous relationships. Current information suggests there is no need in changing current sexual practices for a person with a steady sexual partner. Persons with HCV infection who have multiple sexual partners should reduce their number of sexual partners and inform prospective sexual partners so that appropriate precautions (latex condoms) can be used.

Approximately 5 percent of HCV-positive women transmit their infection to their infants (this rate is higher if the mother is also infected with HIV). HCV-positive mothers can breastfeed their babies as long as their nipples are not cracked or bleeding.

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HERPES SIMPLEX VIRUS

(cold sores, genital herpes)

What is herpes simplex?

Herpes simplex is a virus that can cause a variety of infections. In children, the most commonly seen infection caused by this virus is oral herpes or cold sores. Infection with this virus results in blister-like sores in the mouth and around the lips and on tissues that are in contact with the mouth such as thumbs and fingers. Herpes simplex infection can also occur in the external genitalia, vagina or other body area such as the torso, arms or legs.

What are the symptoms of herpes simplex infection?

Symptoms include painful and sometimes itchy small, fluid-filled blisters in the mouth, gums and lips or other affected body area. The blisters eventually form a scab or crust over. Additional symptoms may include fever, malaise and tender or swollen lymph glands.

How is herpes simplex spread?

Direct contact with the lesions or the saliva or genital secretions of an infected person is the means by which this virus is spread. A person may shed the virus for several weeks following infection. Additionally, the virus may be shed by people with no signs or symptoms. After contact with the virus, it can take 2-12 days before symptoms appear.

How can transmission of herpes simplex virus be prevented/ limited?

Practice careful and frequent hand washing to help minimize transmission from both symptomatic and asymptomatic infected persons. Do not share food, drinks, straws, water bottles or other eating utensils, towels or clothing and avoid direct contact with the lesions. Do not allow children to share toys that can be put in their mouths. Mouthed objects should be removed from the play area and sanitized.

Exclusion of orally infected individuals is only necessary when the infected individual does not have control of drooling and exposure to the saliva by other individuals cannot be avoided. Individuals should be excluded from contact sports such as wrestling if lesions are present on the body (outside of the genital area) and the areas cannot be covered. Exclusion should continue until the lesions are dry and scabbed.



IMPETIGO

What Is Impetigo?

Impetigo is an infection of the top layers of the skin caused by Staphylococcal or Streptococcal bacteria. This infection is common among children and usually occurs when the bacteria get into an existing cut or insect bite.

What Are The Symptoms of Impetigo?

Impetigo is usually found on the face around the nose and mouth but may be anywhere on the body. Impetigo usually starts as small red pimples or fluid filled blisters that eventually break. The blisters then appear as yellow, crusty, or weeping patches on the skin. Itching is common.

How Is Impetigo Spread?

The bacteria that cause impetigo are spread from person to person by either direct contact with the skin lesions of an infected person or indirect contact with surfaces contaminated with the drainage from skin lesions.

The time between exposure to impetigo and development of symptoms (incubation period) is usually 1-3 days.

How Is Impetigo Treated?

The affected area should first be cleaned with soap and water. Usually it is then recommended to apply an antibiotic cream/ointment. Sometimes an oral antibiotic is prescribed by the doctor.

How Can The Spread of Impetigo Be Prevented/Limited?

A child with possible impetigo should be excluded from school/child care center and evaluated by a doctor for diagnosis and treatment. A child with impetigo should be excluded for 24 hours after starting treatment. Frequent handwashing and avoiding contact with skin lesions will minimize transmission. Additionally towels, bedding and clothing should not be shared. Environmental surfaces and toys should be sanitized on a routine basis.

It is recommended to trim the nails of an infected person to reduce the injury to the infected area while scratching and to prevent subsequent transmission to other parts of the body. If possible the affected area should be covered with a loose bandage. In the event of an outbreak (more than one case in a group) consult the health department as the problem could involve antibiotic resistant staphylococcal bacteria.



INFLUENZA

What is the flu?

Influenza, commonly called the flu, is a respiratory illness caused by a specific kind of virus. Compared to most viruses that cause upper respiratory illnesses (e.g., the common cold), influenza viruses usually cause a more severe illness that is more likely to lead to serious medical complications, such as pneumonia.

What kinds of viruses cause influenza?

Influenza viruses are divided into three types: A, B and C. Types A and B are responsible for the outbreaks of respiratory illness that occur almost every year and often are associated with increased rates of hospitalization and death. Currently there are three different influenza strains in worldwide circulation: two type A viruses and one type B. (Type C differs because it usually causes either a very mild respiratory illness or no symptoms at all.) However, influenza viruses continually change over time (usually by mutation). This enables a virus to evade a person's immune system, making people susceptible to influenza infection throughout their lives.

Occasionally, type A viruses can change abruptly and a new subtype will suddenly emerge. When this occurs, large numbers of people--sometimes an entire population--have no antibody protection. This results in a worldwide epidemic, or pandemic. There have been three influenza pandemics this century. In 1918-19, the Spanish flu caused approximately 500,000 deaths in the United States and 20 million worldwide. The Asian flu resulted in 70,000 U.S. deaths in 1957-58, and the Hong Kong flu of 1968-69 claimed 34,000 lives in the United States. However, these are rare events.

When is influenza most common?

The influenza season, when the illness is most common, usually occurs during the colder months of the year: late fall, winter and early spring.

What are the symptoms of influenza?

Typical symptoms include fever--often with chills and headache, muscle aches and fatigue. Respiratory symptoms are a cough, sore throat, and a runny or stuffy nose. Although nausea, vomiting and diarrhea can sometimes accompany an influenza infection, especially in children, gastrointestinal symptoms are rarely prominent. The term "stomach flu" is incorrectly used sometimes to describe gastrointestinal illnesses caused by other microorganisms.

How many people are affected by influenza each season?

During most years, between 10 percent and 20 percent of the population are infected with influenza viruses. Children get influenza more often than healthy adults. Older adults and people of any age with chronic illnesses are more apt to suffer from serious medical complications from influenza. In an average year, approximately 36,000 Americans die from influenza and its complications and many more are hospitalized.

What can be done to prevent influenza?

The best prevention is vaccination against flu. Because influenza viruses change frequently and because protection from the vaccine decreases with time, people should get vaccinated every year. The amount of vaccine manufactured in the United States has increased substantially in recent years. During the 2003-2004 influenza season, there were 88 million doses of vaccine available. While most people get shots against influenza, there is a nasal spray vaccine product for healthy persons between the ages for five and 49.

There are several antiviral drugs available that are effective in preventing and treating influenza. These drugs are available by prescription and are prescribed specifically for type A or B infections. However, they must be taken before or within 48 hours of onset of illness.

Who should get an influenza shot?

Anyone who wants to reduce his or her risk of getting influenza should get an annual flu vaccination. Vaccination is particularly important, though, for certain people at risk of complications from influenza:

- persons 65 years of age and older, even if they are otherwise in good health;
- residents of nursing homes and long-term care facilities;
- persons of all ages who have chronic heart or lung conditions, including asthma;
- persons with diabetes, renal disease, severe anemia or suppressed immune systems;

- children who are on aspirin therapy; and
- health care providers or household members of any of the above groups.

Are there any good reasons not to get a flu shot?

Persons who have a severe allergy to eggs or who have had a previous allergic reaction to influenza vaccine should not get a flu shot without consulting a physician.

Many people avoid getting vaccinated for the wrong reasons:

- **The vaccine causes unpleasant side effects or may even cause the flu.** Influenza vaccine causes no side effects in most people. Less than one-third of those who get flu shots have some soreness at the vaccination site and about 5 percent to 10 percent experience mild side effects such as headache or low-grade fever for about a day after getting the shot.
- **Flu shots are not very effective.** Overall vaccine effectiveness varies from year to year, depending on how similar the influenza virus strains included in the vaccine are to those that are circulating during the flu season. Because vaccine strains are chosen nine to 10 months before the flu season and because influenza viruses mutate over time, the circulating strains can change between the time the vaccine strains are chosen and the next flu season. These changes in the virus(es) sometimes reduce the ability of the vaccine-induced antibodies to inhibit the newly mutated virus, thereby reducing the vaccine's effectiveness. Vaccine effectiveness also varies from one person to another. Studies of healthy young adults have shown influenza vaccine to be 70 percent to 90 percent effective in preventing illness. In the elderly and those with chronic medical conditions, the vaccine is often less effective in preventing influenza than in reducing the severity of the illness and the risk of serious complications and death. Research has shown the vaccine to reduce hospitalization by about 70 percent and death by about 85 percent in independent seniors. Among nursing home residents, vaccine can reduce the risk of hospitalization by about 50 percent, the risk of pneumonia by about 60 percent and the risk of death by 75 percent to 80 percent.
- **Flu shots are expensive for those on fixed incomes.** Since May 1993 Medicare Part B has paid for flu shots for the elderly, the country's largest high-risk group. Almost half of eligible Medicare part B persons in Illinois still do not receive vaccine.

When is the best time to get a flu shot?

In the United States, influenza activity is typically very low until December; peak activity most often occurs between January and March. Influenza vaccine should be

administered between September and mid-November. It takes about one to two weeks after vaccination for antibodies against influenza to develop and provide protection.

What else can be done to avoid getting the flu?

- Wash hands frequently with soap and warm water.
- Cover your nose and mouth when you cough and sneeze, preferably with a facial tissue or your arm, not your hands.
- Avoid close contact with people who are sick.
- When you are sick, keep your distance from others to protect them from getting sick. Stay home from work or school until you recover.
- Contact your medical provider if you are experiencing severe symptoms that you believe require medical attention.
- Do not share things that go into the mouth, such as drinking cups, straws, etc.
- Frequently clean commonly touched surfaces if someone in your house has a cold or the flu.
- Avoid touching your eyes, nose or mouth while in public as these areas act as portals for bacteria and viruses to enter your body.

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Lyme Disease

What is Lyme disease?

Lyme disease is a bacterial disease transmitted by infected ticks. It was first recognized in the United States in 1975 after a mysterious outbreak of arthritis near Old Lyme, Connecticut. Since then, reports of Lyme disease have increased dramatically, and the disease has become an important public health problem.

How does a person get Lyme disease?

Lyme disease is transmitted by the bite of an infected deer tick, which also is known as the black-legged tick. (Not all ticks carry the bacterium, and a bite does not always result in the development of Lyme disease. However, since it is impossible to tell by sight which ticks are infected, it is important to avoid tick bites whenever possible.) Immature deer ticks can be very small, about the size of the head of a pin; adult deer ticks are slightly larger. Both can be infected with and transmit Lyme disease. Deer ticks acquire the bacteria by feeding primarily on small mammals infected with the bacteria, particularly the white-footed mouse. (Domestic animals can become infected with the Lyme disease bacteria and some may develop arthritis, e.g., dogs, cattle and horses.)

(Click on image for a larger view)



Image source: Centers for Disease Control and Prevention

Deer ticks infected with the bacteria that cause Lyme disease have been found in Illinois. Areas in the United States where deer ticks are most frequently infected with Lyme disease are the northeastern United States (from Massachusetts to Maryland), northern California, and north central states, especially Minnesota and Wisconsin. However, Lyme disease has been reported in almost all states in the United States as well as in many countries throughout the world.

What are the symptoms of Lyme disease?

Signs and symptoms can vary greatly from one person to another. Symptoms also vary with the length of time a person has been infected. A ring-like red rash occurs in about 70 - 80 percent of cases and begins three days to 32 days after the bite of an infected tick. The red rash at the bite site is circular and grows larger over a few days or a few weeks. In the center, the rash usually clears and has been described as resembling a bull's-eye. Generally, the rash is not painful. Often this rash is accompanied by one or more nonspecific symptoms: fatigue, chills and fever, headache, swollen lymph nodes, and joint and muscle pain. An allergic reaction to tick saliva can often occur at the site of the tick bite. Such allergic reactions, which are not a sign of Lyme disease, usually occur within 72 hours after the tick bite, usually do not expand beyond 2 inches in diameter like the Lyme rash and disappear within a few days.

Some people are not diagnosed with Lyme disease in its initial stages because early symptoms are similar to those of more common diseases, such as a flu-like illness without a cough or mononucleosis, and many infected persons do not recall a tick bite. Day, weeks, months or years later other symptoms can develop if the disease is not diagnosed and treated. These include fever, severe headache and stiff neck, certain heart irregularities, temporary paralysis of facial muscles, pain with numbness or weakness in the arms or legs, loss of concentration or memory problems, and, most commonly, Lyme arthritis.

When should I seek a physician's care after a tick bite?

If you experience a rash or any unexplained illness accompanied by fever following a tick bite, you should consult your physician and explain that you were bitten by a tick.

Can Lyme disease be treated?

Yes. Treatment of Lyme disease consists of administration of the appropriate antibiotics. Oral antibiotics are usually used; however, intravenous antibiotics may be used if the disease has gone untreated or is difficult to control. The selection and use of an antibiotic varies depending on the patient's symptoms and whether he or she is treated early in the infection.

How do I avoid getting bitten by a tick?

The best way to protect yourself against Lyme disease and other tickborne illnesses is to avoid tick bites. This includes avoiding tick-infested areas. However, if you live in or visit wooded areas or areas with tall grass and weeds, follow these precautions

against Lyme disease and other tickborne diseases like Rocky Mountain spotted fever, ehrlichiosis and tularemia:

- Wear light-colored, protective clothing—long-sleeved shirts, long trousers, boots or sturdy shoes, and a head covering. Tuck trouser cuffs in socks. Tape the area where pants and socks meet so ticks cannot crawl under clothing.
- Apply insect repellent containing 10 percent to 30 percent DEET primarily to clothes. Apply sparingly to exposed skin (do not spray directly to the face; spray the insect repellent onto hands and then apply to face. Avoid sensitive areas like the eyes, mouth and nasal membranes). Be sure to wash treated skin after coming indoors. Use repellents containing permethrin to treat clothes (especially pants, socks and shoes)—but not skin. Always follow label directions; do not misuse or overuse insect repellents. Always supervise children in the use of insect repellents.
- Walk in the center of trails so weeds do not brush against you.
- Check yourself, children and other family members every two to three hours for ticks. Most ticks seldom attach quickly and rarely transmit a tickborne disease until they have been attached for four or more hours. If your pets spend time outdoors, regularly check them for ticks, too.
- Remove any tick promptly. Do not burn the tick with a match or cover it with petroleum jelly. Do not use bare hands. The best way to remove a tick is to grasp it with tweezers as close to the skin as possible and gently, but firmly, pull it straight out. Do not twist or jerk the tick. If tweezers are not available, grasp the tick with a piece of tissue or cloth or whatever can be used as a barrier between your fingers and the tick. If the mouthparts do break off, do not become alarmed; once the mouthparts are removed from the rest of the tick, the tick can no longer transmit the Lyme disease bacteria. If you want to have an intact tick identified, put it in a small vial of rubbing alcohol and contact your local health department for assistance.
- Wash the bite area and your hands thoroughly with soap and water, and apply an antiseptic to the bite site.
- Make sure the property around your home is unattractive to ticks. Keep your grass mowed and keep weeds cut.

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MEASLES

What is measles?

Measles is a serious, highly contagious disease caused by a virus. The virus is spread easily through the air when an infected person coughs or sneezes or by direct contact with infected nose or throat secretions.

How common is measles?

Prior to widespread immunization, measles was common in childhood. In fact, almost everyone born before 1957 has already had measles. Currently, measles usually occurs in preschool-age children who have not had their measles vaccine or in school-age children and young adults who have had only one shot of measles vaccine. Measles occurs primarily in the late winter and early spring.

With effective childhood immunization programs, measles cases in the United States, Canada and other countries have dropped by 99 percent. However, there was a marked increase in measles cases in the United States during 1989-1991. The majority of these cases occurred in non-immunized children, including almost 25 percent of cases in babies younger than 15 months of age. Non-immunized inner-city preschool children were a major contributing factor in this epidemic.

What are the symptoms of measles?

Symptoms of measles include a rash that starts on the face and neck and then spreads, a high fever, runny nose, cough and red, watery eyes. The fever starts about 10 days (range seven to 18 days) after exposure. The rash appears about 14 days after exposure. Infants and adults usually are sicker than children and teenagers.

In the United States, death from measles has occurred at a rate of about two to three per 1,000 cases in recent years. These deaths occur mainly in children younger than 5 years of age, primarily from pneumonia and occasionally from encephalitis. Other complications include ear problems, diarrhea and brain damage.

Should a person with measles stay home?

Measles is very contagious, so stay away from work, school and social activities from the time when symptoms are first noticed until five days after the rash appears.

What is the treatment for measles?

Treatment includes bed rest, lots of fluids and medicine for fever and headache. Antibiotics do not help – either to cure measles or to prevent it. There are no anti-viral drugs for treating measles.

Can measles be prevented?

Measles can be prevented with measles vaccine. The vaccine is recommended for children at 12 months of age. This shot is given as measles, mumps, rubella (MMR) vaccine. A second shot of measles vaccine, usually MMR, is now required in Illinois for all children kindergarten through 12th grade. Anyone born after January 15, 1957, who has not had at least one dose of measles vaccine after 12 months of age or who has not had the measles should be immunized. Persons working in health care settings should receive two doses of measles vaccine (MMR) unless they have had the disease and, therefore, are immune. Women should not get the vaccine if they are already pregnant or if they plan to get pregnant within three months after getting the vaccine.

Acquired immunity after illness is permanent.

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Meningitis

What is meningitis?

Meningitis is an inflammation of the membranes that cover the brain and spinal cord. It can be caused by a number of infectious agents including viruses and bacteria. The type of meningitis and its cause can only be determined by a physician using laboratory test results.

Viral meningitis (also called aseptic meningitis) is the most common type of meningitis and is less severe than bacterial meningitis. In Illinois, an average of 600 cases of aseptic meningitis are reported annually, with most occurring in late summer and early autumn. The majority of cases of aseptic meningitis are due to viruses called enteroviruses that can infect the stomach and small intestine. A small number of cases are caused by different viruses, which can be transmitted by infected mosquitos; these are called arboviruses. Fatal cases of viral meningitis are rare and complete recovery is the rule.

Bacterial meningitis is often more severe than aseptic meningitis, particularly in infants and the elderly. Before antibiotics were widely used, 70 percent or more of bacterial meningitis cases were fatal; with antibiotic treatment, the fatality rate has dropped to 15 percent or less. Bacterial meningitis is most common in the winter and spring. Three bacteria cause the majority of cases: *Haemophilus influenzae*, *Neisseria meningitidis* or *Streptococcus pneumoniae*.

- *Haemophilus meningitis* is most frequently caused by *Haemophilus influenzae* type b, also known as Hib. Before effective vaccines became available and widely used, Hib was the most frequent cause of bacterial meningitis in children 5 years of age and younger. In Illinois, an average of 230 cases were reported annually. However, from 1985 to 1996, there was an 82 percent reduction of *Haemophilus influenzae meningitis*. Currently, there is an average of 50 cases per year; the fatality rate is about 5 percent. This large decrease is believed to be due to routine use of Hib vaccines.

- Meningococcal meningitis, caused by *Neisseria meningitidis*, is primarily a disease of young children, with the incidence of cases declining in those older than 1 year of age. The disease is most common during winter and spring. In some persons, the bacteria can cause a severe blood infection called meningococemia. Illinois averages 115 cases of meningococcal disease annually; approximately 10 percent are fatal.
- Pneumococcal meningitis, caused by *Streptococcus pneumoniae* (pneumococci), generally strikes infants, the elderly and individuals with certain chronic medical conditions. An average of 100 cases occurs in Illinois each year. In general, 5 percent to 10 percent of cases are fatal; however, in persons with significant underlying disease the fatality rate can be 20 percent to 40 percent.

How is it spread?

Meningitis is not highly contagious. **Both viral meningitis and bacterial meningitis can be spread through direct contact with nose and throat secretions.** Healthy persons, who have no signs of illness, can have these bacteria in their nose or throat and spread them to others. Sharing a glass, cup or eating utensil, coughing or sneezing into the face of another person, or sharing a cigarette are examples of how contact with another person's respiratory secretions might occur.

Viral meningitis can be transmitted by fecal contamination (in addition to respiratory secretions) when an infected person sheds or excretes virus in his/her stool.

What are the symptoms of meningitis?

Meningitis can produce mild symptoms — such as headache, low-grade fever and tiredness lasting two to three days — in some patients. In other patients, the symptoms can be severe and begin suddenly with fever, headache and stiff neck accompanied by some combination of other symptoms: decreased appetite, nausea, vomiting, sensitivity to bright light, confusion and sleepiness.

In newborns and infants, the classic findings of fever, headache and stiff neck may or may not be present. An infant may have no other symptoms than being listless, irritable and sleepy, having little interest in feeding and possibly vomiting. A purplish red rash may appear with meningococcal meningitis.

How is meningitis diagnosed?

Cerebrospinal fluid can be tested to determine the type of meningitis causing the symptoms. Such identification is important in selecting effective antibiotics for treating bacterial meningitis cases.

How is meningitis treated?

Treatment for persons who have viral (or aseptic) meningitis usually consists of reducing fever and making sure they take plenty of liquids. All three forms of bacterial meningitis, however, require the immediate medical attention of a physician and can be treated with a number of antibiotics. Appropriate antibiotic treatment of the most common types of bacterial meningitis should reduce the fatality rate to approximately 10 percent though the fatality rate is higher in infants, the elderly and persons with certain underlying medical conditions.

How is meningitis prevented?

Transmission of viral and bacterial meningitis can be prevented by raising the level of hygiene among persons at risk of infection and among those who might be spreading the disease. Of primary importance is proper handwashing technique. Wet hands with soap and warm water. Rub hands for 10 to 20 seconds, making sure you clean under fingernails. Rinse under warm running water. Dry hands on a paper towel or your own clean towel. When paper towels are available, use a paper towel to turn off the water faucet and throw the towel away.

Persons should cover their noses and mouths when sneezing or coughing and discard used tissues promptly. Wash hands thoroughly following exposure to respiratory secretions, including handling of soiled tissues and handkerchiefs. Persons should not share straws, cups, glasses, water bottles used during sports or recreation, eating utensils, cigarettes, etc. Eating and drinking utensils should not be shared and should be used by others only after they have been washed. Discouraging persons from kissing an infant, toddler or child on the mouth also can help prevent the spread of illness.

Preventing viral meningitis also requires proper handwashing to remove fecal contamination after toileting, changing diapers, assisting toddlers with toileting and so forth.

For meningococcal meningitis, household contacts and others who have had close personal contact with infected persons are recommended to receive a preventive antibiotic, often rifampin, which kills bacteria living in nose and throat secretions. For contacts to certain cases of *Haemophilus influenzae* meningitis, rifampin also may be recommended. Illness seldom occurs in close contacts to *Streptococcus*

pneumoniae meningitis. Since the recommendations for use of rifampin and other preventive antibiotics vary according to the specific situation, it is best to consult with a physician or local health department for recommendations. Even if rifampin or another preventive antibiotic is taken, close contacts should be observed for any signs of disease and should be promptly evaluated by a physician if symptoms occur.

The American Academy of Pediatrics and the Advisory Committee on Immunizations Practices both recommend vaccination against Hib for all infants beginning at 2 months of age. *Neisseria meningitidis* can attack persons of any age but it is relatively uncommon in the United States. Meningococcal vaccine is generally recommended only for persons traveling to other countries where epidemics are in progress, for military recruits and, rarely, in other circumstances. A vaccine against the pneumococcus is recommended for certain children and adults with chronic or specified medical conditions and for persons 65 years of age or older.

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Meningococcal Disease

What is meningococcal disease?

Meningococcal disease is a bacterial infection. It occurs commonly in two forms: inflammation of the membranes covering the brain and spinal cord (meningococcal meningitis) or a severe blood infection (meningococemia).

The bacteria that causes meningococcal disease, *Neisseria meningitidis*, first infects the mucous membranes of the nose and throat, usually without any symptoms. In fact, 5 percent to 10 percent of the population may carry the bacteria at any given time without becoming ill. In a small proportion of infected persons, the bacteria passes through the mucous membrane and reaches the blood stream, causing meningococcal meningitis or meningococemia. When illness occurs, it does so within four days of exposure, but can develop as long as 10 days later. The disease is most common during winter and spring.

How is meningococcal disease spread?

Meningococcal infection is not highly contagious. Transmission from person to person occurs through direct contact with nose and throat secretions. An infected person can transmit the disease by coughing or sneezing directly into the face of others, kissing a person on the mouth, or sharing a glass or cup.

Because it is possible to harbor the bacteria in the nose and throat yet not develop symptoms, healthy persons as well as persons who are ill may spread the bacteria to others. The bacteria is not transmitted by casual contact, such as sitting in the same room as an infected person or passing an infected person in a hallway or on a sidewalk.

What are the symptoms of meningococcal disease?

Meningococcal disease usually starts with a sudden onset of fever and headache. A stiff neck may be present and later a red rash often develops. Nausea and vomiting

also can occur but alone are not sufficient to suggest meningococcal disease. In newborns and small infants, the classic findings of fever, headache and neck stiffness may be absent or difficult to detect, and the infant may show only extreme listlessness, irritability, poor feeding and sometimes vomiting. In severe cases, as the disease progresses, both infants and older patients may have seizures and decreased alertness advancing to coma.

Who is most susceptible to meningococcal disease?

Meningococcal disease is primarily a disease of young children. About 50 percent of cases occur in infants and children younger than 4 years of age. Adults at increased risk of meningococcal disease include those who have recently been brought together as a group and housed under crowded living conditions, such as in barracks or institutions. College freshmen, particularly those living in dormitories, are at modestly increased risk. Household contacts of cases, who are at greatest risk of meningococcal disease, have only about three to 10 chances in 1,000 of developing the disease. Most persons are not susceptible to meningococcal disease because they have had prior exposure and have become immune.

In Illinois, the five-year median (2002-2006) for meningococcal disease is approximately 46 cases a year.

Fewer than 10 percent of all meningococcal disease cases are fatal. Death occurs more often in meningococemia (as high as 17 percent) than in meningococcal meningitis (approximately 7 percent).

How is meningococcal disease treated?

Cases of meningococcal disease require immediate medical treatment by a physician. The diagnosis is usually made by growing bacteria from a sample of blood or spinal fluid. The spinal fluid is obtained by performing a spinal tap, in which a needle is inserted into an area in the lower back where fluid in the spinal canal is readily accessible. Intravenous penicillin or other antibiotics are used to treat infected persons.

How can meningococcal disease be prevented?

Risk of transmission of meningococcal infection can be reduced by practicing good hygiene. Persons should cover their noses and mouths when sneezing or coughing and discard used tissues promptly. Wash hands thoroughly following exposure to respiratory secretions. To avoid exposure, persons should not share cigarettes, straws,

cups, glasses or eating utensils. Eating and drinking utensils can be used by others only after they have been washed.

It is recommended that household contacts and others who have had close personal contact with infected persons receive a short course of certain antibiotics, which kill bacteria living in throat secretions. Since the recommendations for use of preventive antibiotics vary according to the specific situation, it is best to consult a physician or local health department for advice. Even if an antibiotic is taken, close contacts should be observed and any sign of disease promptly evaluated by a physician.

Meningococcal vaccine is effective on certain types of *Neisseria meningitidis* but is only recommended when there is a high incidence of cases in a limited geographic area and for persons traveling to countries where epidemics are in progress.

It is recommended that health care providers routinely vaccinate persons age 11 to 18 years with meningococcal vaccine to improve vaccination coverage in this age group. College freshmen living in dormitories are at increased risk for meningococcal disease and, if not previously vaccinated, they should be vaccinated before entering college.

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[Questions or Comments](#)



Molluscum Contagiosum

What is molluscum contagiosum?

Molluscum contagiosum is a common skin disease that is caused by a virus. The disease is generally mild and should not be a reason for concern or worry.

Molluscum infection causes small white, pink, or flesh-colored bumps or growths with a dimple or pit in the center. The bumps are usually smooth and firm and can appear anywhere on the body. They may become sore, red, and swollen but are usually painless. The bumps normally disappear within six months to twelve months without treatment and without leaving scars. In people with weakened immune systems, molluscum growths may grow very large, spread more easily to other parts of the body and may be harder to cure.

How do people get molluscum contagiosum?

People with this skin disease can cause the bumps to spread to different parts of their body. This is called autoinoculation. Such spread can occur by touching or scratching a bump and then touching another part of the body.

The virus can be spread from person to person. This can happen if the growths on one person are touched by another person. It can happen if the virus gets on an object that is touched by other people. Examples of such objects are towels, clothing and toys. Molluscum can also be spread from one person to another by sexual contact. Anyone who develops bumps in the genital area (on or near the penis, vulva, vagina or anus) should see a health care provider. Bumps in these areas sometimes mean that molluscum or some other disease was spread through sexual contact.

How to Prevent the Spread of Molluscum

Wash Your Hands

There *are* ways to prevent the spread of molluscum contagiosum. The best way is to follow good hygiene (cleanliness) habits. Keeping your hands clean is the best way to avoid molluscum infection, as well as many other infections. Handwashing removes germs that may have been picked up from other people or from surfaces that have germs on them. See the Clean Hands Saves Lives site at <http://www.cdc.gov/cleanhands>.

Do not Scratch or Pick at Molluscum Bumps

It is important not to touch, pick or scratch skin that has bumps or blisters. Picking and scratching can spread the virus to other parts of the body and makes it easier to spread the disease to other people, too.

Keep Molluscum Bumps Covered

It is important to keep the area with molluscum growths clean and covered with clothing or a bandage so that others do not touch the bumps and become infected with molluscum. Do remember to keep the affected skin clean and dry.

However, when there is no risk of others coming into contact with your skin, such as at night when you sleep, uncover the bumps to help keep your skin healthy.

Sports and Activities to Avoid or Be Careful With When You Have Molluscum

To prevent spread of the infection to other people, people with molluscum should not take part in **contact sports** unless all growths can be covered by clothing or bandages. Wrestling, basketball and football are examples of contact sports.

Activities that use **shared gear** should be avoided unless all bumps can be covered. Helmets, baseball gloves and balls are examples of shared gear.

Swimming should be avoided unless all growths can be covered by watertight bandages. Personal items (such as towels, goggles and swimsuits) should not be shared. Other items and equipment (such as kick boards and water toys) should be used only when all bumps are covered by clothing or watertight bandages.

Other Ways to Avoid Sharing Your Infection

- Other personal items that may spread the virus should not be shared by people with molluscum. Some examples of personal items are unwashed clothes, hair brushes, wrist watches, and bar soap.
- People with molluscum should not shave or have electrolysis performed on body areas that have growths.
- People who have bumps in the genital area (on or near the penis, vulva, vagina or anus) should avoid sexual contact until they have seen a health care provider.

How long does it take before the lesions or bumps appear?

The period of time averages two months to three months and may range from one week to six months.

How Long are You Infectious?

This is not known for certain, but researchers assume that if the virus is present, it may be transmitted.

What are the symptoms of molluscum contagiosum?

- Lesions are usually present on the thighs, buttocks, groin and lower abdomen of adults, and may occasionally appear on the external genital and anal region.
- Children typically develop lesions on the face, trunk, legs and arms.
- The lesions may begin as small bumps which can develop over a period of several weeks into larger sores/bumps. The lesions can be flesh colored, white or pink. They can cause itching or tenderness in the area, but in most cases the lesions cause few problems. Lesions can last from two weeks to four years -- the average is two years.
- People with AIDS or others with compromised immune systems may develop extensive outbreaks.

How is molluscum contagiosum diagnosed?

Diagnosis is usually made by the characteristic appearance of the lesion. MCV may be diagnosed by collecting a specimen from the lesion, placing it onto a slide and staining with a Gram stain which shows changes in infected cells. Diagnosis may be made by collecting a specimen from the lesion and viewing it under an electron microscope.

How is molluscum contagiosum treated?

Some treatments exist for molluscum that may prevent spread of the infection to other parts of the body and to other people. A health care provider can remove the growths with surgery or laser therapy. A health care provider may prescribe a cream to apply on the bumps or a medicine to take by mouth.

However, treatment is not usually required because the bumps disappear on their own within six months. However, they may not go away completely for up to four years. In addition, not all treatments are successful for all people. For example, it is more difficult to treat persons who have a weak immune system. This includes people who are infected with HIV or who are receiving drugs to treat cancer.

Some molluscum treatments that are advertised on the Internet are not effective and may even be harmful! Therefore, always discuss any therapy with a health care provider before using it.

What about complications from molluscum contagiosum?

In people with HIV infection, molluscum contagiosum is often a progressive disease.

Where can I get more information?

Illinois Department of Public Health

HIV/STD Hotline 800-243-2437 (TTY 800-782-0423)

U.S. Centers for Disease Control and Prevention (CDC) www.cdc.gov/std/

CDC-INFO Hotline (7am-7pm Mon.-Fri. Closed Holidays)

STD information and referrals to STD Clinics

800-CDC-INFO (800-232-4636)

TTY: 888-232-6348

In English, en Español

[CDC National Prevention Information Network](#) (NPIN)

P.O. Box 6003

Rockville, MD 20849-6003

800-458-5231

888-282-7681 Fax

E-mail: info@cdcpin.org

[American Social Health Association](#) (ASHA)

P. O. Box 13827

Research Triangle Park, NC 27709-3827

919-361-8400

www.ashastd.org

May 2013

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MONONUCLEOSIS (Mono)

What is Infectious Mononucleosis?

Mononucleosis or mono is a contagious viral illness caused by the Epstein - Barr virus (EBV). This infection is typically recognized in high school and college students. Most adults have been exposed to EBV by age 18 years and are immune.

What are the Symptoms of Mononucleosis?

Symptoms of mononucleosis include fever, sore throat, swollen lymph glands in the neck and fatigue. Sometimes the spleen becomes enlarged and there is resulting abdominal pain. Symptoms generally resolve in 1-2 months and seldom last for more than 4 months. When symptoms persist for more than 6 months it is frequently referred to as chronic EBV infection. Infants and young children frequently have asymptomatic, unrecognized infection with EBV.

How is Mononucleosis Spread?

Mononucleosis is spread person to person by direct contact with saliva from the mouth and throat of infected persons. Kissing promotes spread among young adults. Young children may become infected by indirect contact with saliva on toys, chairs, etc. Following infection, persons are contagious for prolonged periods of many months to a year or more. The EBV remains dormant in the body for life. Periodically the virus can reactivate and be found in an individual's saliva. This usually occurs without symptoms of illness but still can be a source of infection to others.

The time between exposure to the virus and development of symptoms (incubation period) is 4-6 weeks.

How is Mononucleosis Treated?

Since this is a viral illness there is no specific treatment, or medication to take. Provide ample opportunity for rest and drink plenty of fluids if fever is present. Avoid strenuous exercise-especially contact sports. The doctor may suggest something, such as non-aspirin products, to lessen symptoms. Mononucleosis ordinarily resolves on its own in one or two months.

How Can the Transmission of Mononucleosis Be Prevented/Limited?

Practice careful and frequent hand washing and respiratory hygiene (cover coughs and sneezes and dispose of used tissues) to help minimize transmission from both symptomatic and asymptomatic infected persons. Do not share food, drinks, straws, water bottles or other eating utensils. Do not allow children to share toys that can be put in their mouths. Mouthed objects should be removed from the play area and sanitized.

Exclusion from school is not necessary unless the symptoms limit participation. In this case children should remain excluded until well enough to actively and comfortably participate. Due to the risk of rupture of the spleen, contact sports should be avoided until permission is given by the primary care provider.



MRSA – Methicillin-Resistant *Staphylococcus aureus*

What is *Staphylococcus aureus* (staph)?

- *Staphylococcus aureus* (Staf-lo-coc-cus aw-ree-us) is a bacterium that is commonly carried in the nose and on the skin of healthy people. The bacterium is often referred to as “staph.” It is estimated that 30 percent of the population carries staph on the skin or in the nose. Methicillin or penicillin and cephalosporins are generally used to treat staph infections. About 1 percent of persons have a type of staph resistant to these antibiotics called methicillin- resistant *staph aureus*, which is often referred to as MRSA. Other antibiotics must be used to treat MRSA infections. The drug Vancomycin has proven to be the most effective and reliable in these cases, but it is used intravenously and is not effective against MRSA when taken by mouth. Over the past 20 years, MRSA infections have occurred among patients in hospitals or long-term care facilities. However, MRSA infections are becoming more common in otherwise healthy persons who have not had contact with health care personnel or patients. These infections are known as “community- associated MRSA” or CA-MRSA infections.

What does a staph infection look like?

- Most infections caused by staph are skin infections, such as pimples or boils. Staph skin infections can be red, painful, swollen, or have pus or other drainage. More serious staph infections can also cause pneumonia and infections of the blood and joints.

How is staph spread?

- Staph can be easily spread by contaminated hands that have not been properly washed. It also can be transmitted by contact with secretions from infected skin lesions, wounds and nasal discharge, and objects and surfaces contaminated with staph. MRSA is not spread easier, but it is more difficult to treat.
- Close skin-to-skin contact; openings in the skin, such as abrasions or cuts; contaminated items or surfaces; and crowded living conditions are some factors linked to the spread of staph or MRSA skin infections among athletes,

children, military recruits and correctional facility inmates.

If I have staph, or MRSA skin infection, what can I do to prevent others from getting infected?

- **Cover your wound.** Keep wounds that are draining or have pus covered with clean, dry bandages.
- **Follow your health care provider's instructions.** Pus from infected wounds can contain staph or MRSA. Keeping the infection covered will help prevent the spread to others. Bandages or tape can be thrown away with the regular trash.
- **Wash your hands.** You, your family, and others in close contact should wash hands often with soap and warm water, especially after changing a bandage or touching an infected wound. You can use an alcohol-based hand gel when soap and water are not available.
- **Do not share personal items.** Avoid sharing personal items, such as towels, washcloths, razors, clothing, or uniforms that may have had contact with the infected wound or bandage. Wash soiled sheets, towels, and clothes with water and laundry detergent. Drying clothes in a hot dryer, rather than air-drying, also helps kill bacteria in clothes.
- **Talk to your doctor.** Tell any health care providers who treat you that you have or had a staph or MRSA skin infection.

What to do to prevent staph skin infections

- Keep your hands clean by washing thoroughly with soap and water or using an alcohol-based hand gel.
- Keep cuts and scrapes clean and covered with a bandage until healed.
- Avoid contact with other people's wounds or bandages.
- Avoid sharing personal items such as towels or razors.

Additional recommendations are available for the control of staph or MRSA skin infections when multiple cases occur in a group or school setting. Contact your local public health department or the Illinois Department of Public Health at 217-782-2016 for more information.

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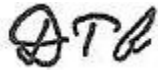
Rod R. Blagojevich, Governor
Damon T. Arnold, M.D., M.P.H., Director

525-535 West Jefferson Street • Springfield, Illinois 62761-0001 • www.idph.state.il.us

MEMORANDUM

Date: January 2, 2009

To: Local Health Department Administrators

From: Damon T. Arnold, M.D., M.P.H., Director 

RE: IDPH Guidance on MRSA and other Staph infections in Schools

Attached you will find updated guidance on MRSA infection in schools. Sample letters to parents and infection control checklists are now included in this IDPH guidance, which also includes information on issues related to policy, infection control, and education/increased awareness.

Please be sure that this guidance is distributed to each public, private and parochial school within your jurisdiction.

For additional questions related to MRSA or other staphylococcal infections in schools, please contact Judy Conway, R.N., CIC, Infection Control Administrator at judith.conway@illinois.gov, or Craig Conover, M.D., Medical Director, Office of Health Protection, at craig.conover@illinois.gov.

cc: Dr. Christopher Koch, State Superintendent
Craig Conover, M.D., Health Protection, IDPH
Judith Conway, Health Protection, IDPH

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**IDPH Guidance for Schools:
Students and Community Associated Staphylococcus Aureus (CA-MRSA) Infections
January 2009**

Background

Staphylococcus aureus, often referred to as “staph,” are bacteria commonly found on the skin or in the nose of healthy people. Approximately 25% to 30% of the population are colonized with staph bacteria (i.e., carry the bacteria without becoming ill). Sometimes staph causes minor skin infections (e.g., pustules, small boils) that can be treated conservatively, without antibiotics. However, on occasion, staph bacteria can cause much more serious skin infections, as well as bloodstream infections, pneumonia, etc.

Over the past several years, treatment of some staph infections has become more problematic because the bacteria have become resistant to various antibiotics. Methicillin-resistant *Staphylococcus aureus* (MRSA) is a type of staph that is resistant to some antibiotics, including the antibiotic methicillin. Infections caused by MRSA have historically been associated with ill persons in health-care institutions. However, MRSA has now emerged as a common cause of skin and soft tissue infections that may occur in previously healthy adults and children who have not had prior contact with health-care settings. This type of MRSA infection is known as community-associated MRSA (CA-MRSA).

CA-MRSA can be transmitted from person to person through close contact. Risk factors associated with the spread of MRSA includes direct skin-to-skin contact with colonized or infected persons (non-intact skin serves as a point of entry for the bacteria), sharing contaminated personal items (e.g., towels, razors, soap, clothing), inadequate personal hygiene, direct contact with contaminated environmental surfaces, and living in crowded settings. CA-MRSA infections are treatable; early recognition and good medical management, including, as needed, surgical drainage and proper antibiotic prescribing and use, help to ensure prompt resolution of infections.

Recently, the Illinois Department of Public Health (IDPH) has received increasing reports of both outbreaks and sporadic cases of CA-MRSA infections. Likewise, there has been an increase in the number of outbreaks of CA-MRSA skin and soft-tissue infections reported at the national level. Outbreaks of CA-MRSA have occurred among athletes, especially participants in contact sports (e.g., football, wrestling) and sports where participants are prone to skin abrasions.

Recommendations

To limit the spread of staph, including MRSA, in school settings, IDPH recommends the following with respect to policy, infection control, and education/increased awareness:

1. Policy

The school health service should take an active role in evaluating students with skin lesions, including lesions that resemble a “bug bite,” or other pustule skin lesions that appear to be infected. It is recommended that any unusual skin lesion or other draining wound be considered as potentially infectious to others and infection control measures should be in place to prevent the spread of infection. Students with any open, weeping, or pustule lesion on the skin (other than acne) should be promptly referred to a primary care provider for consultation.

MRSA generally does not spread through a shared classroom environment. However, transmission of MRSA infection among student athletes is well described, and can have substantial impact on students and schools. Therefore, a policy for active surveillance for skin infections should be implemented by the school nurse, school physician, and/or director, coach or trainer of sports teams (especially those teams involved in contact sports) to expedite referral for medical evaluation. Encourage coaches and/or athletic trainers to assess student athletes for any unusual skin lesions before practice or competition, and athletes to report skin lesions to coaches.

When MRSA infection is suspected, athletes should be referred to their primary care provider for evaluation and treatment. Following the medical evaluation, confirm that a treatment plan for the student athlete is in place. Those infected with MRSA or other staph infections should follow their healthcare provider's treatment plan, including completing antibiotic therapy, if an antibiotic was prescribed. (Note: IDPH has developed guidance for healthcare providers regarding MRSA infections, available at http://www.idph.state.il.us/health/infect/MRSA_Provider.htm.)

Because bandages can shift or dislodge with activity or when wet, students with draining wounds should not be allowed to participate in practices, games, or physical education classes that involves contact with others until the wound has stopped draining. A more stringent requirement, complete healing, may be recommended for wrestlers. The student may participate in non-contact athletic activities such as weight-lifting, running, or jogging provided he/she observes good hygienic practices (e.g., washing hands) and the wound can be covered at all times with a clean, dry, intact bandage taped on all 4 sides. In addition, IDPH [rules](#) prohibit use of licensed swimming pools by anyone with a skin infection, regardless of whether or not it is bandaged.

If MRSA is diagnosed in a student athlete, the school should evaluate the possibility of other cases among their teammates. Clusters of MRSA infections (i.e., two or more laboratory-confirmed cases during a 14 day period) should be promptly reported to the local health department, as required by Illinois Department of Public Health Rules and Regulations effective March 3, 2008. Please note that skin lesions are caused by numerous causes other than MRSA, and that self-reports of MRSA diagnoses are sometimes incorrect. Definitive confirmation of MRSA infection typically requires review of laboratory records or direct communication with a physician's office. In addition, two or more MRSA cases in a school do not necessarily mean transmission has occurred in the school setting. Local health departments can provide assistance in confirming MRSA diagnoses, evaluating the likelihood of facility-based transmission, and recommending control measures.

Typically, it is not necessary to inform the entire school community about a case of MRSA infection. When MRSA occurs within the school population, the school nurse and school physician should determine, based on the specific situation, and in consultation with school administrators, whether some or all parents and staff should be notified. It is prudent to notify parents of students on an athletic team when a case of MRSA has been confirmed in a team member; and school-wide notification is typically warranted when a school-associated outbreak has been confirmed by the local health department. In the event notification takes place, care must be taken to maintain the confidentiality of students to avoid stigmatization and anxiety. Local health departments can assist schools in making sure that notifications contain factually correct information.

2. Infection Control

The following infection control measures are prudent in school settings in order to reduce the likelihood of spread of skin infections:

- **Keep the Wound Covered.**

All skin infections, particularly those that produce pus, must be covered with a clean, dry dressing (e.g., bandage) to contain the drainage. Keeping the wound covered will help control the spread of potentially infectious drainage to others and can also protect the environment from contamination. When providing wound care or dressing changes in the school setting, staff must prevent any unprotected contact with potentially infectious materials by use of gloves. Use standard precautions (e.g., hand hygiene before and after contact, gloves) when caring for nonintact skin or potential infections. Use barriers such as gowns, masks, and eye protection if splashing of body fluids is anticipated. Contaminated dressings and other materials associated with the infected lesion should be placed in a plastic bag before discarding, as appropriate.

- **Hygienic Practices**

MRSA outbreaks have clearly occurred in settings where athletes did not have access to, or did not use soap for handwashing or showering. To prevent spread of MRSA or other infections, all members of the

school community should routinely be diligent with hand hygiene. To this end, ensure availability of adequate soap, warm water and towels. If facilities for hand washing are not available, provide alcohol-based waterless hand sanitizers with careful supervision to ensure appropriate and safe use.

- Advise any MRSA-infected student and all those who might have contact with the infected wound or wound dressing to thoroughly wash his/her hands using soap and warm water or to use an alcohol-based waterless hand sanitizer immediately after contact. Hand hygiene also should be performed after using multi-use equipment (e.g., weight equipment).

In addition, emphasize the importance of good hygiene overall with all students, including showering and washing with soap as soon as possible after ALL practices and competitions.¹ Showering also should take place before sports with extensive skin-to-skin contact (e.g., wrestling).

- **Sharing Personal Items**

Instruct students and athletes to avoid sharing personal hygiene supplies and other items such as athletic clothing, towels, uniforms, skin balms, skin lubricants, razors, and certain sports equipment. It is particularly important to avoid sharing personal items that may have been in contact with the infected wound or bandage. Also, do not permit students to share individual-use bars of soap. Provide alcohol-based waterless hand sanitizer for hand hygiene when soap and water is not available.

- **Laundering Soiled Clothing**

Team uniforms and clothing worn during practices should be laundered with hot water and laundry detergent as appropriate. Dry items in a hot dryer to help eliminate bacteria when possible. The disinfectant capability of chlorine bleach is well established. Its use is the most effective means of reducing the bacterial count in laundered items at any temperature. Oxygenated (color safe) bleach may reduce numbers of bacteria, but does not eliminate them, and oxygenated bleach is not approved for disinfecting and sanitizing by the EPA.

- **Environmental Surfaces**

Closure of schools for facility-wide disinfection is not recommended when MRSA infections occur. The most important approach to preventing MRSA transmission is through simple measures noted above, including good personal hygiene, and covering infections. However, the environment may play a role in some cases of MRSA transmission. Therefore, a written procedure and schedule should be established for routine surface cleaning of frequently touched surfaces and surfaces that come into direct contact with people's skin, such as shared athletic equipment (e.g., wrestling mats and strength training equipment). Ensure cleaning products are used in accordance with the manufacturer's instructions. Clean and disinfect environmental surfaces and athletic equipment that has been in contact with potentially infectious wound drainage, blood, or non-intact skin utilizing an EPA-registered disinfectant cleaner that meets the requirements of the Occupational Safety and Health Administration (OSHA) Bloodborne Pathogens Standard or a 1:10 dilution of household chlorine bleach (1 part bleach in 9 parts water, prepared daily). Use an EPA-registered low-level disinfectant² (e.g., quaternary ammonium solution), 1:100 dilution of household chlorine bleach, or a general purpose cleaner to clean environmental surfaces and athletic equipment that is in contact with intact skin. Mats and other high-use equipment should be cleaned before and after each practice and several times a day throughout a wrestling tournament.

When feasible, use a clean towel as a barrier between bare skin and shared surfaces (e.g., exercise

¹ Students that require bandages taped on all four sides should shower at home. While in use, school showers should be cleaned and disinfected on a daily basis. In unusual situations where showering at home is not an available option, consult with the school nurse about use of a waterproof covering (plastic wrap or commercial product designed for this purpose), and infection control issues related to dressing changes, towels etc.

² A list of EPA approved disinfectants is available at <http://www.epa.gov/oppad001/chemregindex.htm>.

equipment). Use of barriers between bare skin and shared surfaces reduces the need for frequent sanitizer application. In addition, repair or discard equipment with damaged surfaces that cannot be adequately cleaned (e.g., equipment with exposed foam).

3. Education/Increased Awareness

Transmission of MRSA skin and soft tissue infections among students who participate in competitive sports is a significant concern. All persons (e.g., coaches, trainers, parents/caregivers, and teammates) associated with the school's competitive sport activities and sport teams should engage in initiatives to increase adherence to the school's policies and procedures designed to prevent transmission of MRSA skin infections, and awareness of risk factors for infections.

Providing information for student athletes and their parents regarding precautions and preventive measures related to CA-MRSA is prudent practice. Athletes and their parents should be aware that possible risk factors for MRSA skin and soft tissue infection occurring among athletes include:

- Physical contact/skin trauma
- "Turf burns"
- Contact with teammates' uncovered skin lesions
- Sharing protective equipment, clothing, or towels
- Sharing sports equipment
- Sharing personal hygiene items
- Reuse of unlaundered towels, clothing, uniforms, etc.
- Inadequate supply of dispensable or individual-use soap
- Cosmetic body shaving
- Poor personal hygiene practices, including infrequent hand washing
- Poor environmental cleaning of locker rooms/sport rooms

In addition, since staph infections start when staph enter the body through a break in the skin, keeping skin healthy and intact is a good preventive measure -- good skin care should be encouraged among student athletes.

Attachments:

- Sample informational letter to parents of student athletes
- Sample notification letter
- School athletic program infection control checklist (adapted from Tacoma-Pierce County (WA) Health Department. materials
- School health team infection control checklist (adapted from Tacoma-Pierce County (WA) Health Department materials

Additional Resources:

--MRSA Health Beat. Illinois Department of Public Health. Available at <http://www.idph.state.il.us/public/hb/hbmrsa.htm>

--Community-Associated MRSA Information for the Public. U.S. Centers for Disease Control and Prevention. Available at:

http://www.cdc.gov/ncidod/dhqp/ar_mrsa_ca_public.html

http://www.cdc.gov/mrsa/mrsa_initiative/skin_infection/index.html

--MRSA Educational Materials (posters). U.S. Centers for Disease Control and Prevention. Available at:
http://www.cdc.gov/ncidod/dhqp/ar_mrsa_ca_posters.html

--MRSA in Illinois: Guidelines for the Primary Care Provider. Illinois Department of Public Health. Available at
http://www.idph.state.il.us/health/infect/MRSA_Provider.htm

Sample informational letter for parents/guardians about MRSA (e.g., pre-season letter to all parents of football team members)

Dear Parent or Guardian:

You may have heard or seen media coverage concerning MRSA or methicillin-resistant *Staphylococcus aureus* infections in school-aged children. We would like to take this opportunity to provide you with some information about MRSA and, most importantly, how to prevent and control the spread of these infections.

Staphylococcus aureus, often referred to simply as “staph,” is a bacterium that is commonly carried on the skin or in the nose of healthy people. Approximately 30% of the population is colonized (when bacteria are present, but not causing an infection) in the nose with staph bacteria, and approximately 1% is colonized with MRSA, a type of staph that is resistant to certain antibiotics. Most of the infections caused by staph, including MRSA, are skin infections, such as boils. MRSA infections are most likely to occur among student athletes participating in sports where there is skin contact and/or trauma to skin (e.g., abrasions, “turf burns”). Staph skin infections can be red, painful, swollen, or have pus, or other drainage. Individuals who believe they may have a staph infection or MRSA infection should contact their medical provider for evaluation and appropriate treatment.

Practicing good hygiene is one of the most important things that we can all do to control the spread of staph and other infections:

- Keep hands clean by frequently washing with soap and water or using an alcohol-based hand sanitizer.
- Keep cuts and scrapes covered with a clean bandage until healed.
- Avoid contact with other people’s wounds or bandages.
- Avoid sharing personal items that directly touch the body, such as towels, razors, and water bottles
- Keep fingernails clean and clipped short.
- See your medical provider if you have a skin infection that is not getting better.

Students participating in contact sports or other activities that lead to close skin-to-skin contact should take additional precautions related to skin infections and hygiene:

- Do not share towels, clothing, or uniforms.
- Shower as soon as possible after practice or games are over; do not share bar soap.
- Keep equipment clean. Follow coaches’ directions about cleaning equipment.
- Wash dirty uniforms, practice clothing, and used towels with hot water and laundry detergent.
- Using a hot dryer, rather than air-drying, also helps kill bacteria.
- Report any cuts, abrasions, or wounds to the coach and school nurse.

Schools are cleaned daily with EPA-approved cleaners that kill a variety of viruses and bacteria, including MRSA. Although environmental cleaning is important for a variety of reasons, it is not a substitute for the measures listed above.

For more information about MRSA and how to prevent it, see:

- The Illinois Department of Public Health Website:
http://www.idph.state.il.us/health/infect/MRSA_home.htm
- The U.S. Centers for Disease Control and Prevention Website:
http://www.cdc.gov/ncidod/dhqp/ar_mrsa_ca.html

Contact Person

Address

Telephone

Fax

Sample informational letter informing parents/guardians of a cluster of MRSA skin infections

Dear Parent or Guardian:

(Insert name of school here) has received reports of (_____ e.g. *several cases*) of staph infection, possibly Methicillin-resistant *Staphylococcus aureus* (MRSA) within (e.g., *your child's athletic team*).

Staphylococcus aureus, often referred to simply as “staph,” is a bacterium that is commonly carried on the skin or in the nose of healthy people. Approximately 30% of the population is colonized (when bacteria are present, but not causing an infection) in the nose with staph bacteria. MRSA is a type of staph that has developed antibiotic resistance (certain antibiotics are unable to kill the bacteria). Since staph is spread primarily by direct (skin-to-skin) human contact or with direct contact to infection drainage of someone who is carrying or infected with the bacteria, anyone with a break in his or her skin is at risk for a staph infection. MRSA also may occur less frequently through indirect contact with contaminated surfaces or items.

Staph infections, including those due to MRSA, may begin abruptly. Symptoms may include a large area of redness on the skin, swelling and pain, followed by a pustule, abscess, boil or carbuncle (red, lumpy sores filled with pus). If left untreated, staph can infect blood and bones, causing severe illness that requires hospitalization. Individuals who believe they may have a skin infection should contact their medical provider for evaluation and appropriate treatment.

Students and their family members should take the following precautions to help prevent skin infections:

- Encourage students to keep their fingernails clean and clipped short.
- Encourage frequent hand washing with soap and warm water or using an alcohol-based hand sanitizer.
- Avoid contact with other people's infections or anything contaminated by an infection.
- Avoid sharing personal items that directly touch the body, such as razors, towels, deodorant, make-up, or soap.
- Clean and disinfect objects (such as gym and sports equipment) before use.
- Wash dirty clothes, linens, and towels with hot water and laundry detergent. Using a hot dryer, rather than air-drying, also helps kill bacteria.
- Encourage students who participate in contact sports to shower immediately after each practice, game, or match.
- Anyone assisting with infection care should wear gloves and wash their hands with soap and water before and after bandage changes.

Occasionally, students with MRSA infection require exclusion from the school setting — e.g., when draining lesions cannot be completely covered with a dry dressing, or if good hygiene habits cannot be maintained.

We encourage you to be vigilant in looking for signs and symptoms of staph infection. If you or any family members exhibit symptoms described above, contact your medical provider.

Attached you will find information developed by the Illinois Department of Public Health to assist you with the prevention and spread of MRSA. For more information about staph and MRSA, contact your medical provider, local health department, or check the Illinois Department of Public Health Website: http://www.idph.state.il.us/health/infect/MRSA_home.htm.

Contact Person

Address

Telephone

Fax

School Athletic Programs

SAMPLE INFECTION CONTROL POLICIES AND PROCEDURES CHECKLIST

Use this tool as a guide to determine which policies/procedures you already have, if they are being followed, and which policies and procedures you need to implement. This is a sample checklist; policies and procedures may vary.

	Policies/Procedures		
	Exist (✓)	Followed (✓)	Needed (✓)
General			
All hard environmental surfaces that may come into contact with body fluids are cleaned and sanitized daily with an EPA-approved disinfectant (if area in use).			
All floor and wall padding in athletic areas are washed daily, if athletic area is used.			
Separate mop heads/buckets are used for each activity area, locker rooms, and rest rooms. Mop heads and buckets are cleaned regularly.			
Towels/linens laundered on premises are washed in hot water and dried in a hot dryer			
<i>Notes:</i>			
Wrestling Room and Mats			
Wall padding, benches and door knobs are wiped-down with quaternary ammonium (quat) or 1:100 bleach solution after each practice and meet, and several times a day throughout a tournament.			
Floors are cleaned before and after any moveable mats are used.			
Mat surfaces with <i>small</i> holes or tears are repaired with mat tape. When mat sides are in poor condition, mats are taped together for meets <i>and</i> for practice.			
Mat surfaces are replaced promptly when there are <i>large</i> holes or surfaces are excessively worn.			
Both sides of mats are thoroughly cleaned before and after each use for practices and meets.			
A separate mop head/bucket is used specifically for cleaning mats; mop heads and buckets are washed regularly.			
<i>Notes:</i>			
Weight Room			
Weight machine padding is inspected regularly, and promptly replaced if punctured or torn.			
Tape on grip areas on weight bars, dumbbells and machines is replaced regularly.			
Grip areas on weight bars, dumbbells, and machines, and lift belts are wiped down daily.			

Wall dispensers of alcohol-based hand sanitizer ($\geq 60\%$ alcohol) are placed at each entry/exit. Athletes and coaches are instructed to use when entering/leaving room -- minimum use; may use more often.			
Floors, benches, supports, pads, light switches and door knobs are cleaned daily (when room in use).			
<i>Notes:</i>			
Locker Rooms/Shower Rooms			
Wall dispensers for liquid soap are located next to showers.			
Soap dispensers should have “unit” refills.			
All shower and locker room areas are cleaned and disinfected daily (if used).			
<i>Notes:</i>			
Sports equipment (balls, racket grips, bats, gloves) is cleaned regularly.			
All shared equipment that comes in direct contact with the skin of an athlete (wrestling head gear, football helmets, and fencing wires) should be cleaned and sanitized after each use.			
<i>Notes:</i>			
First Aid			
Hand sanitizer (60% alcohol or greater) is in first aid kit.			
When caring for any athlete injury, disposable gloves are used and hand hygiene is performed, both before and after providing first-aid.			
Scoops are used (not hands) to take ice out of cooler to make ice packs for injuries. Scoop is cleaned daily when in use and NOT stored in ice container.			
Single-use portions of antibiotics, salves and other ointments are removed from any larger dispensing unit prior to application. Any unused product is NOT returned to the original dispenser, but discarded.			
Athletes with open, potentially contagious wounds are kept from participating in contact sports until wounds are not draining.			
Athletes with potential skin infections are referred to the team physician or their own medical provider.			
<i>Notes:</i>			
Education of Athletes/Parents			
Athletes are encouraged to follow good hygiene practices, including frequent hand washing, showering immediately following each practice or competition, and NOT sharing water bottles.			
Athletes are instructed to NOT share personal hygiene items (bar soap, razors, etc.), or topical ointments, antibiotics and salves.			

Athletes are encouraged to promptly report abrasions, lacerations or skin infections to a coach/team trainer or school nurse.			
Athletes who use weight room are encouraged to wear workout clothes that minimize skin contact with benches and equipment.			
Athletes are reminded to wash used practice clothes, uniforms, and towels. (Use hot water and bleach when feasible.)			
Athletes are informed of infection control precautionary measures, such as the importance of hand hygiene, showering immediately after sports activities, and washing practice clothes/uniforms after they are worn once.			
<i>Notes:</i>			
Signature: _____	Date: _____		

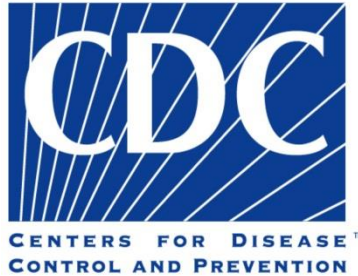
School Health Team

SAMPLE INFECTION CONTROL POLICIES AND PROCEDURES CHECKLIST

Use this tool as a guide to determine which policies/procedures you already have, if they are being followed, and which policies and procedures you need to implement. This is a sample checklist; policies and procedures may vary.

	Policies/Procedures		
	Exist (✓)	Followed (✓)	Needed (✓)
Reporting			
If two or more MRSA cases that may be linked (e.g., in a classroom or one athletic team), the local health department is notified.			
Referrals are made to licensed physicians when a MRSA skin infection is suspected.			
Athletes are strongly encouraged to report possible skin infections to coaches and coaches/trainers are encouraged to assess athletes regularly for skin infections and report findings to school health team.			
<i>Notes:</i>			
Infection Control in the Health Room			
Contact precautions are used when doing wound care. Standard precautions are used in all circumstances.			
Disposable gloves are worn if contact with non-intact skin or mucous membranes is expected. Hand hygiene with soap and water or alcohol hand sanitizer is performed before starting care and <i>immediately</i> after removing gloves.			
Potentially contaminated surfaces are cleaned with an EPA-registered disinfectant. If surfaces are visibly soiled they are cleaned first and then wiped down with an EPA-registered disinfectant.			
Health room cots (surfaces that come in contact with patient) are cleaned if visibly dirty and wiped down after each use.			
Potentially soiled linen and clothing are washed with laundry detergent. Use hot water and bleach when feasible.			
Door knobs, phones, keyboards, light switches, and other hand-touch items in health room are cleaned/wiped down twice daily (if area in use).			
Medical machines are wiped with isopropyl alcohol or			

other low level disinfectant after each use.			
<i>Notes:</i>			
Prevention and Transmission Control - General			
Persons with open wounds keep them covered with dressings that are taped on all four sides.			
Students or staff members who are MRSA-colonized or MRSA-infected are not routinely excluded from the classroom. Exclusion is reserved for those persons with wound drainage that cannot be contained with a clean, dry dressing taped on all four sides.			
Athletes and coaches who participate in contact sports are strongly encouraged to shower immediately after practices, matches, or games.			
<i>Notes:</i>			
Signature _____	Date _____		



MUMPS

Mumps is a contagious disease that is caused by the mumps virus. Mumps typically starts with a few days of fever, headache, muscle aches, tiredness, and loss of appetite, and is followed by swelling of salivary glands. Anyone who is not immune from either previous mumps infection or from vaccination can get mumps.

Before the routine vaccination program was introduced in the United States, mumps was a common illness in infants, children and young adults. Because most people have now been vaccinated, mumps has become a rare disease in the United States.

Currently, there is no specific treatment for mumps. Supportive care should be given as needed. If someone becomes very ill, they should seek medical attention. If someone seeks medical attention, they should call their doctor in advance so that they don't have to sit in the waiting room for a long time and possibly infect other patients.

Symptoms

- Fever
- Headache
- Muscle aches
- Tiredness
- Loss of appetite
- Swollen and tender salivary glands under the ears or jaw on one or both sides of the face (parotitis)

Vaccination

The MMR (measles, mumps, and rubella) vaccine is the best way to prevent mumps. The MMR vaccine should be routinely given when children are 12-15 months old, and a second dose should be given when they are 4-6 years old. Two doses of the vaccine are more effective against mumps than one dose and prevent most, but not all, cases of mumps and mumps complications.

Complications

Most people with mumps recover fully. However, mumps can occasionally cause complications, and some of them can be serious. Complications may occur even if a person does not have swollen salivary glands (parotitis) and are more common in people who have reached puberty.

Complications of mumps can include

- Inflammation of the testicles (orchitis) in males who have reached puberty, which rarely leads to sterility
- Inflammation of the brain (encephalitis) and/or tissue covering the brain and spinal cord (meningitis)
- Inflammation of the ovaries (oophoritis) and/or breasts (mastitis) in females who have reached puberty
- Temporary or permanent deafness

Transmission

Mumps is spread by droplets of saliva or mucus from the mouth, nose, or throat of an infected person, usually when the person coughs, sneezes or talks. Items used by an infected person, such as cups or soft drink cans, can also be contaminated with the virus, which may spread to others if those items are shared. In addition, the virus may spread when someone with mumps touches items or surfaces without washing their hands and someone else then touches the same surface and rubs their mouth or nose.

Most mumps transmission likely occurs before the salivary glands begin to swell and within the 5 days after the swelling begins. Therefore, CDC recommends isolating mumps patients for 5 days after their glands begin to swell.

If you have mumps, there are several things you can do to help prevent spreading the virus to others:

- Minimize close contact with other people, especially babies and people with weakened immune systems who cannot be vaccinated.
- Stay home from work or school for 5 days after your glands begin to swell, and try not to have close contact with other people who live in your house.
- Cover your mouth and nose with a tissue when you cough or sneeze, and put your used tissue in the trash can. If you don't have a tissue, cough or sneeze into your upper sleeve or elbow, not your hands.
- Wash hands well and often with soap, and teach children to wash their hands too.
- Don't share drinks or eating utensils.
- Regularly clean surfaces that are frequently touched (such as toys, doorknobs, tables, counters) with soap and water or with cleaning wipes.



Norovirus

What are noroviruses?

Noroviruses are a group of related viruses that affect the intestinal tract causing gastroenteritis illness. This group of viruses has been also referred to as caliciviruses and Norwalk-like viruses. These viruses are an important cause of gastrointestinal illness throughout the United States, including Illinois.

What are the symptoms of noroviruses?

Many of the noroviruses cause similar symptoms that usually occur between 24 hours and 48 hours after exposure. They include nausea, vomiting, diarrhea, abdominal pain, body aches, headache, tiredness and low-grade fever. Symptoms typically last 24 hours to 60 hours and subside on their own. There are no known long-term effects after recovery from this infection.

How common is norovirus infection?

The U.S. Centers for Disease Control and Prevention estimates that at least half of all foodborne outbreaks of gastroenteritis can be attributed to noroviruses. Some studies indicate that more than 60 percent of the U.S. population is exposed to one or more of these viruses by the age of 50. Noroviruses are highly contagious and can spread easily from person to person.

How do people come in contact with these viruses?

Humans are the only source for these viruses. These viruses do not multiply outside the human body. The viruses are present in the feces of infected persons and can be transmitted to others when hands are not thoroughly washed after having a bowel movement. When an infected person who did not wash hands after toileting handles food that is not later cooked, others who eat the food can become infected. Heating foods to cooking temperatures kills these viruses. People also can be infected by drinking water contaminated by sewage containing one of these viruses or by

consuming ice made from contaminated water. Unless thoroughly cooked, shellfish (such as oysters) harvested from waters containing sewage can transmit the viruses. These viruses also are transmitted readily from person to person when hands are not washed after toileting. There is some evidence that the viruses can be transmitted by aerosolized vomitus or contact with objects contaminated with fecal material.

How are these infections diagnosed?

Standard hospital laboratories and commercial laboratories usually are not equipped to detect noroviruses. The specialized laboratories that can detect these viruses perform tests on stool specimens from an infected person to detect the virus. In Illinois, only the Illinois Department of Public Health's laboratories have the capability to confirm a diagnosis of one of these viruses. This laboratory service is reserved for testing a small number of people associated with recognized outbreaks and is not available for testing individual cases of gastrointestinal illness.

If I have had a norovirus infection in the past, can I get it again?

Yes. It appears that immunity following norovirus infection varies from person to person. It is possible some persons achieve immunity but more studies are needed to better understand susceptibility to reinfection.

How can these infections be prevented?

Food handlers should practice careful handwashing after toileting and before food preparation. Food handlers should not have bare hand contact with ice. Persons involved in food preparation who have symptoms of gastroenteritis should be restricted from work until they no longer have diarrhea. Water supplies should be protected from the risk of contamination by sewage. Plumbing in dwellings and business establishments should be constructed with no cross-connections to prevent sewage from entering the drinking water supply.

All persons can decrease their chance of coming in contact with noroviruses by following these preventive steps:

- Frequently wash your hands, especially after toileting or changing diapers and before eating or preparing food.
- Carefully wash fruits and vegetables, and steam oysters before eating them.
- Thoroughly clean and disinfect contaminated surfaces immediately after an episode of diarrhea or vomiting by using a bleach-based household cleaner. If using liquid household bleach prepared daily, one part bleach to nine parts water (1:10 dilution) is recommended.

- Immediately remove and wash clothing or linens that may be contaminated with feces or vomitus (use hot water and soap).
- Flush or discard any vomitus and/or stool in the toilet and make sure that the surrounding area is kept clean.
- Persons who are infected with norovirus should refrain from food preparation while they have symptoms and for three days after they recover from their illness.

Outbreaks of norovirus in long-term care facilities are not uncommon and are frequently transmitted from person to person (including residents, staff, visitors and volunteers). Strict compliance with good hygiene practices is important to prevent the spread of norovirus in this population.

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MEMORANDUM

TO: Illinois Daycare Facilities and Schools; Local Health Departments and Regional Offices of the Illinois Department of Public Health

FROM: Janette Candido, Epidemiologist
Communicable Disease Control Section

DATE: December 20, 2011

SUBJECT: Guidance for Prevention of Acute Gastroenteritis (AGE) Outbreaks in Daycare Facilities and Schools

Local health departments are asked to forward the following information to schools and daycare facilities in their jurisdiction.

This guidance supersedes the previously issued “Guidance for Prevention of Norovirus Outbreaks in Daycare Facilities and Schools,” posted on November 17, 2010 in the intranet Communicable Disease Updates page.

The Illinois Department of Public Health Communicable Disease Control Section (CDCS) defines an AGE outbreak in a school or day care setting as a cluster of four or more persons with acute-onset of vomiting and/or diarrhea in a classroom or in an otherwise defined group of students; or cases in more than 10% of the school's/daycare's census in a single day. This definition differs from that of most other outbreaks; including viral AGE outbreaks in long-term care facilities or other locations where people gather such as restaurants, banquet halls etc.

Norovirus, formerly called Norwalk-like virus, is part of the *Calicivirus* family which is the most common virus that causes AGE in humans. Aside from acute onset of vomiting or diarrhea, other symptoms include nausea, abdominal cramps, low-grade fever, and body aches. Norovirus is very contagious, and humans are the only known reservoir. The virus can be spread through food, water, or by person-to-person transmission. The virus has an incubation period of 12-48 hours and symptoms typically resolve in 1- 3 days even without treatment. Norovirus outbreaks are common in schools and daycare facilities particularly in fall or winter months.

The following recommendations are key steps in investigation and response to AGE outbreaks in daycare facilities and schools from the Centers for Disease Control and Prevention (CDC) 2011:

- 1. Daycare facilities and schools are required to report all confirmed or suspected outbreaks of acute gastroenteritis to the local health department as soon as possible.**
2. Initiate investigation promptly to help identify predominant mode of transmission and possible source.
 - It is recommended that schools and daycares maintain a daily log of the number of students and teachers absent due to AGE illness. A line list is available to log reports of absenteeism due to AGE illness.
3. Promote hand hygiene: **Good hand hygiene is the best way to prevent transmission of AGE.**
 - Hands should be washed with warm water and soap for a minimum of 20 seconds.
 - Children should be taught good hand hygiene practices, and should wash their hands after using the bathroom and before eating.

- Staff, especially staff responsible for caring for diapered children, should wash their hands frequently and particularly prior to contact with any diapered child.
4. During outbreaks, washing hands with soap and warm water is preferable to using alcohol-based hand sanitizers. Alcohol-based hand sanitizers should only be used when washing with soap and warm water is not possible but not as a substitute to soap and warm water hand washing.
 5. Exclusion:
 - Children and staff who are experiencing symptoms of AG should stay home from school or daycare until **24 hours** after symptoms have stopped.
 - Staff involved in food preparation should be restricted from preparing food for **48 hours** after symptoms stop. The staff may perform other duties not associated with food preparation 24 hours after symptoms have stopped until the 48 hour restriction for food preparation activities has ended.
 6. Reinforce effective preventive controls and employee practices (e.g., elimination of bare-hand contact with ready-to-eat foods and proper cleaning and sanitizing of equipment and surfaces).
 7. If a vomit or fecal spillage occurs, the area should be sanitized with an Environmental Protection Agency-approved disinfectant or a freshly prepared sodium hypochlorite solution. The hypochlorite (bleach) solution should be a **1:50 dilution**; mix 1/3 cup bleach with 1 gallon water. For heavily soiled surfaces, use a dilution of 1:10, or 1 2/3 cup bleach to one gallon of water. **Allow the solution to be in contact with the surface for 10-20 minutes** or until it has air dried. Materials that may be put in children's mouths (e.g. toys) should be rinsed. For porous surfaces such as upholstered furniture, carpets or clothing, clean visible debris with an absorbent, double-layer material. Steam clean or wash the contaminated surface at 158° F for 5 minutes or 212° F for 1 minute. Custodial staff should wear masks and gloves when cleaning areas contaminated by feces or vomitus. Throw away all disposable materials in sealed bags.
 8. Bathrooms and other communal spaces should be cleaned more frequently during suspected Norovirus outbreaks. Frequently touched surfaces, such as door handles, classroom materials, and computer mice, should be disinfected with an approved product. For Day Care Centers, toys should be cleaned as often as possible. If a toy is not able to be cleaned by routine methods they should be put away during the course of the outbreak. Also toys which may fit in a child's mouth should be put away during the course of the outbreak.
 9. Facilities serving or sharing food should take these extra precautions:
 - Restrict sharing of foods brought from private homes.
 - Restrict students' sharing of any communal food items in classrooms. Instead, the teacher should hand out items to be shared after washing his/her hands.
 - Stop using self-service food bars. Do not let children serve themselves in any manner which might promote direct hand contact with shared foods.
 10. Assist the local health department in collecting whole stool specimens from at least two and no more than five persons during the acute phase of the illness (preferably <=72 hours from onset). The specimens can be submitted to a commercial laboratory for Norovirus testing or may be submitted to the IDPH lab assigned to test Norovirus in your area. Specimens should be collected in a clean container and shipped on cold packs. The specimen does not need to be frozen. Specimens should be kept cold and should not be sent to arrive on Fridays, weekends, or holidays.
 - The facilities should assist in the completion and submission of a final report form no more than 30 days after the last onset of illness.



Pertussis

Pertussis, a respiratory illness commonly known as whooping cough, is a very contagious disease caused by a type of bacteria called *Bordetella pertussis*. These bacteria attach to the cilia (tiny, hair-like extensions) that line part of the upper respiratory system. The bacteria release toxins, which damage the cilia and cause inflammation (swelling).

Transmission

Pertussis is a very contagious disease only found in humans and is spread from person to person. People with pertussis usually spread the disease by coughing or sneezing while in close contact with others, who then breathe in the pertussis bacteria. Many infants who get pertussis are infected by older siblings, parents or caregivers who might not even know they have the disease (Bisgard, 2004 & Wendelboe, 2007). Symptoms of pertussis usually develop within 7–10 days after being exposed, but sometimes not for as long as 6 weeks.

While pertussis vaccines are the most effective tool we have to prevent this disease, no vaccine is 100% effective. If pertussis is circulating in the community, there is a chance that a fully vaccinated person, of any age, can catch this very contagious disease. If you have been vaccinated, the infection is usually less severe. If you or your child develops a cold that includes a severe cough or a cough that lasts for a long time, it may be pertussis. The best way to know is to contact your doctor.

Signs & Symptoms

In those who have been vaccinated:

- In most cases, the cough won't last as many days
- Coughing fits, whooping, and vomiting after coughing fits occur less often
- The percentage of children with apnea (long pause in breathing), cyanosis (blue/purplish skin coloration due to lack of oxygen) and vomiting is less

Pertussis (whooping cough) can cause serious illness in infants, children and adults. The disease usually starts with cold-like symptoms and maybe a mild cough or fever. After 1 to 2 weeks, severe coughing can begin. Unlike the common cold, pertussis can become a series of coughing fits that continues for weeks. In infants, the cough can be minimal or not even there. Infants may

have a symptom known as "apnea." Apnea is a pause in the child's breathing pattern. Pertussis is most dangerous for babies. About half of infants younger than 1 year of age who get the disease are hospitalized. Pertussis can cause violent and rapid coughing, over and over, until the air is gone from the lungs and you are forced to inhale with a loud "whooping" sound. This extreme coughing can cause you to throw up and be very tired. The "whoop" is often not there and the infection is generally milder (less severe) in teens and adults, especially those who have been vaccinated. Early symptoms can last for 1 to 2 weeks and usually include:

- Runny nose
- Low-grade fever (generally minimal throughout the course of the disease)
- Mild, occasional cough
- Apnea — a pause in breathing (in infants)

Diagnosis

Pertussis (whooping cough) can be diagnosed by taking into consideration if you have been exposed to pertussis and by doing a laboratory test which involves taking a sample of secretions (with a swab or syringe filled with saline) from the back of the throat through the nose.

Treatment

Pertussis is generally treated with antibiotics and early treatment is very important. Treatment may make your infection less severe if it is started early, before coughing fits begin. Treatment can also help prevent spreading the disease to close contacts (people who have spent a lot of time around the infected person). Treatment after three weeks of illness is unlikely to help because the bacteria are gone from your body, even though you usually will still have symptoms. This is because the bacteria have already done damage to your body.

Vaccines

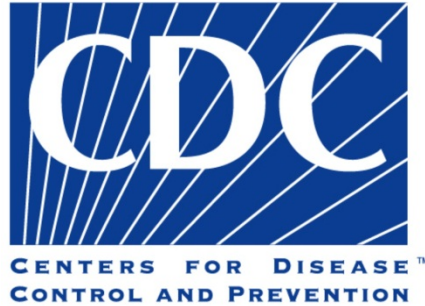
The best way to prevent pertussis (whooping cough) among infants, children, teens, and adults is to get vaccinated. Also, keep infants and other people at high risk for pertussis complications away from infected people.

In the United States, the recommended pertussis vaccine for infants and children is called DTaP. This is a combination vaccine that protects against three diseases: diphtheria, tetanus and pertussis.

The childhood whooping cough vaccine (DTaP) protects most children for at least 5 years. Vaccine protection for these three diseases fades with time. Before 2005, the only booster available contained protection against tetanus and diphtheria (called Td), and was recommended for teens and adults every 10 years. Today there is a booster for preteens, teens and adults that contains protection against tetanus, diphtheria and pertussis (Tdap).

The easiest thing for adults to do is to get Tdap instead of their next regular tetanus booster—that Td shot that they were supposed to get every 10 years. The dose of Tdap can be given earlier

than the 10-year mark, so it is a good idea for adults to talk to a healthcare provider about what is best for their specific situation. **Being up-to-date with pertussis vaccines is especially important for families with and caregivers of new infants.**



Tosferina (Pertussis)

Causas y transmisión

Causas

La tos ferina es una enfermedad de las vías respiratorias, también conocida como tos convulsiva o *Pertussis*. Es una enfermedad muy contagiosa causada por un tipo de bacteria llamada *Bordetella pertussis*. Estas bacterias se adhieren a los flagelos (pequeñas extensiones parecidas a vellos) que recubren parte de las vías respiratorias altas. Dichas bacterias liberan toxinas, las cuales dañan los flagelos y causan inflamación.

Transmisión

La tos ferina es una enfermedad muy contagiosa que ocurre solamente en los seres humanos y se transmite de persona a persona. Las personas que tienen tos ferina por lo general transmiten la enfermedad cuando tosen o estornudan cerca de otras personas, quienes a su vez inhalan las bacterias que causan la enfermedad. Muchos de los bebés que contraen la tos ferina son infectados por sus hermanos mayores, padres o personas que los cuidan, quienes probablemente ni siquiera saben que padecen la enfermedad (Bisgard, 2004 & Wendelboe, 2007). Los síntomas de la tos ferina se presentan, por lo general, 7 a 10 días después de que la persona ha estado expuesta a la bacteria, pero algunas veces pueden pasar hasta 6 semanas antes de que aparezcan los síntomas.

Las vacunas contra la tos ferina son muy eficaces para proteger contra la enfermedad, sin embargo, ninguna vacuna es 100% eficaz. Si la tos ferina está circulando en una comunidad, existe la posibilidad de que una persona de cualquier edad, que esté al día con sus vacunas, contraiga esta enfermedad tan contagiosa. Si usted está vacunado, la infección suele ser menos fuerte. Si usted o su hijo se resfrían y tienen una tos fuerte o una tos que dura mucho tiempo, puede que sea tos ferina. La mejor manera de saberlo es consultando a su médico.

Signos y síntomas

La tos ferina (*Pertussis* o tos convulsiva) puede enfermar gravemente a bebés, niños y adultos. Esta afección suele comenzar con síntomas parecidos a los del resfriado que podrían estar

acompañados de tos leve o fiebre. Después de 1 o 2 semanas, puede aparecer una fuerte tos. A diferencia del resfriado común, la tos ferina puede producir una serie de accesos de tos durante varias semanas.

En los bebés, la tos puede ser mínima o incluso estar del todo ausente. En los bebés puede que se presente un síntoma conocido como "apnea", es decir, una pausa en la respiración normal del niño. La tos ferina es particularmente peligrosa en los bebés. Más de la mitad de los bebés menores de 1 año que contraen tos ferina deben ser hospitalizados. La tos ferina puede causar accesos de tos intensos, rápidos y repetidos, que hacen que los pulmones se queden sin aire, al punto que la persona afectada debe hacer un esfuerzo mayor para respirar, lo cual produce un fuerte silbido. Esta tos extrema puede causar vómito y mucho cansancio. Por lo general, en los adolescentes y adultos no se presenta el silbido y la infección es más leve, especialmente en aquellas personas que han sido vacunadas.

Los primeros síntomas pueden durar de 1 a 2 semanas y suelen incluir:

- Secreción nasal o moqueo
- Fiebre baja (generalmente mínima durante toda la enfermedad)
- Tos leve ocasional
- Apnea - pausa en la respiración (en los bebés)

Debido a que en sus primeras etapas, la tos ferina no se diferencia mucho del resfriado común, a menudo no se sospecha ni diagnostica su presencia hasta no aparecer síntomas más intensos. Es en esta etapa, hasta dos semanas después de aparecer la tos, cuando las personas infectadas son más contagiosas. Los antibióticos pueden disminuir el período durante el cual una persona es contagiosa.

A medida que progresa la enfermedad, aparecen los síntomas tradicionales de la tos ferina, los cuales incluyen:

- Paroxismos (accesos) de tos rápida seguidos de un fuerte silbido al respirar.
- Vómito
- Agotamiento (mucho cansancio) después de los accesos de tos

Los accesos de tos pueden durar hasta 10 semanas o más. En China, la tos ferina es conocida como "la tos de los 100 días".

A pesar de que con frecuencia uno queda exhausto después de un acceso de tos, por lo general, no se siente tan mal entre los accesos. Los accesos de tos suelen presentarse con más frecuencia durante la noche y se hacen más comunes y más fuertes a medida que la enfermedad progresa. En los niños, adolescentes y adultos que han sido vacunados la enfermedad puede ser más leve (menos fuerte) y a menudo no se presenta ningún silbido.

La recuperación de la tos ferina puede ser lenta. La tos se hace menos fuerte y menos frecuente. Sin embargo, pueden presentarse nuevamente los accesos de tos conjuntamente con otras infecciones respiratorias por muchos meses después de haber aparecido la tos ferina.

Diagnóstico y tratamiento

Diagnóstico

La tos ferina (*Pertussis* o tos convulsiva) puede diagnosticarse si existe la posibilidad de que la persona ha estado expuesta a esta enfermedad y realizando los siguientes estudios:

- Evaluación de los signos y síntomas típicos
- Examen físico
- Análisis de laboratorio, que implica tomar muestras (con un hisopo o una jeringa llena de solución salina) de las secreciones de la parte de atrás de la garganta y de la nariz
- Exámenes de sangre

Tratamiento

Por lo general, la tos ferina se trata con antibióticos y es muy importante que se administren lo más pronto posible. Si el tratamiento comienza pronto, antes de que aparezcan los accesos de tos, es probable que la infección no sea tan fuerte. El tratamiento también puede ayudar a evitar la propagación de la enfermedad a los contactos cercanos (que han estado cerca de la persona infectada por mucho tiempo) y es necesario para detener la propagación de la tos ferina. Si el tratamiento comienza a aplicarse tres semanas después de haber aparecido la enfermedad, es probable que ya no sea eficaz ya que las bacterias han salido del cuerpo de la persona infectada, aunque todavía presente síntomas. Esto se debe a que las bacterias ya han afectado al organismo de la persona.

Existen varios antibióticos para el tratamiento de la tos ferina. Si a usted o a su hijo se les ha diagnosticado la tos ferina, su médico le explicará cómo tratar la infección.

Prevención:

Vacunas

La mejor manera de prevenir la tosferina (*Pertussis* o tos convulsiva) en bebés, niños, adolescentes y adultos es a través de la vacunación. Además, se recomienda mantener alejadas a las personas que tienen un alto riesgo de sufrir complicaciones por la tosferina de las que están infectadas.

En los Estados Unidos la vacuna contra la tosferina recomendada para bebés y niños se llama DTaP. Esta es una vacuna combinada que protege contra tres enfermedades: la difteria, el tétanos y la tosferina.

La vacuna infantil contra la tosferina (DTaP) protege a la mayoría de los niños por al menos 5 años.

La protección que da la vacuna contra la tosferina, el tétanos y la difteria se debilita con el pasar del tiempo. Antes del 2005, la única vacuna de refuerzo disponible protegía solamente contra el tétanos y la difteria (denominada Td) y se recomendaba su administración en adolescentes y adultos cada 10 años. En la actualidad, se cuenta con vacunas de refuerzo para preadolescentes, adolescentes y adultos, que ofrecen protección contra el tétanos, la difteria y la tosferina (Tdap).

Lo más fácil para los adultos es que se pongan la Tdap en lugar del refuerzo normal contra el tétanos (la dosis de Td que debieron haber recibido cada 10 años). La dosis de Tdap puede administrarse antes de la marca de los 10 años; por lo tanto, es recomendable que los adultos hablen con sus proveedores de atención médica sobre lo que debe hacerse en su situación específica. **Resulta especialmente importante vacunarse con la Tdap al menos dos semanas antes de entrar en contacto cercano con el bebé para las familias y las personas que cuidan de los recién nacidos.**



What is pinworm infection?

This infection is caused by a small, white intestinal worm called *Enterobius vermicularis* (*EN-ter-O-be-us ver-MIK-u-lar-is*). Pinworms are about the length of a staple and live in the rectum of humans. While an infected person sleeps, female pinworms leave the intestines through the anus and deposit eggs on the surrounding skin.

What are the symptoms of a pinworm infection?

Itching around the anus, disturbed sleep, and irritability are common symptoms. If the infection is heavy, symptoms may also include loss of appetite, restlessness, and difficulty sleeping. Symptoms are caused by the female pinworm laying her eggs. Most symptoms of pinworm infection are mild; many infected people have no symptoms.

Who is at risk for pinworm infection?

Pinworm is the most common worm infection in the United States. School-age children, followed by preschoolers, have the highest rates of infection. In some groups nearly 50% of children are infected. Infection often occurs in more than one family member. Adults are less likely to have pinworm infection, except mothers of infected children. Child care centers and other institutional settings often have cases of pinworm infection.

How is pinworm infection spread?

Pinworm eggs are infective within a few hours after being deposited on the skin. They can survive up to 2 weeks on clothing, bedding, or other objects. You or your children can become infected after accidentally ingesting (swallowing) infective pinworm eggs from contaminated surfaces or fingers.

How is pinworm infection diagnosed?

If pinworms are suspected, transparent adhesive tape (often called the "scotch tape test") or a pinworm paddle (supplied by your health care provider) are applied to the anal region. The eggs become glued to the sticky tape or paddle and are identified by examination under a microscope. Because bathing or having a bowel movement may remove eggs, the test should be done as soon as you wake up in the morning. You may have to provide several samples to your health care provider for examination. Since scratching of the anal area is common, samples taken from under the fingernails may also contain eggs. Eggs are rarely found during lab examinations of stool or urine. At night, the adult worms can sometimes be seen directly in bedclothes or around the anal area.

How is pinworm infection treated?

With either prescription or over-the-counter drugs. You should consult your health care provider before treating a suspected case of pinworm. Treatment involves a two-dose course. The second dose should be given 2 weeks after the first.

What if the pinworm infection occurs again?

The infected person should be treated with the same two-dose treatment. Close family contacts should also be treated. If the infection occurs again, you should search for the source of the infection. Playmates, schoolmates, close contacts outside the house, and household members should be considered. Each infected person should receive the usual two-dose treatment. In some cases it may be necessary to treat with more than two doses. One option is four to six treatments spaced 2 weeks apart.

How can I prevent the spread of infection and reinfection?

- Bathe when you wake up to help reduce the egg contamination.
- Change and wash your underwear each day. Frequent changing of night clothes are recommended.
- Change underwear, night clothes, and sheets after each treatment. Because the eggs are sensitive to sunlight, open blinds or curtains in bedrooms during the day.
- Personal hygiene should include washing hands after going to the toilet, before eating and after changing diapers.
- Trim fingernails short.
- Discourage nail-biting and scratching bare anal areas. These practices help reduce the risk of continuous self reinfection.

Cleaning and vacuuming the entire house or washing sheets every day are probably not necessary or effective. Screening for pinworm infection in schools or institutions is rarely recommended. Children may return to day care after the first treatment dose, after bathing, and after trimming and scrubbing nails.



Rabies

What is rabies?

Rabies is a deadly disease caused by a virus that attacks the central nervous system. The virus is present primarily in the saliva, brain tissue and spinal fluid of a rabid animal.

What animals can get rabies?

Rabies can affect all mammals. Since 1995 in the United States, more than 7,000 animals per year--most of them wild--have been diagnosed as having the disease. The disease is found in all states except Hawaii, as well as in Canada, Mexico and most other countries around the world.

In wild animal species, rabies is more common in bats, skunks, raccoons and foxes, but the disease also has been found in deer and in large rodents, such as woodchucks. Cats, dogs and livestock can get rabies, too, if they are not vaccinated. Some animals, including chipmunks, gerbils, guinea pigs, hamsters, mice, rabbits, rats and squirrels, rarely get rabies. Birds, fish, insects, lizards, snakes and turtles never get rabies.

Most of the recent cases of human rabies that have occurred in the United States have been caused by rabies virus from bats. In Illinois, rabid bats can be found anywhere. Awareness that bats can be a source of the rabies virus can help people protect themselves.

Although bats can carry the rabies virus, most bats are not infected with it. The only way rabies can be diagnosed in a bat, however, is by laboratory testing. There are several signs, though, that could indicate a bat is more likely to be infected with the rabies virus. Bats seen during the day, those found in a place where bats are usually not found (e.g., in a room in your home, on your lawn, etc.) or bats that are unable to fly are more likely to be infected than others. Bats, like all wild animals, should never be handled.

People usually know when they have been bitten by a bat, but there are instances when a bite may not be apparent. Bats have very small teeth and marks made by

these teeth may not be easy to see. If you find yourself in close proximity to a bat and cannot assure you were not exposed to it, you should call your doctor or your local health department; they can help to determine if you could have been exposed to rabies. For example, if you awaken and find a bat in your bedroom, if you see a bat in the room of an unattended young child, or if you see a bat near a mentally impaired or intoxicated person, a doctor or local health department should be consulted. Do not discard the bat and do not damage the bat's head.

What are the signs of rabies in an animal?

The first sign of rabies is usually a change in the animal's behavior. An animal need not be "foaming at the mouth" to have rabies. Other signs include difficulty walking, a general appearance of sickness or a change in the animal's normal behavior. For example, if an animal that is normally wild and avoids contact with humans approaches a picnic area, campsite or home and appears tame or friendly, consider it rabid. Conversely, if a normally tame and friendly animal becomes hostile or aggressive without provocation, it too should be considered rabid. A rabid animal usually dies within one week after showing signs of the disease.

How are people exposed to rabies?

People usually are exposed to the rabies virus when an infected animal bites them. Exposure may occur if the animal's saliva enters an open cut or mucous membrane (nose, mouth, eyes). The presence of a bat in a home, or any contact with a bat, represents a possible hazard for rabies and should be reported to the local health department so that the circumstances can be evaluated. The last human case in Illinois was reported in 1954.

What should a person do if an animal bite occurs?

Wash the wound thoroughly with soap and water and seek medical attention immediately. The local health department or the county animal control office also should be notified immediately. The animal should be captured without damaging its head and only if direct contact with the animal can be avoided.

If an apparently healthy domestic dog, cat or ferret bites a human, it must be captured, confined and professionally observed for 10 days following the bite. If the animal remains healthy during this period, it would not have transmitted rabies at the time of the bite. There is no reliable observation period established for non-domestic animals. If a person is bitten by a non-domestic animal and it is available for testing, testing should be done immediately. All animal bites should be reported to the local animal control office.

If an animal suspected of having rabies cannot be observed or tested, or if it tests positive for rabies, treatment of the individual with rabies immune globulin and the

vaccine series must begin immediately. Vaccine injections are given in the arm.

People in high-risk occupations--for example, veterinarians, wildlife biologists, wildlife rehabilitators, animal control officers and taxidermists--should consider getting the rabies vaccine to protect themselves from exposures that could occur in their work. This type of vaccination (pre-exposure vaccination) consists of three rabies vaccine injections. These vaccinated persons should have their rabies titers tested every two years. If their titer falls below 1:5 they should receive a booster vaccination. A person already vaccinated and later exposed to rabies must receive two booster injections three days apart immediately after exposure.

What if a pet is exposed to a rabid animal?

If your pet has been in a fight with another animal call your veterinarian. A vaccinated pet may need a booster dose of rabies vaccine as soon as possible. Unvaccinated animals exposed to a known rabid animal must be confined and professionally observed for six months or euthanized.

What can people do to protect themselves and their pets from rabies?

- Do not feed, touch or adopt wild animals or stray dogs or cats.
- Vaccinated pets serve as a buffer between rabid wildlife and humans, so be sure dogs and cats are up-to-date on their rabies vaccinations. Consult with your veterinarian about when your pet needs to be vaccinated .
- Do not allow pets to roam free.
- Do not attract wild animals to your home or yard. Store bird seed or other animal feed in containers with tight-fitting lids. Feed pets indoors. Make sure garbage cans are tightly capped. Board up any openings to your attic, basement, porch or garage. Cap chimneys with screens.
- Encourage children to immediately tell an adult if they are bitten or scratched by an animal. Teach children not to approach or to touch any animal they do not know.
- Report all animal bites to the local animal control.

If a wild animal comes on your property, let it wander away. Bring children and pets indoors and alert neighbors. If the animal is acting abnormally (nocturnal animal around during daylight hours, animal having trouble walking etc) you should contact your local animal control.

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Respiratory syncytial virus

Clinical features: Respiratory syncytial virus (RSV) is the most common cause of bronchiolitis and pneumonia among infants and children under 1 year of age. Illness begins most frequently with fever, runny nose, cough, and sometimes wheezing. During their first RSV infection, between 25% and 40% of infants and young children have signs or symptoms of bronchiolitis or pneumonia, and 0.5% to 2% require hospitalization. Most children recover from illness in 8 to 15 days. The majority of children hospitalized for RSV infection are under 6 months of age. RSV also causes repeated infections throughout life, usually associated with moderate-to-severe cold-like symptoms; however, severe lower respiratory tract disease may occur at any age, especially among the elderly or among those with compromised cardiac, pulmonary, or immune systems.

The virus: RSV is a negative-sense, enveloped RNA virus. The virion is variable in shape and size (average diameter of between 120 and 300 nm), is unstable in the environment (surviving only a few hours on environmental surfaces), and is readily inactivated with soap and water and disinfectants.

Epidemiologic features: RSV is spread from respiratory secretions through close contact with infected persons or contact with contaminated surfaces or objects. Infection can occur when infectious material contacts mucous membranes of the eyes, mouth, or nose, and possibly through the inhalation of droplets generated by a sneeze or cough. In temperate climates, RSV infections usually occur during annual community outbreaks, often lasting 4 to 6 months, during the late fall, winter, or early spring months. The timing and severity of outbreaks in a community vary from year to year. RSV spreads efficiently among children during the annual outbreaks, and most children will have serologic evidence of RSV infection by 2 years of age.

Diagnosis: Diagnosis of RSV infection can be made by virus isolation, detection of viral antigens, detection of viral RNA, demonstration of a rise in serum antibodies, or a combination of these approaches. Most clinical laboratories use antigen detection assays to diagnose infection.

Treatment: For children with mild disease, no specific treatment is necessary other than the treatment of symptoms (e.g., acetaminophen to reduce fever). Children with severe disease may require oxygen therapy and sometimes mechanical ventilation. Ribavirin aerosol may be used in the treatment of some patients with severe disease. Some investigators have used a combination of immune globulin intravenous (IGIV) with high titers of neutralizing RSV antibody (RSV-IGIV) and ribavirin to treat patients with compromised immune systems.

Prevention: Development of an RSV vaccine is a high research priority, but none is yet available. Current prevention options include good infection-control practices, RSV-IGIV, and an anti-RSV humanized murine monoclonal antibody. RSV-IGIV or the anti-RSV humanized murine monoclonal antibody can be given during the RSV outbreak season to prevent serious complications of infection in some infants and children at high risk for serious RSV disease (e.g., those with chronic lung disease and prematurely

born infants with or without chronic lung disease). Frequent handwashing and not sharing items such as cups, glasses, and utensils with persons who have RSV illness should decrease the spread of virus to others. Excluding children with colds or other respiratory illnesses (without fever) who are well enough to attend child care or school settings will probably not decrease the transmission of RSV, since it is often spread in the early stages of illness. In a hospital setting, RSV transmission can and should be prevented by strict attention to contact precautions, such as handwashing and wearing gowns and gloves



RINGWORM

(Tinea)

What is Ringworm?

Ringworm is a fungal infection that may affect the body, feet or scalp. This infection occurs most commonly in children between 2–10 years of age.

What are the Symptoms of Ringworm?

Ringworm begins as a small elevation of the skin with raised edges and a central clear area. The ring-like rash is often itchy and may appear flaky or moist and crusted and it may burn. When present in the scalp the area is red and the scalp may have a dandruff-like scaling. Infected hairs become brittle and break off easily and can result in hair loss.

How is Ringworm Spread?

Ringworm is spread by direct skin or scalp contact or indirect contact with contaminated items such as combs, brushes, clothing, hats, barber clippers, theater seats and unwashed shower or pool surfaces. Infections can be acquired from pets and farm animals. A person is contagious as long as active lesions are present.

The time between exposure to the fungus and development of symptoms (incubation period) is 10-14 days.

How is Ringworm Treated?

Ringworm is usually treated with antifungal medications (oral and/or creams/ointments) prescribed by a doctor.

How Can the Spread of Ringworm be Prevented/Limited?

Frequent handwashing and avoiding contact with skin and scalp lesions will minimize transmission. Additionally towels, bedding, clothing, hats, combs etc. should not be shared. If a child's lesions cannot be covered, the child should be excluded until 24 hours after treatment begins and the lesions begin to shrink. Environmental surfaces and toys should be sanitized on a routine basis. Maintain general cleanliness in showers and dressing rooms and ensure shower rooms drain rapidly. Examine household contacts and pets for lesions and treat promptly if needed.



ROSEOLA

(Exanthem Subitum / Sixth Disease)

What is Roseola?

Roseola is a viral infection that is usually seen in children under 4 years of age, commonly before 2 years of age. It is caused most commonly by a human herpesvirus 6 (HHV-6) and sometimes by human herpesvirus 7 (HHV-7).

What are the Symptoms of Roseola?

Symptoms of Roseola include a high fever ($> 103^{\circ}\text{F}$) that lasts 3-7 days. Fever is followed by a red raised rash which appears on the trunk first and then spreads to the neck, face, arms and legs. The rash fades on pressure and usually lasts 1-2 days. Symptoms are generally mild but febrile seizures can occur.

How is Roseola Spread?

Roseola is spread from person to person. More than 75% of healthy adults have the HHV-6 and HHV-7 viruses present in their saliva and it is therefore thought that infection of a child is most likely acquired from an asymptomatic adult. Roseola is not very contagious. It is unknown when a person is contagious with roseola, but the communicable period is probably greatest during the fever phase, before appearance of the rash.

The time between exposure to the HHV-6 virus and development of symptoms (incubation period) is 6 – 10 days. The incubation period for HHV-7 is unknown.

How is Roseola Treated?

Since this is a viral illness there is no specific treatment, or medication to take. Provide ample opportunity for rest and drink plenty of fluids if fever is present. Roseola ordinarily resolves on its own.



ROTAVIRUS

Rotavirus is a virus that causes severe diarrhea and vomiting. It affects mostly babies and young children. Diarrhea and vomiting can lead to serious dehydration (loss of body fluid). If dehydration is not treated, it can be deadly. The rotavirus vaccine protects against this illness.

What are the symptoms of rotavirus?

Rotavirus may cause the following:

- Fever
- Watery diarrhea
- Vomiting
- Stomach pain

Diarrhea and vomiting may last for three days to eight days. Children may stop eating and drinking while they are sick.

How serious is rotavirus?

Rotavirus can be very harmful. Diarrhea, vomiting and fever can all cause a loss of body fluids. This leads to dehydration, which can be very dangerous, especially for babies and young children. Some children need an IV (needle in their vein) in the hospital to replace lost fluids.

How does rotavirus spread?

Rotavirus spreads easily. The virus is in the stool (feces) of people who are infected with the virus. It is spread by hands, diapers, or objects like toys, changing tables, or doorknobs that have a small amount of the stool on them. The disease commonly spreads in families, hospitals, and child care centers.

Rotavirus is a tough virus. It can live on objects for several days unless it is killed by a disinfectant (cleaner that kills germs). It is very hard to prevent rotavirus with just hand-washing and cleaning with a disinfectant.

Vaccination is the best way to keep children safe from rotavirus.

Can rotavirus be prevented?

The best prevention against rotavirus is the rotavirus vaccine (RotaTeq® and Rotarix®). Rotavirus vaccines protect children by preparing their bodies to fight the virus. Almost all children (85 to 98 children out of 100) who get the rotavirus vaccine will be protected from severe disease caused by the virus. The vaccine will not stop diarrhea or vomiting caused by other germs, though.



RUBELLA

What is rubella?

Rubella, also called German measles, is a viral illness that is spread from person to person by breathing in droplets of respiratory secretions exhaled by an infected person. It also may be spread by touching the nose or mouth after a person's hands have been in contact with secretions (such as saliva) of an infected person.

How common is rubella?

Rubella and congenital rubella syndrome, a condition that affects newborn infants when the mother transfers rubella to the baby, became nationally reportable diseases in 1966. Prior to this, epidemics were occurring every six to nine years. Following vaccine licensure in 1969, no further large epidemics have occurred, and the number of U.S. cases has dropped annually from 58 per 100,000 in the pre-vaccine era to 0.5 per 100,000 by 1983. Since 1994, the disease has occurred predominately among persons 20 to 39 years old; most of these persons were born outside the U.S. in areas where rubella vaccine is not routinely given. The decrease in rubella cases has paralleled increased efforts to vaccinate susceptible adolescents and young adults, especially women.

Outbreaks continue to occur among groups of susceptible persons who congregate in locations that increase their exposure, such as workplaces, and among persons with religious and philosophic exemption to vaccination. Several recent outbreaks have occurred among Hispanic persons. In fact, in 1996, two-thirds of reported cases were among Hispanics.

What are the symptoms of rubella?

Symptoms of rubella include an acute onset of rash (small, fine pink spots) that starts on the face and spreads to the torso, then to the arms and legs, with low-grade fever, swollen lymph nodes or conjunctivitis. Many (25 percent to 50 percent) cases are asymptomatic, especially in children, but adults may experience symptoms for one to

five days. Incubation is normally 16-18 days, but can be 12 -23 days. Persons with rubella are infectious from seven days before rash onset to seven days after rash onset.

Rubella can be especially dangerous to pregnant women, who may transfer infection to the baby, resulting in abortions, miscarriages, stillbirths and severe birth defects. The most common congenital defects are cataracts and other eye defects, heart defects, sensorineural deafness, mental retardation and other immunodeficiencies.

Should a person with rubella stay home?

The disease is most contagious when the rash is erupting. In schools and other educational institutions, exclusion of persons without valid evidence of immunity and persons exempted from rubella vaccination because of medical, religious or other reasons should be enforced and continue until two weeks after the onset of rash of the last reported case in the outbreak setting. In medical settings, mandatory exclusion and vaccination of adults should be practiced.

What is the treatment for rubella?

Treatment includes bed rest, lots of fluids and medicine for fever, headache or joint pain. Antibiotics neither cure nor prevent rubella. There are no antiviral drugs for treating rubella.

Can rubella be prevented?

The best prevention against rubella is immunization. The rubella vaccine is part of the MMR (measles, mumps, rubella) vaccine administered to children beginning at 12 months of age. Susceptible hospital personnel, volunteers, trainees, nurses, physicians and all persons who are not immune should be vaccinated against rubella. Women who are pregnant or intend to become pregnant within three months, however, should not receive rubella vaccine.

Acquired immunity after illness is permanent.

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RUNNY NOSE

What causes a runny nose during a cold?

A runny nose (with green or yellow mucus) is a normal part of what happens during the common cold and as it gets better. When germs that cause colds first infect the nose and sinuses, the nose makes clear mucus. This helps wash the germs from the nose and sinuses. After two or three days, the body's immune cells fight back, changing the mucus to a white or yellow color. As the bacteria that live in the nose grow back, they may also be found in the mucus, which changes the mucus to a greenish color. This is normal and does not mean an antibiotic is needed.

How are colds spread?

Colds are spread from person to person by direct or close contact with the mouth or nose secretions.

The time between exposure and actual development of a cold is 2-14 days. An individual who has a cold is contagious usually a few days before signs or symptoms.

How should a cold be treated?

The best treatment is to wait and watch. Runny nose, cough, and symptoms like fever, headache, and muscle aches may be bothersome, but antibiotics will not make them go away any faster. Some people find that using a cool mist vaporizer or using saltwater nose drops provides some relief.

Are antibiotics ever needed for a runny nose?

Antibiotics are needed only if a doctor determines that an individual has sinusitis. A doctor may prescribe other medicine to help with a cold's other symptoms like fever and cough, but antibiotics are not needed to treat the runny nose. Taking antibiotics when they are not needed can be harmful. Each time someone takes antibiotics, they are more likely to carry resistant germs in their noses and throats. These resistant germs cannot be killed by common antibiotics. This may result in the need for more costly antibiotics, antibiotics given by needle, or may even need to be in the hospital to get antibiotics. Since a runny nose almost always gets better on its own, it is better to wait and take antibiotics only when they are needed.



Salmonella

What is *Salmonella*?

Salmonella bacteria cause much of the food poisoning in the world, including an estimated 1,400,000 cases of salmonellosis in the United States each year. In Illinois about 1,500 to 2,000 cases of this foodborne illness are reported each year.

Salmonella is a general name for a group of about 2,000 closely related bacteria that cause illness by reproducing in the digestive tract.

How is it spread?

Salmonella live in the intestinal tracts of humans and other animals, including birds. Humans are usually infected by eating foods contaminated with animal feces. Contaminated foods are often of animal origin, such as beef, poultry, milk or eggs, but any food, including fruits and vegetables, may become contaminated. Contaminated foods usually look and smell normal and the contamination should not be expected to be visible.

Person-to-person transmission of *salmonella* occurs when an infected person's feces, unwashed from his or her hands, contaminates food during preparation or comes into direct contact with another person. *Salmonella* can also be acquired directly from animals such as pets, birds, fish, dogs, cats and turtles. The U.S. Food and Drug Administration banned the sale of turtles smaller than 4 inches wide in 1975 to prevent the spread of *salmonella*.

What are the symptoms?



Color-enhanced scanning electron micrograph showing *Salmonella typhimurium* (red) invading cultured human cells

Symptoms may include headache, muscle aches, diarrhea, vomiting, abdominal cramping, chills, fever, nausea and dehydration. Symptoms usually appear six to 72 hours after ingestion of the bacteria, but can be longer if fewer organisms are ingested. Persons can be infected with the bacteria without having symptoms. Persons with and without symptoms shed the bacteria in their stool, which is why proper handwashing after toileting and before handling food is so important. Children younger than 1 year old, people who have had ulcer surgery or take antacids and those with weakened immune systems are most susceptible to salmonella infection.

Salmonellosis is seldom fatal (the fatality rate is less than 1 percent). Two or three weeks after being infected with salmonella, one in 10,000 cases develops reactive arthritis or Reiter's syndrome as a complication. These patients also may develop an inflammation of the urethra and eyes.

How is salmonellosis treated?

Fluids are recommended to prevent dehydration because the diarrhea that flushes bacteria out of the body drains a great deal of liquid. Pain relievers and fever reducers may make the person more comfortable.

Most cases of salmonellosis are not treated with antibiotics. In fact, antibiotics may prolong the period during which the person can infect others. Antibiotics sometimes are prescribed for infants, the chronically ill and the elderly to treat or prevent complications in those at increased risk for invasive disease.

Can salmonellosis be prevented?

People are far more likely to contract salmonellosis at home than in a restaurant, so be sure to wash hands with soap and water after toileting and before handling foods.

Salmonella bacteria are killed when food is thoroughly cooked. This means cooking ground beef to at least 155 degrees and making sure all food is cooked properly. Once cooked, any food held in a buffet should be kept hotter than 140 degrees. Cross-contamination –where food is contaminated in the kitchen after it has been cooked – may be avoided by using different utensils, plates, cutting boards and counter tops before and after cooking. Cooked food that stands at room temperature for a long time, especially poultry, is at risk.

Defrost frozen food in the refrigerator or microwave. Refrigerator temperatures should be kept colder than 40 degrees. Rinse poultry in cold water before cooking. Avoid raw milk, raw hamburger meat and raw eggs (many recipes, such as those for homemade ice cream, call for eggs with no subsequent cooking; substitute pasteurized

eggs in these recipes). Food contaminated with salmonella may look, smell and taste normal.

Because fruits and vegetables have now been identified as a source of salmonella, it is important that these food items be thoroughly washed in running water before they are eaten.

Wash utensils and wooden cutting boards thoroughly with hot, soapy water. Salmonella may lie dormant for a year or more and then "wake up" when food is present. They also may live in the cut marks on a wooden cutting board. Use an acrylic board that can go in the dishwasher. If using a wooden board, rub down or spray the board with a solution of one ounce bleach to one gallon water and allow to air dry. Cutting boards for raw meat and poultry should not be used for cheese, raw vegetables and other foods that will not be cooked before being served.

To prevent the spread of salmonella, wash hands thoroughly after using the bathroom and before handling food. Do not allow an infected person to handle food or work in the kitchen.

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Scabies

What is scabies?

Human scabies is caused by an infestation of the skin by the human itch mite (*Sarcoptes scabieivar. hominis*). The microscopic scabies mite burrows into the upper layer of the skin where it lives and lays its eggs. The most common symptoms of scabies are intense itching and a pimple-like skin rash. The scabies mite usually is spread by direct, prolonged, skin-to-skin contact with a person who has scabies. An infested person can spread scabies even if he or she has no symptoms. Humans are the source of infestation; animals do not spread human scabies.

Scabies occurs worldwide and affects people of all races and social classes. Scabies can spread rapidly in crowded conditions where close body contact is frequent. Institutions such as nursing homes, extended-care facilities, and prisons are often sites of scabies outbreaks

How do you get scabies?

Sexual transmission: transmission is more likely to occur when partners spend the night together than with a brief sexual encounter.

Nonsexual transmission : possibly from sleeping in infested bedding, wearing infested clothing, even routine contact such as shaking or holding hands. Transmission from a toilet seat may be possible, but is unlikely.

How long does it take before symptoms appear?

The female mite burrows under the skin and begins laying eggs within hours (two to three eggs daily). The eggs hatch and become adult mites within 10 days. Symptoms, primarily itching, appear approximately **four weeks** from the time of contact as a result of sensitization to the presence of immature mites.

How long are you infectious?

A person with scabies is considered infectious as long as they have not been treated. Infested pieces of clothing and bedding are considered infectious until treated. After treatment, a person may unknowingly reinfest themselves by coming into contact with the same person who had scabies to begin with or with someone else who has scabies.

What are the symptoms of scabies?

The most common symptoms of scabies, itching and a skin rash, are caused by sensitization (a type of “allergic” reaction) to the proteins and feces of the parasite. Severe itching (pruritus), especially at night, is the earliest and most common symptom of scabies. A pimple-like (papular) itchy (pruritic) “scabies rash” is also common. Itching and rash may affect much of the body or be limited to common sites such as:

- Between the fingers
- Wrist
- Elbow
- Armpit
- Penis
- Nipple
- Waist
- Buttocks
- Shoulder blades

The head, face, neck, palms and soles often are involved in infants and very young children, but usually not adults and older children.

Tiny burrows sometimes are seen on the skin; these are caused by the female scabies mite tunneling just beneath the surface of the skin. These burrows appear as tiny raised and crooked (serpiginous) grayish-white or skin-colored lines on the skin surface. Because mites are often few in number (only 10-15 mites per person), these burrows may be difficult to find. They are found most often in the webbing between the fingers, in the skin folds on the wrist, elbow or knee, and on the penis, breast or shoulder blades.

How is scabies diagnosed?

Diagnosis of a scabies infestation usually is made based upon the customary appearance and distribution of the rash and the presence of burrows.

Whenever possible, the diagnosis of scabies should be confirmed by identifying the mite or mite eggs or fecal matter (scybala). This can be done by carefully removing

the mite from the end of its burrow using the tip of a needle or by obtaining a skin scraping to examine under a microscope for mites, eggs or mite fecal matter (scybala). However, a person can still be infested even if mites, eggs or fecal matter cannot be found; fewer than 10-15 mites may be present on an infested person who is otherwise healthy.

How is scabies treated?

It is important to remember that the first time a person gets scabies they usually have no symptoms during the first two to six weeks they are infested; however they can still spread scabies during this time.

In addition to the infested person, treatment also is recommended for household members and sexual contacts, particularly those who have had prolonged direct skin-to-skin contact with the infested person. Both sexual and close personal contacts who have had direct prolonged skin-to-skin contact with an infested person within the preceding month should be examined and treated. All persons should be treated at the same time to prevent reinfestation.

Products used to treat scabies are called *scabicides* because they kill scabies mites; some also kill mite eggs. Scabicides used to treat human scabies are available only with a doctor's prescription. No "over-the-counter" (non-prescription) products have been tested and approved to treat scabies. The instructions contained in the box or printed on the label always should be followed carefully. Always contact a doctor or pharmacist if unsure how to use a particular medicine.

Scabicide lotion or cream should be applied to all areas of the body from the neck down to the feet and toes. In addition, when treating infants and young children, scabicide lotion or cream also should be applied to their entire head and neck because scabies can affect their face, scalp, and neck, as well as the rest of their body. The lotion or cream should be applied to a clean body and left on for the recommended time before washing it off. Clean clothing should be worn after treatment.

Bedding, clothing and towels used by infested persons or their household, sexual and close contacts (as defined above) anytime during the three days before treatment should be decontaminated by washing in hot water and drying in a hot dryer, by dry-cleaning, or by sealing in a plastic bag for at least 72 hours. Scabies mites generally do not survive more than two to three days away from human skin.

Because the symptoms of scabies are due to a hypersensitivity reaction (allergy) to mites and their feces (scybala), itching still may continue for several weeks after treatment even if all the mites and eggs are killed. If itching still is present more than

two weeks to four weeks after treatment or if new burrows or pimple-like rash lesions continue to appear, retreatment may be necessary.

Skin sores that become infected should be treated with an appropriate antibiotic prescribed by a doctor.

Use of insecticide sprays and fumigants is not recommended.

How can I keep from getting scabies?

- Abstinence (not having sex) is the best form of prevention.
- Mutual monogamy (having sex with only 1 uninfected partner who only has sex with you) is effective.
- Limit the number of sexual partners to reduce exposure to all STDs.
- Use latex condoms for all types of sexual penetration (oral, vaginal, anal). **Note: Latex condoms, when used consistently and correctly, can reduce the risk of transmission of other STDs, but are not considered effective against scabies.**
- Know your partner(s). Careful consideration and open communication between partners may protect all partners involved from infection.
- Have regular check-ups if you are sexually active.
- If you have an STD, don't have sex (oral, vaginal, or anal) until all partners have been treated.
- Prompt, qualified, and appropriate medical intervention and treatment and follow-up are important steps in breaking the disease cycle.

What about complications from scabies?

- Secondary bacterial infections may be caused by aggressive scratching.
- Scabies is not usually known to cause anything more than discomfort and inconvenience.

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SHIGELLOSIS

What is shigellosis?

Shigellosis is an infectious disease caused by a group of bacteria called *Shigella*. Most people who are infected with *Shigella* develop diarrhea, fever and stomach cramps a day or two after being exposed to the bacterium. The diarrhea is often bloody. Shigellosis usually resolves in five to seven days. In some persons, especially young children and the elderly, the diarrhea can be so severe the patient needs to be hospitalized. A severe infection with high fever also may be associated with seizures in children younger than 2 years of age. Some persons who are infected may have no symptoms at all, but may still pass the *Shigella* bacteria to others.

What sort of germ is *Shigella*?

The *Shigella* germ is actually a family of bacteria that can cause diarrhea in humans. These microscopic living creatures, which can pass from person to person, were discovered 100 years ago by a Japanese scientist named Shiga, for whom they are named. There are several kinds of *Shigella* bacteria but only two are common in the United States.

How are *Shigella* infections diagnosed?

Many different kinds of diseases can cause diarrhea and bloody diarrhea. Effective treatment depends on which germ is causing the diarrhea. Determining that *Shigella* is the cause of the illness depends on laboratory tests that identify the bacteria in the stools of infected persons. These tests are sometimes not performed unless the laboratory is instructed specifically to look for the organism. The laboratory also can do special tests to tell which type of *Shigella* the person has and which antibiotics, if any, would be best to treat it.

How common is shigellosis?

Every year, about 18,000 laboratory confirmed cases of shigellosis are reported in the United States; 1,300 in Illinois. Because many milder cases are not diagnosed or reported, the actual number of infections may be 20 times greater. Shigellosis is particularly common and causes recurrent problems in settings where hygiene is poor and can sometimes sweep through entire communities. Shigellosis is more common in summer than winter. Children, especially toddlers from 2 to 4 years of age, are the most likely to get shigellosis. Many cases are related to the spread of illness in child care settings and many more are the result of the spread of the illness in families with small children. In the developing world, shigellosis is far more common and is present in most communities most of the time.

How are *Shigella* infections treated?

Shigellosis can usually be treated with antibiotics. The most commonly used antibiotics are ampicillin, trimethoprim/sulfamethoxazole, nalidixic acid or ciprofloxacin. Appropriate treatment kills the *Shigella* bacteria that might be present in a patient's stools and shortens the illness. Unfortunately, some *Shigella* bacteria have become resistant to antibiotics and using antibiotics to treat shigellosis can actually make the germs more resistant in the future. Persons with mild infections will usually recover quickly without antibiotic treatment. Therefore, when many persons in a community are affected by shigellosis, antibiotics are sometimes used selectively to treat only the more severe cases. Antidiarrheal agents (e.g., loperamide or diphenoxylate with atropine) are likely to make the illness worse and should be avoided.

Does shigellosis have any long-term effects?

Persons with diarrhea usually recover completely, although it may be several months before their bowel habits are entirely normal. About 3 percent of persons who are infected with one type of *Shigella* (*Shigella flexneri*) will later develop pains in their joints, irritation of the eyes and painful urination. This is called Reiter's syndrome and it can last for months or years, sometimes leading to chronic arthritis, which is difficult to treat. Reiter's syndrome is caused by a reaction to *Shigella* infection that happens only in people who are genetically predisposed to it. Once someone has shigellosis, they are not likely to get infected with that specific type again for at least several years. However, they can still get infected with other types of *Shigella*.

How do people catch shigellosis?

The *Shigella* bacteria pass from one infected person to the next. The bacteria are present in the diarrheal stools of infected person while they are sick and for a week or two afterwards. Most infections occur when the germ passes from the stool or soiled

fingers of one person to the mouth of another person. This happens when basic hygiene and handwashing habits are inadequate. It is particularly likely to occur among toddlers who are not fully toilet trained. Family members and playmates of such children are at high risk of becoming infected.

Shigella infections also may be acquired from eating contaminated food. Contaminated food may look and smell normal. Food may become contaminated by infected food handlers who forget to wash their hands with soap and water after using the bathroom. Vegetables can become contaminated if they are harvested from a field with sewage in it. Flies can breed in infected feces and then contaminate the food. *Shigella* infections also can be acquired by drinking or swimming in contaminated water. Water may become contaminated if sewage runs into it or if someone with shigellosis swims in it.

What can a person do to prevent this illness?

There is no vaccine to prevent shigellosis. However, the spread of *Shigella* from an infected person to other persons can be stopped by careful handwashing with soap and water. Frequent, supervised handwashing of all children should be followed in day care centers and in homes with young children (including children in diapers). When possible, young children with a *Shigella* infection who are still in diapers should not be in contact with uninfected children.

- People who have shigellosis should not prepare food or pour water for others until they have been shown to no longer be carrying the *Shigella* bacterium.
- If a child in diapers has shigellosis, everyone who changes the child's diapers should be sure the diapers are disposed of properly in a garbage can with a tightly fitted lid, and should wash his or her hands carefully with soap and warm water after changing and disposing of the diapers. After use, the diaper changing area should be wiped down with a disinfectant such as household bleach, or bactericidal sprays or wipes.
- Basic food safety precautions and regular drinking water treatment prevents shigellosis. At swimming beaches, having enough bathrooms near the swimming area helps to keep the water from becoming contaminated.
- Simple precautions taken while traveling to the developing world can prevent *Shigella* infections. Drink only treated or boiled water and eat only cooked hot foods or fruits you peel yourself. The same precautions prevent traveler's diarrhea in general.

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SHINGLES

Almost 1 out of every 3 people in the United States will develop shingles, also known as zoster or herpes zoster. There are an estimated 1 million cases each year in this country. Anyone who has recovered from chickenpox may develop shingles; even children can get shingles. However the risk of disease increases as a person gets older. About half of all cases occur among men and women 60 years old or older. About half of all shingles cases occur among men and women age 60 years and older. People who have medical conditions that keep their immune systems from working properly, such as certain cancers, including leukemia and lymphoma, and human immunodeficiency virus (HIV), and people who receive immunosuppressive drugs, such as steroids and drugs given after organ transplantation are also at greater risk of getting shingles.

People who develop shingles typically have only one episode in their lifetime. In rare cases, however, a person can have a second or even a third episode.

Shingles is caused by the varicella zoster virus, the same virus that causes chickenpox. After a person recovers from chickenpox, the virus stays in the body in a dormant (inactive) state. For reasons that are not fully known, the virus can reactivate years later, causing shingles. Herpes zoster is not caused by the same virus that causes genital herpes, a sexually transmitted disease.

Signs & Symptoms

Shingles usually starts as a painful rash on one side of the face or body. The rash forms blisters that typically scab over in 7–10 days and clears up within 2–4 weeks. Before the rash develops, there is often pain, itching, or tingling in the area where the rash will develop. This may happen anywhere from 1 to 5 days before the rash appears. Most commonly, the rash occurs in a single stripe around either the left or the right side of the body. In other cases, the rash occurs on one side of the face. In rare cases (usually among people with weakened immune systems), the rash may be more widespread and look similar to a chickenpox rash. Shingles can affect the eye and cause loss of vision. Other symptoms of shingles can include fever, chills, upset stomach.

Prevention

Shingles cannot be passed from one person to another. However, the virus that causes shingles, the varicella zoster virus, can be spread from a person with active shingles to a person who has never had chickenpox. In such cases, the person exposed to the virus might develop chickenpox, but they would not develop shingles. The virus is spread through direct contact with fluid from the rash blisters, not through sneezing, coughing or casual contact.

A person with shingles can spread the virus when the rash is in the blister-phase. A person is not infectious before blisters appear. Once the rash has developed crusts, the person is no longer contagious. Shingles is less contagious than chickenpox and the risk of a person with shingles spreading the virus is low if the rash is covered.

If you have shingles

- Keep the rash covered.
- Do not touch or scratch the rash.
- Wash your hands to prevent the spread of varicella zoster virus.
- Until your rash has developed crusts, avoid contact with
 - pregnant women who have never had chickenpox or the varicella vaccine;
 - premature or low birth weight infants; and
 - immunocompromised persons (such as persons receiving immunosuppressive medications or undergoing chemotherapy, organ transplant recipients, and people with HIV infection).

Prevention

The only way to reduce the risk of developing shingles and the long-term pain that can follow shingles is to get vaccinated. A vaccine for shingles is licensed for persons aged 60 years and older.

Treatment

Several antiviral medicines—acyclovir, valacyclovir, and famciclovir—are available to treat shingles. These medicines will help shorten the length and severity of the illness. But to be effective, they must be started as soon as possible after the rash appears. Thus, people who have or think they might have shingles should call their healthcare provider as soon as possible to discuss treatment options.

The shingles vaccine (Zostavax®) was recommended by the Advisory Committee on Immunization Practices (ACIP) in 2006 to reduce the risk of shingles and its associated pain in people age 60 years and older. Your risk for developing shingles increases as you age.

The Shingles Prevention Study involved individuals age 60 years and older and found the shingles vaccine significantly reduced disease in this age group. The vaccine is currently recommended for persons 60 years of age and older. Even people who have had shingles can receive the vaccine to help prevent future occurrences of the disease. At this time, CDC does not have a recommendation for routine use of shingles vaccine in persons 50 through 59 years old. However, the vaccine is approved by FDA for people in this age group.



Syphilis

What is syphilis?

Syphilis is a sexually transmitted disease (STD) caused by the bacterium *Treponema pallidum*. Syphilis can cause long-term complications and/or death if not adequately treated.

How common is syphilis?

During 2011, there were 46,042 new cases of syphilis, of which 13,970 were of primary and secondary (P&S) syphilis, the earliest and most transmissible stages of syphilis. During the 1990s, syphilis primarily occurred among heterosexual men and women of racial and ethnic minority groups; during the 2000s, however, cases increased among men who have sex with men (MSM). In 2002, rates of P&S syphilis were highest among men 30–39 years old, but by 2011, were highest among men 20–29 years old. This epidemiologic shift reflects increasing cases reported among young MSM in recent years. MSM accounted for 72 percent of all P&S syphilis cases in 2011.

Black, Hispanic, and other racial/ethnic minorities are disproportionately affected by P&S syphilis in the United States, with black Americans accounting for most of P&S syphilis among individuals who are not MSM.

While the rate of congenital syphilis (syphilis passed from pregnant women to their babies) has decreased in recent years, more cases of congenital syphilis are reported in the United States than cases of perinatal HIV infection. During 2011, 360 cases of congenital syphilis were reported, compared to an estimated 162 cases of perinatal HIV infection during 2010. Congenital syphilis rates were 15.0 times and 3.5 times higher among infants born to black and Hispanic mothers (33.0 and 7.6 cases per 100,000 live births, respectively) compared to white mothers (2.2 cases per 100,000 live births).

How is syphilis spread?

Syphilis is transmitted from person to person by direct contact with a syphilitic sore, known as a chancre. Chancres occur mainly on the external genitals, vagina, anus or in the rectum. Chancres also can occur on the lips and in the mouth. Transmission of syphilis occurs during vaginal, anal or oral sex. Pregnant women with the disease can transmit it to their unborn child.

How quickly do symptoms appear after infection?

The average time between infection with syphilis and the start of the first symptom is 21 days, but can range from 10 days to 90 days.

What are the symptoms of syphilis?

Primary Stage

The appearance of a single chancre marks the primary (first) stage of syphilis symptoms, but there may be multiple sores. The chancre is usually firm, round and painless. It appears at the location where syphilis entered the body. Possibly because these painless chancres can occur in locations that make them difficult to find (e.g., the vagina or anus), smaller proportions of MSM and women are diagnosed in primary stage than men having sex with women only. The chancre lasts three weeks to six weeks and heals regardless of whether a person is treated or not. However, if the infected person does not receive adequate treatment, the infection progresses to the secondary stage.

Secondary Stage

Skin rashes and/or mucous membrane lesions (sores in the mouth, vagina or anus) mark the second stage of symptoms. This stage typically starts with the development of a rash on one or more areas of the body. Rashes associated with secondary syphilis can appear when the primary chancre is healing or several weeks after the chancre has healed. The rash usually does not cause itching. The characteristic rash of secondary syphilis may appear as rough, red or reddish brown spots both on the palms of the hands and the bottoms of the feet. However, rashes with a different appearance may occur on other parts of the body, sometimes resembling rashes caused by other diseases. Sometimes rashes associated with secondary syphilis are so faint that they are not noticed. Large, raised, gray or white lesions, known as condyloma lata, may develop in warm, moist areas such as the mouth, underarm or groin region. In addition to rashes, symptoms of secondary syphilis may include fever, swollen lymph glands, sore throat, patchy hair loss, headaches, weight loss, muscle aches, and fatigue. The

symptoms of secondary syphilis will go away with or without treatment, but without treatment, the infection will progress to the latent and possibly late stages of disease.

Late and Latent Stages

The latent (hidden) stage of syphilis begins when primary and secondary symptoms disappear. Without treatment, the infected person will continue to have syphilis infection in their body even though there are no signs or symptoms. *Early latent syphilis* is latent syphilis where infection occurred within the past 12 months. *Late latent syphilis* is latent syphilis where infection occurred more than 12 months ago. Latent syphilis can last for years.

The late stages of syphilis can develop in about 15percent of people who have not been treated for syphilis, and can appear 10 years to 20 years after infection was first acquired. In the late stages of syphilis, the disease may damage the internal organs, including the brain, nerves, eyes, heart, blood vessels, liver, bones, and joints. Symptoms of the late stage of syphilis include difficulty coordinating muscle movements, paralysis, numbness, gradual blindness, and dementia. This damage may be serious enough to cause death.

Neurosyphilis

Syphilis can invade the nervous system at any stage of infection, and causes a wide range of symptoms varying from no symptoms at all, to headache, altered behavior, and movement problems that look like Parkinson's or Huntington's disease. This invasion of the nervous system is called "neurosyphilis."

Note: Health departments report syphilis by its stage of infection, noting "neurological manifestations," rather than using the term neurosyphilis.

HIV infection and syphilis symptoms

Individuals who are HIV-positive can develop symptoms very different from the symptoms described above, including hypopigmented skin rashes. HIV can increase the chances of developing syphilis with neurological involvement.

How does syphilis affect a pregnant woman?

The syphilis bacterium can infect the baby of a woman during her pregnancy. All pregnant women should be tested for syphilis at the first prenatal visit. The syphilis screening test should be repeated during the third trimester (28 weeks to 32 weeks gestation) and at delivery in women who are at high risk for syphilis, live in areas of

high syphilis morbidity, are previously untested, or had a positive screening test in the first trimester.

Depending on how long a pregnant woman has been infected, she may have a high risk of having a stillbirth (a baby born dead) or of giving birth to a baby who dies shortly after birth; untreated syphilis in pregnant women results in infant death in up to 40 percent of cases. Any woman who delivers a stillborn infant after 20 week's gestation should be tested for syphilis.

An infected baby born alive may not have any signs or symptoms of disease. However, if not treated immediately, the baby may develop serious problems within a few weeks. Untreated babies may become developmentally delayed, have seizures, or die. All babies born to mothers who test positive for syphilis during pregnancy should be screened for syphilis and examined thoroughly for evidence of congenital syphilis.

For pregnant women only penicillin therapy can be used to treat syphilis and prevent passing the disease to her baby; treatment with penicillin is extremely effective (success rate of 98percent) in preventing mother-to-child transmission. Pregnant women who are allergic to penicillin should be referred to a specialist for desensitization to penicillin.

How is syphilis diagnosed?

The definitive method for diagnosing syphilis is visualizing the spirochete via darkfield microscopy. This technique is rarely performed today because it is a technologically difficult method. Diagnoses are thus more commonly made using blood tests. There are two types of blood tests available for syphilis: 1) nontreponemal tests and 2) treponemal tests.

Nontreponemal tests (e.g., VDRL and RPR) are simple, inexpensive, and are often used for screening. However, they are not specific for syphilis, can produce false-positive results, and, by themselves, are not sufficient for diagnosis. VDRL and RPR should each have their antibody titer results reported quantitatively. Persons with a reactive nontreponemal test should receive a treponemal test to confirm a syphilis diagnosis. This sequence of testing (nontreponemal, then treponemal test) is considered the "classical" testing algorithm.

Treponemal tests (e.g., FTA-ABS, TP-PA, various EIAs, and chemiluminescence immunoassays) detect antibodies that are specific for syphilis. Treponemal antibodies appear earlier than nontreponemal antibodies and usually remain detectable for life, even after successful treatment. If a treponemal test is used for screening and the results are positive, a nontreponemal test with titer should be performed to confirm

diagnosis and guide patient management decisions. Based on the results, further treponemal testing may be indicated. For further guidance, please refer to the 2010 STD Treatment Guidelines. This sequence of testing (treponemal, then nontreponemal, test) is considered the “reverse” sequence testing algorithm. Reverse sequence testing can be more convenient for laboratories, but its clinical interpretation is problematic, as this testing sequence can identify individuals not previously described (e.g., treponemal test positive, nontreponemal test negative), making optimal management choices difficult.

Special note: Because untreated syphilis in a pregnant woman can infect and possibly kill her developing baby, every pregnant woman should have a blood test for syphilis. All women should be screened at their first prenatal visit. For patients who belong to communities and populations with high prevalence of syphilis and for patients at high risk, blood tests should be performed during the third trimester (at 28–32 weeks) and at delivery. For further information on screening guidelines, please refer to the 2010 STD Treatment Guidelines.

All infants born to mothers who have reactive nontreponemal and treponemal test results should be evaluated for congenital syphilis. A quantitative nontreponemal test should be performed on infant serum and, if reactive, the infant should be examined thoroughly for evidence of congenital syphilis. Suspicious lesions, body fluids, or tissues (e.g., umbilical cord, placenta) should be examined by darkfield microscopy and/or special stains. Other recommended evaluations may include analysis of cerebrospinal fluid by VDRL, cell count and protein, CBC with differential and platelet count, and long-bone radiographs. For further guidance on evaluation of infants for congenital syphilis, please refer to the 2010 STD Treatment Guidelines.

Who should be tested for syphilis?

Any person with signs or symptoms of primary infection, secondary infection, neurologic infection, or tertiary infection should be tested for syphilis.

Providers should routinely test persons who

- are pregnant
- are members of an at-risk subpopulation (i.e., persons in correctional facilities and MSM)
- describe sexual behaviors that put them at risk for STDs (i.e., having unprotected vaginal, anal, or oral sexual contact; having multiple sexual partners; using drugs and alcohol, and engaging in commercial or coerced sex)
- have partner(s) who have tested positive for syphilis; are sexually active and live in areas with high syphilis morbidity [Back to Top](#)

What is the link between syphilis and HIV?

Genital sores caused by syphilis make it easier to transmit and acquire HIV infection sexually. There is an estimated two- to five-fold increased risk of acquiring HIV if exposed to that infection when syphilis is present.

Ulcerative STDs that cause sores, ulcers or breaks in the skin or mucous membranes, such as syphilis, disrupt barriers that provide protection against infections. The genital ulcers caused by syphilis can bleed easily, and when they come into contact with oral and rectal mucosa during sex, increase the infectiousness of and susceptibility to HIV. Studies have observed that infection with syphilis was associated with subsequent HIV infection among MSM.

Having other STDs can indicate increased risk for becoming HIV infected

How is syphilis treated?

There are no home remedies or over-the-counter drugs that will cure syphilis, but syphilis is easy to cure in its early stages. A single intramuscular injection of long acting **Benzathine penicillin G** (2.4 million units administered intramuscularly) will cure a person who has primary, secondary or early latent syphilis. Three doses of long acting Benzathine penicillin G (2.4 million units administered intramuscularly) at weekly intervals is recommended for individuals with late latent syphilis or latent syphilis of unknown duration. Treatment will kill the syphilis bacterium and prevent further damage, but it will not repair damage already done.

Selection of the appropriate penicillin preparation is important to properly treat and cure syphilis. **Combinations of some penicillin preparations (e.g., Bicillin C-R, a combination of benzathine penicillin and procaine penicillin) are not appropriate treatments for syphilis**, as these combinations provide inadequate doses of penicillin.

Although data to support the use of alternatives to penicillin is limited, options for non-pregnant patients who are allergic to penicillin may include doxycycline, tetracycline, and for neurosyphilis, potentially probenecid. These therapies should be used only in conjunction with close clinical and laboratory follow-up to ensure appropriate serological response and cure.

Persons who receive syphilis treatment must abstain from sexual contact with new partners until the syphilis sores are completely healed. Persons with syphilis must notify their sex partners so that they also can be tested and receive treatment if necessary.

Will syphilis recur or "come back?"

Syphilis does not recur. However, having syphilis once does not protect a person from becoming infected again. Even following successful treatment, people can be *re-*infected. Patients with signs or symptoms that persist or recur or who have a sustained fourfold increase in nontreponemal test titer probably failed treatment or were reinfected. These patients should be retreated.

Because chancres can be hidden in the vagina, rectum or mouth, it may not be obvious that a sex partner has syphilis. Unless a person knows that their sex partners have been tested and treated, they may be at risk of being reinfected by an untreated partner. For further details on the management of sex partners, refer to the 2010 STD Treatment Guidelines.

How can syphilis be prevented?

Correct and consistent use of latex condoms can reduce the risk of syphilis only when the infected area or site of potential exposure is protected. However, a syphilis sore outside of the area covered by a latex condom can still allow transmission, so caution should be exercised even when using a condom. For persons who have latex allergies, synthetic non-latex condoms can be used but it is important to note that they have higher breakage rates than latex condoms. Natural membrane condoms are not recommended for STD prevention. Other individual-based interventions, such as the use of microbicide or male circumcision, do not prevent syphilis.

The surest way to avoid transmission of sexually transmitted diseases, including syphilis, is to abstain from sexual contact or to be in a long-term mutually monogamous relationship with a partner who has been tested and is known to be uninfected.

Partner-based interventions include partner notification – a critical component in preventing the spread of syphilis. Sexual partners of infected patients should be considered at risk and provided treatment per the 2010 STD Treatment Guidelines.

Transmission of an STD, including syphilis, cannot be prevented by washing the genitals, urinating, and/or douching after sex. Any unusual discharge, sore or rash, particularly in the groin area, should be a signal to refrain from having sex and to see a doctor immediately.

Avoiding alcohol and drug use may help prevent transmission of syphilis because these activities may lead to risky sexual behavior. It is important that sex partners talk

to each other about their HIV status and history of other STDs so that preventive action can be taken.

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TUBERCULOSIS

What is tuberculosis?

Tuberculosis (TB) is a contagious and potentially life-threatening disease transmitted through the air. While it can affect any part of the body (such as the brain, the kidneys or the spine), TB usually affects the lungs. When first infected with the TB germ, people usually do not feel sick or have any symptoms. However, they may develop active TB disease in the future.

Although both preventable and curable, tuberculosis once was the leading cause of death in the United States. Today in Illinois, less than 30 deaths a year are attributed to tuberculosis and the number of cases in the state has fallen more than 40 percent in the past 10 years, reaching an all-time low of 633 in 2003.

What is the difference between TB infection and TB disease?

People with TB infection have the TB germ in their bodies but are not sick because the germs are inactive and, therefore, cannot be spread to others. Because these people may develop the disease in the future, they often are given preventive treatment.

People with TB disease are sick from the germs that are active in their bodies. They exhibit symptoms of the disease and, if they have TB of the lungs or throat, can spread the disease to others. Physicians can prescribe drugs to cure TB.

Are some people at greater risk of getting TB?

Although anyone may get TB, the following people are at higher risk:

- Persons who have been in close contact with an active TB case
- Persons who are infected with or at risk for human immunodeficiency virus (HIV)
- Foreign-born persons from countries where TB is common

- Persons with other medical conditions, such as diabetes, silicosis, end-stage renal disease and some forms of cancer, that increase the risk of TB once infection has occurred
- Persons 65 years of age or older
- Residents of long-term care facilities, such as nursing homes or prisons
- Persons who abuse alcohol or use intravenous drugs
- Persons in occupations that serve groups at high risk for TB
- Minority and other medically underserved populations

How serious is the problem among minorities?

TB disproportionately affects racial and ethnic minority groups. This is particularly true among children. In the U.S., more than 80 percent of childhood cases of TB occur in minority groups. Overall, from 1985 through 1993, TB cases increased among non-Hispanic blacks by 18 percent, among Asians and Pacific Islanders by 48 percent and among Hispanics by 67 percent. In contrast, cases among non-Hispanic whites decreased by 18 percent.

What are the symptoms of TB disease?

The general symptoms of TB disease include feeling sick or weak, weight loss, fever and night sweats. TB of the lungs causes the general symptoms plus coughing, sometimes producing blood, and chest pain. Other symptoms depend on the part of the body that is affected.

How is TB spread?

TB is spread from person to person through the air. When people with TB disease of the lungs or throat cough or sneeze, they can put TB germs into the air. Then other people who breathe in the air containing these germs can become infected. People with TB disease are most likely to spread it to people with whom they spend time with every day, such as family members or coworkers. (Remember, though, a person must have active TB disease to spread it; persons who are infected but do not have the disease **cannot** spread TB to others.) If a person thinks he or she has been in close contact with someone with TB disease, it is important to go to a clinic or health department for a TB skin test.

How is a person tested for TB?

The tuberculin skin test is used to find out whether a person is infected with the TB germ. It does not tell whether the person has TB disease. For the skin test, a small amount of fluid--called tuberculin--is injected under the skin in the lower part of the

arm. Two or three days later, a health care worker checks the site of the injection to see if there has been a reaction.

What does a positive reaction mean?

A positive reaction to the tuberculin skin test usually means that the person has been infected with the TB germ. It does not necessarily mean that the person has TB disease. Other tests, such as a chest X-ray and a sample of sputum, are needed to see whether the person has TB disease.

How is TB disease treated?

TB disease can be cured by taking several drugs for six to nine months. It is very important that people who have TB disease take the drugs exactly as prescribed. If a person stops taking the drugs too soon or if the drugs are not taken correctly, the germs that are still alive may become resistant to the drugs. This makes the disease much harder to treat. Generally, after the first several weeks of drug therapy, most TB patients become non-infectious.

How is TB infection treated?

The drug used to prevent TB infection from developing into TB disease is isoniazid. It must be taken for six to 12 months. The drug may cause liver problems in certain people, especially older individuals and people with liver disease. Therefore, people who are taking isoniazid should be monitored carefully for signs of adverse reactions.

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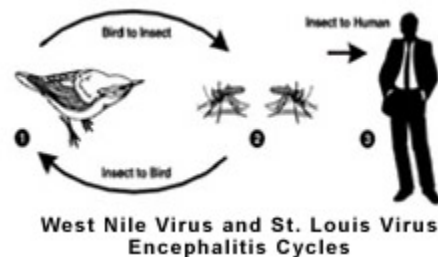
West Nile Virus

What Is West Nile disease?

Viruses and bacteria can cause encephalitis (an inflammation of the brain) in humans and other animals. West Nile encephalitis is a mosquito-borne infection of the brain caused by West Nile virus, a close relative of St. Louis encephalitis virus. It is thought to have been introduced into the New York City area in 1999 and by 2003 had spread across the country to California. West Nile virus is commonly found in Africa, West Asia and the Middle East. Although it is not known how the virus was introduced to the U.S., it may have entered this country in an infected traveler, bird or mosquito.

How do people get West Nile disease?

People get West Nile disease from the bite of a mosquito (primarily the *Culex* group of species) that is infected with West Nile virus. A mosquito becomes infected by biting a bird that carries the virus. West Nile virus is not spread by person-to-person contact or directly from birds to people.



When was West Nile virus first identified in Illinois?

In September 2001 laboratory tests confirmed the presence of West Nile virus in two dead crows found in the Chicago area. The following year all but two of the state's 102 counties reported West Nile activity.

What about human cases of West Nile disease in Illinois?

In August 2002, Illinois reported its first case of West Nile disease and by the end of the year had counted more human cases (884) and deaths (67) than any other state in the nation. In 2003, the number of West Nile disease human cases fell to 54 and only one death and in 2004, there were 60 human cases and four deaths.

What is the transmission cycle of West Nile virus in the environment?

Mosquitoes become infected with West Nile virus when they feed on infected birds. These infected mosquitoes then can transmit West Nile virus to humans and to other birds and animals when a mosquito bite occurs.

Is it only humans who become ill when infected with West Nile virus?

No. Certain animals also can become ill when infected with West Nile virus. For example, horses exposed to West Nile virus can develop encephalitis. Also, certain birds – particularly crows and blue jays – can become ill and die with West Nile virus infection.

What are the symptoms of West Nile disease?

Most people who are infected have no symptoms or may experience mild illness, such as a fever and headache, before fully recovering. In some individuals, particularly the elderly, West Nile virus can cause a serious disease that affects the brain called West Nile encephalitis. It can cause permanent neurological damage and be fatal. Symptoms generally occur three to 15 days following the bite of an infected mosquito and range from a slight fever, headache, rash, swollen nodes and conjunctivitis (irritation of the eye) to the rapid onset of a severe headache, high fever, stiff neck, disorientation, muscle weakness, coma or death. Less than 1 percent of persons infected with West Nile virus will develop severe illness.

Who is at risk of contracting West Nile disease?

All residents in areas with West Nile virus activity are at risk of getting West Nile disease; those at highest risk of severe disease are persons 50 years of age or older and those whose immune systems are weakened by illness or medical treatment (for example, chemotherapy).

Is there a treatment for West Nile disease?

There is no specific therapy for West Nile disease. In more severe cases, intensive supportive therapy – hospitalization, intravenous (IV) fluids, airway management, respiratory support (ventilator) if needed, prevention of secondary infections (pneumonia, urinary tract, etc.) and good nursing care – are indicated.

Is there a vaccine for West Nile disease?

No human vaccine for West Nile virus disease exists.

If I travel to an area where birds with West Nile virus have been reported and I am bitten by a mosquito, am I likely to get sick?

No. Even in areas where mosquitoes do carry the virus, very few mosquitoes (usually less than one out of 500) are infected. The chance that one mosquito bite will be from an infected mosquito is very small.

If bitten by a mosquito, should I be tested for West Nile virus?

No. Illnesses related to mosquito bites are rare. However, you should see a doctor immediately if you develop symptoms such as high fever, confusion, muscle weakness or severe headaches. Patients with mild symptoms are likely to recover completely and do not require any specific medication or laboratory testing.

Why is the state testing birds (especially crows) for West Nile virus?

Crows appear to be highly sensitive to the virus and provide an early warning system for detecting West Nile virus activity in a community. Knowledge of infected birds in a neighborhood or community allows public health officials to alert citizens about the increased risk of mosquito-borne diseases.

What should I do if I find a dead bird?

If a **dead crow or blue jay** is found between May 1 and the end of October and appears to have died from natural causes, you should report this information to your local health department. Your local health department will let you know if it is still collecting and testing dead birds. If the local health department has stopped collecting birds, you will be provided with instructions on how to safely dispose of the bird.

What time of year are mosquito viruses spread?

Viruses are most likely to be spread during the warm weather months when mosquitoes are most active, usually beginning in the spring and lasting until the first hard frost. Most human cases occur in late summer and fall.

Are bird and wild game hunters at risk for West Nile virus?

Because of their outdoor exposure, hunters may be at risk if they are in areas with West Nile virus activity and are bitten by mosquitoes. If they anticipate being exposed to mosquitoes, they should apply insect repellent to clothing and skin, according to label instructions, to prevent mosquito bites. Hunters should follow the usual

precautions when handling wild animals and birds. They should wear gloves when handling and cleaning birds or animals to prevent blood exposure to bare hands.

Can a person contract West Nile disease by eating infected game birds?

Proper cooking kills the West Nile virus. Consequently, there is no danger associated with eating wild game that might be infected.

Can West Nile disease be prevented?

The best way to prevent West Nile disease or any other mosquito-borne illness is to reduce the number of mosquitoes around your home and neighborhood and to take personal precautions to avoid mosquito bites. Here are some suggestions:

- Avoid being outdoors when mosquitoes are most active, especially between dusk and dawn.
- When outdoors, wear shoes and socks, long pants and a long-sleeved shirt, and apply insect repellent that includes DEET, picaridin or oil of lemon eucalyptus according to label instructions. Consult a physician before using repellents on infants.
- Make sure doors and windows have tight-fitting screens. Repair or replace screens that have tears or other openings. Try to keep doors and windows shut, especially at night.
- Eliminate all sources of standing water that can support mosquito breeding, including water in bird baths, ponds, flowerpots, wading pools, old tires and any other receptacles. In communities where there are organized mosquito control programs, contact your municipal government to report areas of stagnant water in roadside ditches, flooded yards and similar locations that may produce mosquitoes.

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Influenza-like Illness(ILI) in Schools

During the months October through April, the Kane County Health Department (KCHD) tracks influenza activity in our county by monitoring:

- Visits to Emergency Departments for Influenza-Like Illness (ILI)
- Hospital laboratory testing for influenza
- ILI associated absenteeism in public schools (Grades K-12)**
- Influenza-associated pediatric deaths*
- Influenza-related ICU admissions and ICU deaths*
- Reports of influenza outbreaks in long-term care facilities*

Influenza-like illness is defined as fever of at least 100°F with cough and/or sore throat.

Report to KCHD if excessive influenza activity (defined as **absenteeism rate > 5 percent** of the student body for ILI on a single day). The school or daycare nurse or the administrator should contact the KCHD staff to determine whether the magnitude of increase warrants additional follow up. The Daily Influenza-Like Illness (ILI) Surveillance Log should be sent daily to the KCHD (see Appendix D).

Schools are encouraged to remind parents at the beginning of the flu season to observe simple preventive measures to reduce the spread of influenza. KCHD has prepared a form letter which schools can use to remind parents of preventive measures (see Flu parent letter under SAMPLE LETTERS). Additionally, posters and flyers on flu prevention are available to schools.

*Those reports are monitored all year around. Laboratory confirmed Influenza reports are not reportable to the Health Department, unless Influenza -Intensive Care Unit (ICU) hospitalized cases and ICU deaths or Influenza-associated pediatric deaths cases.



IDPH MEMO 2009 FAQs: Influenza –like Illness in Schools. Updated 9/16/2009

What is the importance of monitoring influenza-like illness (ILI) occurring among students while they are at school?

ILI defined as fever of >100 degrees F with cough and/or sore throat. This is an important measure to follow, as occurrence of ILI while students are at school is a clear indication that the school is at risk of being a setting for transmission of influenza.

How should data regarding ILI occurring during the school day be used?

Schools should coordinate their approach with local health departments. One strategy, which has been useful and sustainable in some schools, is as follows:

-- If a school nurse sees five or more cases of ILI in one day, the school sends a letter to parents stressing the need to keep sick children home, for 24 hours after resolution of fever, without use of fever-reducing medications. (In addition, parents should be reminded not to dose children with antipyretics prior to attending school in order to suppress fever.)

-- If a school experiences excessive influenza activity — defined as > 5 percent of the student body (at least 10-15 students) being seen by a school nurse for ILI on a single day — a supervising school district nurse should visit the school to assess the situation. Besides shoring up the school's infection control efforts, the school district nurse supervisor should determine whether the school has students whose health conditions place them at high risk of influenza complications. If a school has a high concentration of medically vulnerable children, additional safety measures may be necessary. Schools should report situations with this level of activity to their local health department.

What is the value of absenteeism monitoring in schools during the upcoming influenza season?

Absenteeism by itself is not a measure of influenza activity, and the value of this information may vary by school/school district. To determine the significance of an increase in absenteeism, calls to students' (or a sample of students') homes are typically necessary to determine the reason, as absenteeism may be due to numerous causes. As an alternative, consider collecting information about the reason for absenteeism when parents call to report their child will not be attending school.

If absenteeism monitoring is being performed, and there is an increase in absenteeism due to influenza-like-illness (ILI), how would schools use this information?

Absenteeism due to ILI is not necessarily an indication of a transmission risk at the school. In so far as a key objective for schools is to have ill students stay home, ILI absenteeism is an indicator that parents are adhering to recommendations about non-attendance for students with ILI. If it is determined that during a number (e.g., 5) students from the same group (e.g., a single grade, classroom, athletic team, arts club etc.) are absent within a given time frame (e.g., 1 week)

due to ILI, schools may choose to provide information to parents of other members of the group and .

Some schools may use detection of a general increase (e.g. 5-10% absenteeism due to ILI on a single day) as an indication to reinforce key messages with students, parents, and teachers—e.g., regarding hygiene and staying home when ill, information regarding children at increased risk for influenza complications, and when to seek medical care. Some local health departments and schools may choose to data about influenza like illness occurring locally (including near-by communities) to reinforce key messages. Other schools may choose to continually reinforce key messages with parents and students during the influenza season, even in the absence of increased ILI.

If absenteeism monitoring is being performed, and it is determined that numerous students are absent because of another problem (e.g., skin infections or rash), how would schools use this information?

Suspected outbreaks are reportable to the local health department.

Should schools rely on test results to manage influenza-like illness occurring in schools?

In general, it is prudent to assume that influenza, including H1N1 influenza, is circulating in Illinois communities, and not depend on individual test results as the basis for routine decision making in schools. Problematic aspects of relying upon, and/or waiting for, test results for decision making in a given situation include the following: 1) most individuals with influenza do not seek medical care and are not tested; 2) many physicians rely on rapid tests for decision-making, and these tests may produce false positive and false negative results; 3) turn-around time for influenza PCR test results may be several days.

What are lessons learned from schools that have had outbreaks of ILI?

- Do not require a doctor's note for return to school. This requirement overtaxes busy doctor's offices and emergency departments.
- Eliminate, or relax attendance awards when influenza is circulating, as this may have the unintended consequence of increasing transmission in schools.
- Communicate with parents, teachers, and staff. Aim to provide guidance that is consistent and sustainable. Be absolutely sure that parents are aware that they should seek medical attention for children with ILI who are at risk for severe illness (eg due to age or underlying medical conditions) and children that have signs of serious illness.

Is special environmental cleaning necessary if cases of influenza or ILI occur in a school?

School staff should routinely clean areas that students and staff touch often; cleaning should be performed with the cleaners typically used at the school. **Schools should regularly clean all areas and items that are more likely to have frequent hand contact** (for example, keyboards or desks) and also clean these areas immediately when visibly soiled. Use the cleaning agents that are usually used in these areas. CDC does not believe any additional disinfection of environmental surfaces beyond the recommended routine cleaning is required. See the [American Academy of Pediatrics'](#)

[Managing Infectious Diseases in Child Care and Schools: A Quick Reference Guide, 2nd Edition \(2009\)](#) for guidance on cleaning and sanitizing in schools. The EPA provides a [list of EPA-registered products effective against influenza viruses](#) .



Guidance for School Administrators to Help Reduce the Spread of Seasonal Influenza in K-12 Schools

This document from the Centers for Disease Control and Prevention (CDC), an agency of the U.S. Department of Health and Human Services, provides guidance to help reduce the spread of seasonal influenza (flu) among students and staff in K-12 schools. Recommendations are based on CDC's current knowledge of flu in the United States. CDC will continue to monitor flu activity and update this guidance as needed.

For the purpose of this guidance, "schools" will refer to both public and private institutions providing grades K-12 education to children and adolescents in group settings.

[Supplemental Interim Guidance for School Administrators Associated with Possible Outbreaks of H3N2 Variant Influenza Virus \("H3N2v"\)](#)

Background

Flu seasons are unpredictable in a number of ways. Although widespread influenza activity occurs every year, the timing, severity, and duration of it depend on many factors, including which flu viruses are spreading, the number of people who are susceptible to the circulating flu viruses, and how well the flu vaccine is matched to the flu viruses that are causing illness. The timing of flu can vary from season to season. In the United States, seasonal flu activity most commonly peaks in January or February, but flu viruses can cause illness from early October to late May. Flu viruses are thought to spread mainly from person to person through coughs and sneezes of infected individuals. People may also become infected by touching something with flu virus on it and then touching their mouth, nose, or eyes.

Many respiratory infections spread from person to person and cause symptoms similar to those of flu. Therefore, the nonpharmaceutical recommendations in this document might help reduce the spread of not only flu, but also respiratory syncytial virus (RSV), rhinovirus, and other viruses and bacteria that can cause illness.

Each day, about 55 million students and 7 million staff attend the more than 130,000 public and private schools in the United States. By implementing the recommendations in this document, schools can help protect one-fifth of the country's population from flu. Collaboration is essential; CDC, the U.S. Department of Education, state/local public health and education agencies,

schools, staff, students, families, businesses, and communities should work together to reduce the spread of flu and other respiratory infections.

High-Risk Groups

People of all ages get sick with flu. School-aged children are the group with the highest rates of flu illness. Groups at highest risk for severe flu-related illness, including being hospitalized or dying from flu, include:

- Children younger than 5 years of age, but especially children younger than 2 years of age
- Adults 65 years of age and older
- Pregnant women
- American Indians/Alaskan Natives
- People younger than 19 years of age who are receiving long-term aspirin therapy
- People who have certain medical conditions, including:
 - Asthma
 - Other chronic lung diseases (such as chronic obstructive pulmonary disease [COPD] and cystic fibrosis)
 - Neurological and neurodevelopmental conditions (including disorders of the brain, spinal cord, peripheral nerve, and muscle, such as cerebral palsy, epilepsy [seizure disorders], stroke, intellectual disability [mental retardation], moderate to severe developmental delay, muscular dystrophy, and spinal cord injury).
 - Heart disease (such as congenital heart disease, congestive heart failure, and coronary artery disease)
 - Blood disorders (such as sickle cell disease)
 - Endocrine disorders (such as diabetes mellitus)
 - Kidney disorders
 - Liver disorders
 - Metabolic disorders (such as inherited metabolic disorders and mitochondrial disorders)
 - Weakened immune systems due to disease or medication (such as HIV/AIDS, cancer, and chronic use of steroids)
 - Morbid obesity (body mass index [BMI] of 40 or greater)

Symptoms and Emergency Warning Signs

The symptoms of flu can include:

- Fever (although not everyone with flu has a fever)
- Cough
- Sore throat
- Runny or stuffy nose
- Body aches
- Headache
- Chills
- Tiredness

- Sometimes diarrhea and vomiting

Emergency warning signs that indicate a person should get medical care right away include:

- In children:
 - Fast breathing or trouble breathing
 - Bluish skin color
 - Not drinking enough fluids
 - Not waking up or not interacting
 - Being so irritable that the child does not want to be held
 - Flu-like symptoms that improve but then return with fever and worse cough
 - Fever with rash
- In addition to the signs above, get medical help right away for any infant who has any of these signs:
 - Being unable to eat
 - Has trouble breathing
 - Has no tears when crying
 - Has significantly fewer wet diapers than normal
- In adults:
 - Difficulty breathing or shortness of breath
 - Pain or pressure in the chest or abdomen
 - Sudden dizziness
 - Confusion
 - Severe or persistent vomiting
 - Flu-like symptoms that improve but then return with fever and worse cough

Recommendations

Below are recommendations to help reduce the spread of flu in schools.

- **Encourage students, parents, and staff to get a yearly flu vaccine.**
 - Teach students, parents, and staff that the single best way to protect against the flu is to get vaccinated each year. See [Key Facts About Seasonal Flu Vaccine](#).
 - Seasonal flu vaccination is recommended for everyone 6 months of age and older unless they have a specific contraindication to flu vaccine. See [Persons Who Should Not Be Vaccinated](#).
 - The seasonal flu vaccine protects against three influenza viruses that research indicates will be most common during the upcoming season. The viruses in the vaccine change each year based on international surveillance and scientists' estimations about which types and strains of viruses will circulate in a given year.
 - There are two types of seasonal flu vaccines.
 - One type is the “flu shot” (sometimes called TIV for “trivalent inactivated influenza vaccine”), an inactivated vaccine containing killed virus that is given with a needle, usually in the arm. The flu shot is approved for use in people 6 months of age and older,

including healthy people, pregnant women, and people with chronic medical conditions.

- The second type is the nasal spray vaccine (sometimes called LAIV for “live attenuated influenza vaccine”), a vaccine made with live, weakened flu viruses that do not cause flu. This vaccine is approved for use in people 2-49 years of age who are not pregnant and who do not have health problems.
 - Flu vaccines have a very good safety record. Over the years, hundreds of millions of Americans have received seasonal flu vaccines. The most common side effects following flu vaccinations are mild, such as soreness, redness, tenderness, or swelling where the shot was given. See [Adverse Events after Receipt of TIV \(Flu Shot\)](#) and [Adverse Events after Receipt of LAIV \(Nasal Spray Vaccine\)](#).
 - Vaccination efforts can start as soon as vaccination becomes available (usually in September) and should continue as long as flu viruses are spreading and causing illness in the community (usually until May).
 - Consider offering seasonal flu vaccination to students at school. School vaccination clinics, which are often led by local public health department staff in partnership with schools, are an option for vaccinating school-aged children against flu. Vaccination of other groups (e.g., staff, home-schooled students, students attending nearby schools, family members, and other community members) may also be considered. Contact your local public health department for more information. See [Influenza School-Located Vaccination \(SLV\): Information for Planners](#).
- **Encourage students, parents, and staff to take everyday preventive actions to stop the spread of germs.**
 - Encourage respiratory etiquette among students and staff through education and the provision of supplies. See [Cover Your Cough](#).
 - Teach students and staff to cover coughs and sneezes with a tissue or their arm. If they use a tissue, they should put the used tissue in a trash can and wash their hands.
 - Provide adequate supplies within easy reach, including tissues and no-touch trash cans.
 - Encourage hand hygiene among students and staff through education, scheduled time for handwashing, and the provision of supplies. See [Handwashing: Clean Hands Save Lives](#).
 - Teach students and staff to wash hands often with soap and water for 20 seconds, dry hands with a paper towel, and use the paper towel to turn off the faucet. If soap and water are not available and hands are not visibly dirty, an alcohol-based hand sanitizer containing at least 60% alcohol may be used.
 - Include handwashing time in student schedules.
 - Provide adequate supplies, including clean and functional handwashing stations, soap, paper towels, and alcohol-based hand sanitizer.

- Encourage students and staff to keep their hands away from their nose, mouth, and eyes.
- Encourage routine surface cleaning through education, policy, and the provision of supplies. See [How To Clean and Disinfect Schools To Help Slow the Spread of Flu](#).
 - Routinely clean surfaces and objects that are touched often, such as desks, countertops, doorknobs, computer keyboards, hands-on learning items, faucet handles, and phones. Empty trash cans as needed.
 - Use general cleaning products that you normally use. Always follow product label directions. Additional disinfection beyond routine cleaning is not recommended.
 - Provide adequate supplies, such as general EPA-registered cleaning products, gloves, disinfecting wipes, and no-touch trash cans.
 - Match your cleaning activities to the types of germs you want to remove or kill.
 - Flu viruses are relatively fragile, so standard practices, such as cleaning with soap and water, can help remove and kill them.
 - Most studies have shown that the flu virus can live and potentially infect a person for only 2 to 8 hours after being deposited on a surface. Therefore, special sanitizing processes beyond routine cleaning, including closing schools to clean every surface in the building, are not necessary or recommended to slow the spread of flu, even during a flu outbreak.
 - Some schools may include other cleaning and disinfecting practices in their standard procedures to address germs that are not removed or killed by soap and water alone.
- Encourage students and staff to stay home when sick through education and policy.
 - Teach students, parents, and staff the importance of staying home when sick until at least 24 hours after they no longer have a fever (100 degrees Fahrenheit or 37.8 degrees Celsius, measured by mouth) or signs of a fever (chills, feeling very warm, flushed appearance, or sweating) without the use of fever-reducing medicine.
 - Review school policies, and consider revising those that make it difficult for students and staff to stay home when sick or when caring for others who are sick.
 - Implement flexible sick leave policies for students and staff.
 - Avoid the use of perfect attendance awards.
 - Cross-train staff so that others can cover for co-workers who need to stay home.

See [Good Health Habits for Preventing Seasonal Flu](#) and [Everyday Preventive Actions That Can Help Fight Germs, Like Flu](#)  [1.5 MB, 2 pages, 8 ½" x 11"] .

- **Educate students, parents, and staff on what to do if someone gets sick.**

- Teach students, parents, and staff the signs and symptoms of flu, emergency warning signs, and high-risk groups. See lists at the beginning of this document.
 - Those who get flu-like symptoms at school should go home and stay home until at least 24 hours after they no longer have a fever or signs of a fever without the use of fever-reducing medicine. Those who have emergency warning signs should get immediate medical care. See [The Flu: What To Do If You Get Sick](#).
 - Those who get flu-like symptoms and are at high risk of severe flu illness should ask a healthcare provider if they should be examined. See [People at High Risk of Developing Flu–Related Complications](#).
- Separate sick students and staff from others until they can be picked up to go home. When feasible, identify a “sick room” through which others do not regularly pass. The sick room should be separated from areas used by well students for routine health activities, such as picking up medications. Sick room staff should be limited in number and should not be at high risk for severe illness if they get sick.
- Encourage students, parents, and staff to take antiviral drugs if their healthcare provider prescribes them. See [Treatment - Antiviral Drugs](#).
 - Antiviral drugs, called Relenza® and Tamiflu®, are drugs that can be prescribed by healthcare providers to treat the flu. These drugs can reduce the number of days that a person is sick, but not everyone needs to be treated.
 - Antiviral drugs work best when started within the first 2 days of illness, but they may also help reduce the risk of severe illness even if started 2 or more days after onset of illness for persons who are hospitalized.
 - Although most people will recover from flu without treatment, antiviral drugs are recommended for people with influenza who have an illness requiring being in the hospital; have a progressive, severe, or complicated illness; or are at high risk of severe flu because of an underlying medical condition or their age.
- **Establish relationships with state and local health officials for ongoing communication.**
 - Follow your local flu situation through close communication with state and local health officials.
 - Update emergency plans so that they are in place before an outbreak occurs.



How To Clean and Disinfect Schools To Help Slow the Spread of Flu

Cleaning and disinfecting are part of a broad approach to preventing infectious diseases in schools. To help slow the spread of influenza (flu), the first line of defense is getting vaccinated. Other measures include covering coughs and sneezes, washing hands, and keeping sick people away from others. Below are tips on how to slow the spread of flu specifically through cleaning and disinfecting.

1. Know the difference between cleaning, disinfecting, and sanitizing

Cleaning removes germs, dirt, and impurities from surfaces or objects. Cleaning works by using soap (or detergent) and water to physically remove germs from surfaces. This process does not necessarily kill germs, but by removing them, it lowers their numbers and the risk of spreading infection.

Disinfecting kills germs on surfaces or objects. Disinfecting works by using chemicals to kill germs on surfaces or objects. This process does not necessarily clean dirty surfaces or remove germs, but by killing germs on a surface after cleaning, it can further lower the risk of spreading infection.

Sanitizing lowers the number of germs on surfaces or objects to a safe level, as judged by public health standards or requirements. This process **works by either cleaning or disinfecting** surfaces or objects to lower the risk of spreading infection.

2. Clean and disinfect surfaces and objects that are touched often

Follow your school's standard procedures for routine cleaning and disinfecting. Typically, this means daily sanitizing surfaces and objects that are touched often, such as desks, countertops, doorknobs, computer keyboards, hands-on learning items, faucet handles, phones, and toys. Some schools may also require daily disinfecting these items. Standard procedures often call for disinfecting specific areas of the school, like bathrooms.

Immediately clean surfaces and objects that are visibly soiled. If surfaces or objects are soiled with body fluids or blood, use gloves and other standard precautions to avoid coming into contact with the fluid. Remove the spill, and then clean and disinfect the surface.

3. Simply do routine cleaning and disinfecting

It's important to match your cleaning and disinfecting activities to the types of germs you want to remove or kill. Most studies have shown that the flu virus can live and potentially infect a person for only 2 to 8 hours after being deposited on a surface. Therefore, it is not necessary to close schools to clean or disinfect every surface in the building to slow the spread of flu. Also, if students and staff are dismissed because the school cannot function normally (e.g., high absenteeism during a flu outbreak), it is not necessary to do extra cleaning and disinfecting.

Flu viruses are relatively fragile, so standard cleaning and disinfecting practices are sufficient to remove or kill them. Special cleaning and disinfecting processes, including wiping down walls and ceilings, frequently using room air deodorizers, and fumigating, are not necessary or recommended. These processes can irritate eyes, noses, throats, and skin; aggravate asthma; and cause other serious side effects.

4. Clean and disinfect correctly

Always follow label directions on cleaning products and disinfectants. Wash surfaces with a general household cleaner to remove germs. Rinse with water, and follow with an EPA-registered disinfectant to kill germs. Read the label to make sure it states that EPA has approved the product for effectiveness against influenza A virus.

If an EPA-registered disinfectant is not available, use a fresh chlorine bleach solution. To make and use the solution:

- Add 1 tablespoon of bleach to 1 quart (4 cups) of water. For a larger supply of disinfectant, add ¼ cup of bleach to 1 gallon (16 cups) of water.
- Apply the solution to the surface with a cloth.
- Let it stand for 3 to 5 minutes.
- Rinse the surface with clean water.

If a surface is not visibly dirty, you can clean it with an EPA-registered product that both cleans (removes germs) and disinfects (kills germs) instead. Be sure to read the label directions carefully, as there may be a separate procedure for using the product as a cleaner or as a disinfectant. Disinfection usually requires the product to remain on the surface for a certain period of time.

Use disinfecting wipes on electronic items that are touched often, such as phones and computers. Pay close attention to the directions for using disinfecting wipes. It may be necessary to use more than one wipe to keep the surface wet for the stated length of contact time. Make sure that the electronics can withstand the use of liquids for cleaning and disinfecting.

Routinely wash eating utensils in a dishwasher or by hand with soap and water. Wash and dry bed sheets, towels, and other linens as you normally do with household laundry soap, according to the fabric labels. Eating utensils, dishes, and linens used by sick persons do not need to be

cleaned separately, but they should not be shared unless they've been washed thoroughly. Wash your hands with soap and water after handling soiled dishes and laundry items.

5. Use products safely

Pay close attention to hazard warnings and directions on product labels. Cleaning products and disinfectants often call for the use of gloves or eye protection. For example, gloves should always be worn to protect your hands when working with bleach solutions.

Do not mix cleaners and disinfectants unless the labels indicate it is safe to do so. Combining certain products (such as chlorine bleach and ammonia cleaners) can result in serious injury or death.

Ensure that custodial staff, teachers, and others who use cleaners and disinfectants read and understand all instruction labels and understand safe and appropriate use. This might require that instructional materials and training be provided in other languages.

6. Handle waste properly

Follow your school's standard procedures for handling waste, which may include wearing gloves. Place no-touch waste baskets where they are easy to use. Throw disposable items used to clean surfaces and items in the trash immediately after use. Avoid touching used tissues and other waste when emptying waste baskets. Wash your hands with soap and water after emptying waste baskets and touching used tissues and similar waste.

Appendix D



Daily Influenza-Like Illness (ILI)* Surveillance

School Name: _____

Week Ending: _____

	Example	Monday	Tuesday	Wednesday	Thursday	Friday
Date	X/XX/XXXX					
Total School Enrollment	800					
Total Number Absent	50					
Percentage Total absent with (auto calculation)	6.2%					
Number Absent with ILI* (if known)	40					
Percentage absent with ILI* (auto calculation)	5.0%		-	-	-	-

* ILI is defined as fever $\geq 100^{\circ}\text{F}$ and cough or sore throat

Comments: _____



Animals in Schools and Daycare Settings

Animals can provide important opportunities for entertainment and learning. However, there is also a risk for getting sick or hurt from contact with animals, including those in school and daycare classrooms.

Gastrointestinal (Enteric) Diseases from Animals

Check out CDC's [Gastrointestinal \(Enteric\) Diseases from Animals website](#), your one-stop-shop for information about zoonotic outbreaks, prevention messages, and helpful resources.

Animals can be effective and valuable teaching aids for children, but there is a risk of illness and injury from contact with animals. Young children are especially at risk for illness because their immune systems are still developing and because they are more likely than others to put their fingers or other items into their mouths, a behavior that can spread germs. Also, infectious disease outbreaks have been caused by contaminated animal products used for educational activities in schools, such as owl pellets for dissection. Many adults and children have become very ill from infections they caught while visiting [animal exhibits or farms](#) during field trips or from animals kept in classrooms. When people forget to [wash their hands](#) right after touching an animal or its habitat, or bring food or drinks into areas where animals live or roam, they increase their risk for becoming ill.

To learn more about infectious diseases that are associated with animals and to help reduce the risks of getting sick or hurt from them, read the questions and answers below.

What types of diseases can animals spread? Can they cause injuries?

In the United States, the biggest risk of human illnesses from animals, especially to young children, is getting infected with germs like [Salmonella](#), [E. coli O157:H7](#) and others that cause vomiting, diarrhea, fever, and abdominal cramping. Animals can also carry germs that cause other kinds of diseases, such as [rabies](#). Animals may have germs on their bodies and in their droppings, even when they appear clean and healthy. The germs can also get on cages, bedding, and wherever animals roam or walk around, and can contaminate these areas.

Injuries caused by animals in public settings include bites, kicks, scratches, and others. Most injuries from animals can be prevented if schools and daycare classrooms follow proper safety precautions.

How can I reduce the risk of illness from touching or being around animals?

After you touch an animal, or anything in the areas where they live and roam, wash your hands right away to help prevent illness. Read the following tips to learn more about hand washing:

- Always wash hands right after handling animals, their food, and/or their habitats (for example, cages, water bowls, toys). Also, everyone should wash their hands after going to the toilet, before eating and drinking, before preparing food or drinks, and after removing soiled clothes or shoes.
- Adults should always supervise hand washing for young children.
- Running water and soap are best. Use hand sanitizers if running water and soap are not available. Be sure to wash your hands with soap and water as soon as a sink is available.

What else can I do to help prevent illness or injury when animals are in schools or daycare classrooms, or during a school trip to an animal exhibit?

- Never allow young children to put their hands or objects (for example, pacifiers) in their mouth while interacting with animals.
- Adults should supervise human-animal contact, particularly involving children younger than 5 years of age.
- Children, teachers and other staff should be instructed to wash hands after contact with animals, animal products or feed, or animal environments.
- Display animals in enclosed cages or under appropriate restraints.
- Animal caretakers should not allow animals to roam, fly free, or have contact with wild animals.
- Designate specific areas for interaction with animals.
- Do not allow human food in animal contact areas; do not allow animals in areas where human food and drink are prepared, served, or consumed.
- Clean and disinfect all areas where animals have been present. Children should perform this task only under adult supervision.
- Do not clean animal cages or enclosures in sinks or other areas used to prepare food and drinks.
- Do not dissect owl pellets, frogs or other animals in areas where human food is prepared, served, or consumed. Thoroughly clean and disinfect surfaces that are used for dissection.
- Parents should be informed of the benefits and potential risks associated with animals in school classrooms. Consult with parents to determine special considerations needed for children who are immunocompromised, have allergies, or have asthma.
- Certain animals should not be allowed in schools and day cares with children younger than 5 years of age including reptiles (e.g., turtles, snakes, and lizards, amphibians (e.g., frogs, toads, salamanders, and newts), live poultry (e.g., chicks, ducklings, and goslings) and ferrets.
- **Other Animals Not Recommended in School or Child-Care Settings include:**
- Inherently dangerous animals (e.g., lions, tigers, cougars, and bears).
- Nonhuman primates (e.g., monkeys and apes).

- Mammals at high risk for transmitting rabies (e.g., bats, raccoons, skunks, foxes, and coyotes).
- Aggressive or unpredictable wild or domestic animals.
- Stray animals with unknown health and vaccination history.
- Venomous or toxin-producing spiders, insects, reptiles, and amphibians.

What can I do to check that animals are healthy before I bring them into a school or daycare classroom?

It is important to remember that animals can have germs on their bodies and in their habitats, even if they appear healthy. However, if you decide to bring them into a school or daycare setting, make sure to follow these guidelines:

- Obtain appropriate veterinary care, a certificate of veterinary inspection, or proof of rabies vaccination (or all of these) according to local or state requirements.
- Animal caretakers should keep animals clean and free of intestinal parasites, fleas, ticks, mites, and lice.
- Ensure that personnel providing animals for educational purposes are knowledgeable regarding animal handling and zoonotic disease issues. Persons or facilities that display animals to the public should be [licensed](#) by the U.S. Department of Agriculture.



Take Caution When Bats Are Near



Bats play an important role in our ecosystem. However, they are also associated with diseases deadly to humans. Learn how you can stay safe when bats are near.

Diseases Spread by Bats

Several highly fatal diseases have been linked to bats.

Rabies is perhaps the most well known disease associated with bats. Along with animals such as dogs, foxes, raccoons, and skunks, bats are one of the primary animals that transmit rabies.

An exposure to rabies most commonly occurs when a person is bitten by a rabid animal. It can also be transmitted when the saliva from a rabid animal comes in contact with a person's mouth, eyes, nose, or a fresh wound.

When a person is exposed to rabies, timely administration of a vaccine known as post-exposure prophylaxis (PEP) can prevent infection. Once a person becomes infected and symptoms begin to occur, rabies is almost always fatal. Each year in the United States, up to 30,000 persons receive PEP due to potential exposure to a rabid animal, including bats.

Histoplasmosis is another disease associated with bats. Its symptoms vary greatly, but the disease primarily affects the lungs. Occasionally, other organs are affected. When this happens it can be fatal if untreated.

In addition, Histoplasmosis is caused by a fungus that grows in soil and material contaminated with droppings from animals, including bats. Droppings, also known as bat guano, can contaminate the soil and cause infectious spores to be released when the soil is disturbed.

Even though it can be found throughout the world, it is widespread in certain areas of the U.S. and can be found in places that harbor large populations of bats, including caves.

While most infected persons have no apparent ill effects, antifungal medications are used to treat many forms of the disease.

Bats and Diseases around the World

Even though rabies and histoplasmosis can be found all over the world, some diseases associated with bats are found exclusively in certain regions of the world. Notably, research suggests that bats might be the source of several hemorrhagic fevers, which affect multiple organ systems in the body and often lead to life-threatening diseases.

One of these diseases is Marburg hemorrhagic fever, which is found exclusively in Africa. Past outbreaks have shown that Marburg Hemorrhagic Fever kills up to 90% of those infected.

While the natural host had for years been unknown, new research suggests that fruit bats are a natural source of this virus, and the virus has been isolated repetitively from fruit bats in Uganda.

The same may be true for Ebola hemorrhagic fever. The virus that causes this disease is often referred to as the "cousin" of Marburg virus, since they are the only distinct viruses that belong to a group of viruses known as filoviruses. Like Marburg, Ebola is highly fatal and is found mostly in Africa. Recent studies indicate that, as with Marburg, bats are likely to be a natural source of this virus, although no Ebola virus has been isolated from bats.

Two other viruses - Nipah (which causes Nipah virus encephalitis) and Hendra (which causes Hendra virus disease) - are also associated with bats. Research suggests that Hendra virus is associated with fruit bats (commonly called flying foxes) in Australia. Nipah and related viruses are also associated with the same group of bats in Southeast Asia and parts of Africa, although outbreaks of disease in humans have so far been limited to Malaysia, Singapore, India, and Bangladesh. Both viruses can cause severe respiratory and neurologic disease in humans.

Another group of viruses known as coronaviruses have been detected in multiple species of bats. Coronavirus infection can sometimes cause mild respiratory illness in humans, but these viruses were also implicated in the outbreak of Severe Acute Respiratory Syndrome (SARS) in Southeast Asia. While bats do not carry or transmit SARS, research has linked coronaviruses to bats in countries all over the world.

In addition, Lyssaviruses have been discovered on every inhabited continent. This group of viruses causes rabies, in addition to other diseases that can be fatal to humans. While current rabies vaccines are effective against many of the viruses in this group, several Lyssaviruses identified in Africa and Asia primarily associated with bats cannot be prevented with current rabies vaccines.

Further studies may shed light on the role of bats as the source of these viruses and their ability to transmit diseases caused by these viruses to humans.

Stay Alert in Areas where Bats are Found

Many bats rely on cave roosts and are often found in groupings that can number in the millions. Cave explorers, spelunkers, divers, and others whose activities take them into or around caves should exercise caution when in these environments.

Make sure be on the lookout for bats, which often roost or hibernate at high points within caves. It is also important to avoid being near or coming into contact with bat droppings. When possible, avoid entering caves that are known to contain populations of bats.

In addition, it might be a good idea to bring a flashlight into the cave to help better identify the presence of bats or other animals. If bats are present in the immediate area, consider leaving the cave or moving to an area of the cave where there are no bats.

Some bats also roost in tree cavities or foliage, and might be spotted in areas where outdoor activities take place, such as hiking or camping. While there have been instances of humans exposed to rabid bats, most bats in a natural setting are not rabid and, in many outdoor situations, the presence or sighting of bats is common and normal.

However, precautions can be taken at outdoor locales to help minimize the risk of exposure to bats and their excretions:

- When possible, prevent bats from entering outdoor living quarters and other occupied spaces. Consider "[bat-proofing](#)" your living space.
- Screens or mosquito netting can provide a useful barrier against direct bat contact.
- Teach children to never to handle live or dead bats, as well as any unfamiliar wild or domestic animals (even if they appear friendly). Tell them to report any contact or unusual animal behavior to an adult right away.
- In some settings, materials contaminated with bat droppings may have to be disposed of or decontaminated. In these situations, local and state authorities can provide more information on the requirements for the removal, transportation, and disposal of contaminated material. Clean-up of areas contaminated with bat droppings should not be attempted by non-trained personnel, and proper personal protective equipment (PPE), including respirator, mask, gown, and gloves, should be worn by anyone handling the potentially infectious material.

Take Steps to Keep Bats Out of Your Home

Some bats live in buildings, and may continue to do so with little risk to inhabitants if they are unable to access living areas and the potential for contact with people is low.

However, bats should always be prevented from entering rooms of your home. As noted above, "bat proofing" your home or living quarters can prevent bats from using a home for a roosting site. For best results, contact an animal control or wildlife conservation agency and ask for assistance.

If you choose to do the "bat-proofing" yourself, here are some suggestions:

- Carefully examine your home for holes that might allow bats entry into your living quarters.
- Any openings larger than a quarter-inch by a half-inch should be caulked.
- Use window screens, chimney caps, and draft-guards beneath doors to attics.
- Fill electrical and plumbing holes with stainless steel wool or caulking. Ensure that all doors to the outside close tightly.
- Most bats leave in the fall or winter to hibernate, so these are the best times to "bat-proof" your home. During summer, many young bats are unable to fly. If you exclude adult bats during this time, the young may be trapped inside.

Safely Capture Bats and Dispose of Dead Bats

If a bat is present in your home, contact an animal-control or public health agency for assistance. It may be important to capture the bat for rabies testing, especially if a potential bite or exposure has occurred. Sometimes, professional help may be unavailable. In such cases, use precautions to capture the bat safely, as described below.

To begin, you will need:

- leather work gloves (put them on)
- small box or coffee can
- piece of cardboard
- tape

The steps you should take to capture the bat are:

- When the bat lands, approach it slowly, while wearing the gloves, and place the box or coffee can over it.
- Slide the cardboard under the container to trap the bat inside.
- Tape the cardboard to the container securely, and punch small holes in the cardboard, allowing the bat to breathe.

When no potential exposure has occurred, the bat can be safely released outside. If a bite or exposure to saliva (e.g., into a person's mouth, eyes, or a fresh wound) has occurred, your health department or animal-control authority should be contacted to make arrangements for rabies testing.

If you come across a dead bat, call animal control services to see if they can safely remove the animal. In some instances, such services might not be immediately available. Under these circumstances, follow the below steps to safely discard the dead bat.

- Get a cardboard box or Tupperware container
- Place it over the bat
- Slide a cardboard or plastic lid under the box/container so that the bat is confined within.

- Remove it from the area until animal control services can arrive to safely dispose of the bat.

Treatment After a Potential Exposure

While bites are a common way for diseases to be spread from bats to humans, exposure to saliva and other secretions can also lead to infection.

If you are bitten or saliva from a bat gets into your eyes, nose, mouth, or wounds, wash the affected area thoroughly and get medical attention immediately.

Bats have small teeth that may leave marks not easily seen (see picture). Although many people know if they have been bitten by a bat, there are certain circumstances when a person might not be aware or able to tell if a bite has occurred. For example:

- If a person awakes to find a bat in the room
- If you find a bat in a room with an unattended child
- If you see a bat near a person with a disability

If the above occurs, get immediate medical attention. In all circumstances, contact local or state health departments for assistance with medical advice and testing bats for rabies. When it cannot be ruled out that the bat is free from rabies and an exposure has occurred, (PEP) may need to be considered.

When bat droppings, saliva, or other secretions are believed to be nearby, closely monitor your health, especially any fever, chills, headache, or muscle pain.

If these symptoms appear after being in an area when bats might have been nearby, seek medical attention and be sure to note your presence in these areas. Be sure to also note any travel that has recently taken place, especially to African countries. This is especially important if it has been less than a month since a potential exposure to bats.

Living Safely With Bats

Even though bats sometimes spread diseases to people, they are able to peacefully co-exist with humans and provide us with many benefits.

Worldwide, bats are a major predator of night-flying insects, including pests that cost farmers billions of dollars annually. Throughout the tropics, seed dispersal and pollination activities by bats are vital to rain forest survival. In addition, studies of bats have contributed to medical advances including the development of navigational aids for the blind. Unfortunately, many local populations of bats have been destroyed and many species are now endangered.

The best protection we can offer these unique animals is to learn more about their habits and recognize the value of living safely with them.

(Source: Amended at 38 Ill. Reg. 5533, effective February 11, 2014)

Section 690.601 Rabies, Potential Human Exposure and Animal Rabies (Reportable-by telephone or facsimile, within 24 hours)

- a) Reporting of Rabies, Potential Human Exposure
Definition of exposed person to be reported:
- 1) Any contact (bite or non-bite) to a bat; or
 - 2) Any contact (bite or non-bite) from a rabies positive animal to a person; or
 - 3) Anyone who was started on rabies post-exposure prophylaxis; or
 - 4) Exposure to saliva from a bite, or contact of any abrasion or mucous membrane with brain tissue, saliva or cerebrospinal fluid from a suspect rabid person or animal. Exposure to healthy rabbits, small rodents, indoor-only domestic pets or rabies-vaccinated dogs, cats or ferrets is excluded, unless the exposure complies with subsections (a)(1) through (a)(3), or the animal displays signs consistent with rabies; or
 - 5) Any bite from a wild mammal, not including small rodents or rabbits; or
 - 6) Anyone who was in the same room as a bat and who might be unaware that a bite or direct contact has occurred (e.g., a sleeping person awakens to find a bat in the room or an adult witnesses a bat in the room with a previously unattended child, mentally disabled person, or intoxicated person) and rabies cannot be ruled out by testing the bat; or
 - 7) Anyone bitten by a non-human primate.
- b) Investigations
The local health authority shall promptly investigate all known instances of potential rabies exposure to determine whether rabies post-exposure prophylaxis for the exposed person should be recommended.
- c) Control of Biting Animals
See the Animal Control Act.
- d) Reporting Animal Rabies
Any positive animal rabies test results shall be reported to both the Department and the Department of Agriculture.



HEALTH HAZARDS ASSOCIATED WITH BIRD AND BAT DROPPINGS

Health risks from birds and bats are often exaggerated. Nevertheless, large populations of roosting birds may present the risk of disease to people nearby. The most serious health risks arise from disease organisms that can grow in the nutrient-rich accumulations of bird droppings, feathers and debris under a roost — particularly if roosts have been active for years. External parasites also may become a problem when infested birds or bats leave roosts or nests. The parasites then can invade buildings and bite people.

Histoplasmosis

Histoplasmosis is caused by a fungus (*Histoplasma capsulatum*) found primarily in the areas drained by the Mississippi and Ohio rivers. Both humans and animals can be affected. The disease is transmitted to humans by airborne fungus spores from soil contaminated by pigeon and starling droppings (as well as from the droppings of other birds and bats). The soil under a roost usually has to have been enriched by droppings for two years or more for the disease organism to reach significant levels. Although almost always associated with soil, the fungus has been found in droppings (particularly from bats) alone, such as in an attic.

Infection occurs when spores, carried by the air are inhaled — especially after a roost has been disturbed. Most infections are mild and produce either no symptoms or a minor influenza- like illness. On occasion, the disease can cause high fever, blood abnormalities, pneumonia and even death. In some areas, including portions of Illinois, up to 80 percent of the population show evidence of previous infection. Outbreaks of histoplasmosis have occurred in Central Illinois.

The National Institutes of Health (NIH) has reported a potentially blinding eye condition — presumed ocular histoplasmosis syndrome (OHS) — that probably results from the fungus. NIH estimates that 4 percent of those exposed to the disease are at risk of developing OHS.

Cryptococcosis

Pigeon droppings appear to be the most important source of the disease fungus *Cryptococcus neoformans* in the environment. The fungus is typically found in accumulations of droppings around roosting and nesting sites, for example, attics,

cupolas, ledges and water towers. It has been found in as many as 84 percent of samples taken from old roosts. Even when old and dry, bird droppings can be a significant source of infection.

Like histoplasmosis, most cryptococcosis infections are mild and may be without symptoms. Persons with weakened immune systems, however, are more susceptible to infection. The disease is acquired by inhaling the yeast-like cells of the organism. Two forms of cryptococcosis occur in humans. The generalized form begins with a lung infection and spreads to other areas of the body, particularly the central nervous system, and is usually fatal unless treated. The cutaneous (skin) form is characterized by acne-like skin eruptions or ulcers with nodules just under the skin. The cutaneous form is very rare, however, without generalized (systemic) disease. Outbreaks (multiple cases at a location) of cryptococcosis infections have not been documented.

Other diseases

Other diseases carried or transmitted by birds affect man to a lesser degree. Psittacosis is normally mild in man; however, serious illness can occur rarely. Pigeons and sparrows also have been implicated (along with many other species of birds) as reservoirs for encephalitis viruses such as West Nile encephalitis virus, which are carried by mosquitoes.

Bats and disease

Bats are associated with a few diseases that affect people, such as rabies and histoplasmosis. Rabies is a dangerous, fatal disease, but only about 5 percent of bats submitted for testing are infected with the rabies virus. In recent years, there has been increased concern about the risk of rabies transmission following contact with bats. If an injured or ill bat is found in or around a structure, it should be removed. Because most bats will try to bite when handled, they should be picked up with tongs or a shovel. (contact your local animal control officer or the Illinois Department of Natural Resources at 217- 785-8774 for information on safe bat capture.) If a bat has bitten or scratched a person or pet or is found in your home, capture the bat without touching it with your hands and without crushing its head. If the bat is dead, refrigerate it (DO NOT freeze) and then contact your local health department **immediately** for instructions.

Bats with rabies have been identified in most areas of the state. In recent years, bats have been the most common animal identified with rabies in the state.

The incidence of histoplasmosis being transmitted from bat droppings to humans is not thought to be high. Nevertheless, fresh bat droppings (unlike fresh bird dropping) can contain the histoplasmosis fungus. Bat droppings do not need to come into contact with soil to be a source of the disease.

Ticks, mites and other parasites

Bird or bat roosts can harbor parasites that may invade buildings. Although these parasites can bite and irritate, they are unlikely to transmit diseases to humans. The northern fowl mite and chicken mite are usually the main culprits. Other parasites that may cause problems inside buildings include the pigeon nest bug and the bat bug (both related to the bed bug), soft ticks, biting lice and the pigeon fly. Although most parasites associated with bird or bat roosts die quickly after the birds or bats leave, some may live for several weeks.

Droppings, feathers, food and dead birds under a roosting area can breed flies, carpet beetles and other insects that may become major problems in the immediate area. These pests may fly through open windows or crawl through cracks to enter buildings. If birds or bats are discouraged from roosting around buildings, most of the parasites associated with them will soon die. If the pests are a problem after birds or bats have been excluded, the roost area may be treated with a residual insecticide appropriately labeled by the U.S. Environmental Protection Agency for control of fleas, ticks, mites and similar pests.

Removal and cleanup of bird and bat droppings

If there is a small accumulation of droppings from a few birds or bats, it can be cleaned up with soap and water. If large quantities of bird or bat droppings are present, contact an environmental engineering consultant for advice.

Workers should follow certain precautions to minimize risk from disease organisms in the droppings:

- During the cleanup, seal heating and cooling air ducts or shut the system down. Only authorized cleanup personnel should be present.
- The cleanup should be done by healthy individuals.
- Wear a respirator that can filter particles as small as 0.3 microns.
- Wear disposable protective gloves, hat, coveralls and shoe coverings.
- Moisten the droppings with a light mist of water to keep spores from becoming airborne and keep them wet.
- Put droppings into sealed plastic garbage bags. The outside of the garbage bags should be rinsed off before they are placed in a disposal container.
- When finished and while still wearing the respirator, remove protective clothing and place it in a plastic bag.
- Wash or shower.
- Check with local government agencies to verify that disposal of the waste is permissible through standard trash pickup.
- Modify the structure to prevent birds or bats from reestablishing the roost.

idph online home



health fact sheets



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MMWR Compendium of Measures to Prevent Disease Associated with Animals in Public Settings, 2011

Guidelines for Animals in School and Child-Care Settings

Animals are effective and valuable teaching aids, but safeguards are required to reduce the risk for infection and injury. The following guidelines are a summary of guidelines developed by the Alabama Department of Public Health,* the Kansas Department of Health and Environment,† and CDC (78,79). Recommendations also are available from the National Science Teachers Association§ and the National Association of Biology Teachers.¶

General Guidelines for School Settings**

- Wash hands after contact with animals, animal products or feed, or animal environments.
- Supervise human-animal contact, particularly involving children aged <5 years.
- Display animals in enclosed cages or under appropriate restraints.
- Do not allow animals to roam, fly free, or have contact with wild animals.
- Designate specific areas for animal contact.
- Do not allow food in animal contact areas; do not allow animals in areas where food and drink are prepared, served, or consumed.
- Clean and disinfect all areas where animals and animal products have been present. Children should perform this task only under adult supervision.
- Do not clean animal cages or enclosures in sinks or other areas used to prepare, serve, or consume food and drinks.
- Obtain appropriate veterinary care, a certificate of veterinary inspection, or proof of rabies vaccination (or all of these) according to local or state requirements.
- Keep animals clean and free of intestinal parasites, fleas, ticks, mites, and lice.
- Parents should be informed of the benefits and potential risks associated with animals in school classrooms. Consult with parents to determine special considerations needed for children who are immunocompromised, have allergies, or have asthma.
- Ensure that personnel providing animals for educational purposes are knowledgeable regarding animal handling and zoonotic disease issues. Persons or facilities that display animals to the public should be licensed by the U.S. Department of Agriculture.

Animal-Specific Guidelines

- **Fish:** Use disposable gloves when cleaning aquariums, and do not dispose of aquarium water in sinks used for food preparation or for obtaining drinking water.
- **Psittacine birds (e.g., parrots, parakeets, and cockatiels):** Consult the psittacosis compendium,^{¶¶} and seek veterinary advice. Use birds treated or that test negative for avian chlamydiosis.
- **Nonpsittacine birds:** See General Guidelines for School Settings.

- **Domestic dogs, cats, rabbits, and rodents (e.g., mice, rats, hamsters, gerbils, guinea pigs, and chinchillas):** See General Guidelines for School Settings.
- **Reptiles (e.g., turtles, snakes, and lizards):** Do not keep in facilities with children aged <5 years, nor should children aged <5 years be allowed to have direct contact with these animals.
- **Amphibians (e.g., frogs, toads, salamanders, and newts):** Do not keep in facilities with children aged <5 years, nor should children aged <5 years be allowed to have direct contact with these animals.
- **Live poultry (e.g., chicks, ducklings, and goslings):** Do not keep in facilities with children aged <5 years, nor should children aged <5 years be allowed to have direct contact with these animals.
- **Ferrets:** Do not keep in facilities with children aged <5 years, nor should children aged <5 years be allowed to have direct contact with these animals to prevent bites.
- **Farm animals:** See General Guidelines for School Settings. Certain animals (e.g., young ruminants and baby poultry) intermittently excrete substantial numbers of germs; therefore, these farm animals are not appropriate in school or child-care settings unless meticulous attention to personal hygiene can be ensured.
- **Animal products:** Assume that products such as owl pellets and frozen rodents used to feed reptiles are contaminated with *Salmonella* organisms. Owl pellets should not be dissected in areas where food is prepared, served, or consumed. Children aged <5 years should not be allowed to have direct contact with animal products.

Animals Not Recommended in School or Child-Care Settings

- Inherently dangerous animals (e.g., lions, tigers, cougars, and bears).
- Nonhuman primates (e.g., monkeys and apes).
- Mammals at high risk for transmitting rabies (e.g., bats, raccoons, skunks, foxes, and coyotes).
- Aggressive or unpredictable wild or domestic animals.
- Stray animals with unknown health and vaccination history.
- Venomous or toxin-producing spiders, insects, reptiles, and amphibians.

http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6004a1.htm?s_cid=rr6004a1_w#AppD



HANDWASHING GUIDELINES

According to the Centers for Disease Control and Prevention (CDC) handwashing is one of the most important means of preventing the spread of infection. Disease causing germs enter your body when unwashed hands touch your nose, mouth, eyes, or non-intact skin.

HOW TO WASH HANDS

1. Wet hands with warm running water and apply soap, preferably liquid.
2. Rub hands vigorously together for 15-20 seconds scrubbing all surfaces, including palms, backs of hands, under and around nails, between fingers and wrists.
3. Rinse hands under running water. Leave water running while drying hands.
4. Dry hands with a clean disposable paper towel or a single use cloth towel.
5. Turn the faucet off using the disposable towel.
6. Discard the used towel in a trash can.

When assisting a child in handwashing, upon completion, wash your own hands.

WHEN TO WASH HANDS (Staff and Children)

1. At the start of each day or when moving from one group of children to another
2. Before and After:
 - Eating, handling food (raw and cooked) or feeding a child
 - Administering medication or tending to a hurt or sick child
3. After:
 - Diapering or toileting
 - Coming in contact with body fluids or tending to wounds or sick persons
 - Wiping noses, mouths, eyes or sores or covering coughs and sneezes
 - Handling pets or visiting animal environments
 - Playing outdoors, in sandboxes or in water that is used by more than one person
 - Cleaning the environment
 - Removal of gloves
 - Handling Garbage
4. At the end of each day and when your hands are visibly soiled

When soap and water are not available, disposable wipes or a hand gel sanitizer are an alternative.



GUIDELINES FOR DIAPERING A CHILD

Following the recommended procedure for diapering will assist in limiting surface and hand contamination and thereby limit the spread of infectious diseases.

A. DIAPER CHANGING AREA

- A firm, safe table that can be cleaned and disinfected; the table surface must be made of a moisture proof, non absorbent and non-porous material
- Single use paper or another disposable covering for the table
- Handwashing sink adjacent to the table, preferably with foot or knee control, that includes hot and cold running water (75-110 degrees)
- Liquid hand soap and disposable paper towels
- A covered waste receptacle (preferably foot operated) lined with a disposable plastic bag for soiled diapers, wipes, and table paper; soiled waste must be disposed of daily
- Diaper changing area should not be located in food preparation area
- Sinks should not be used for bathing or removing smeared fecal material
- Drinking and eating utensils and food should not be washed in the diaper area sinks

B. NEEDED SUPPLIES:

- Fresh diaper and clean clothes (if necessary)
- Baby wipes, or other supplies for cleaning the skin
- Child's personal, labeled ointment (if provided by parents)
- Plastic bags that can be tied shut for soiled clothing
- Disposable gloves

C. DIAPERING PROPERLY:

- *Wash hands* and cover changing table with disposable paper.
- Put on disposable gloves.
- Using only your hands, pick up and hold the child away from your body. Don't cradle the child in your arms and risk soiling your clothing.
- Lay the child on the paper or towel.
- Remove soiled diaper, fold soiled surfaces inward.
- If clothing is soiled, remove and place directly, without rinsing, in plastic bag that is tied shut. Clothing is to be sent home and cleaned by parents.
- Clean child's bottom with pre-moistened disposable baby wipes or a dampened, single use disposable towel moving from front to back.
- Place the soiled diaper and wipe(s) in the covered waste receptacle.
- Remove and discard gloves. Wipe your hands with pre-moistened disposable wipe. Washing them is preferable, but sink **MUST** be adjacent. Do not leave child unattended.
- Make sure child's skin is dry before applying clean diaper. If ointment is to be applied use a swab or clean gloves to prevent contamination of hands.
- Diaper and dress child.
- Wash child's hands and return him/her to activity.
- Remove and dispose of disposable table paper.
- Clean and disinfect changing table.
- **Wash hands thoroughly.**

D. MISCELLANEOUS

1. The safety of the child on the changing table must be considered at all times. **NEVER** leave a child alone on the table.
2. Keep all supplies and solutions out of the reach of the children.
3. Powders or oils are not recommended for use on the child's skin.
4. Aerosol solutions are not recommended due to the potential for lung irritation.
5. Always maintain a pleasant attitude while changing a child's diaper. Never show disgust or scold a child who has had a bowel movement.

CLEANING, SANITIZING / DISINFECTING RECOMMENDATIONS

The following table is a recommended frequency schedule for cleaning & sanitizing objects and disinfecting environmental surfaces. Routine frequencies may need to be increased whenever an outbreak or increased incidence of an illness is occurring or when there is known contamination or visible soiling.

AREA	CLEAN	SANITIZE/ DISINFECT	FREQUENCY
Classrooms/Child Care/Food Areas			
Countertops/tabletops, Floors, Door and cabinet handles	X	X	Daily and when soiled.
Food preparation & service surfaces	X	X	Before and after contact with food activity; between preparation of raw and cooked foods.
Carpets and large area rugs	X		Vacuum daily when children are not present. Clean with a carpet cleaning method approved by the local health authority. Clean carpets only when children will not be present until the carpet is dry. Clean carpets at least monthly in infant areas, at least every 3 months in other areas and when soiled.
Small rugs	X		Shake outdoors or vacuum daily. Launder weekly.
Utensils, surfaces and toys that go into the mouth or have been in contact with saliva or other body fluids	X	X	After each child's use, or use disposable, one-time utensils or toys.
Toys that are not contaminated with body fluids. Dress-up clothes not worn on the head. Sheets and pillowcases, individual cloth towels (if used), combs and hairbrushes, wash cloth and machine-washable cloth toys. (None of these items should be shared among children.)	X		Weekly and when visibly soiled.
Blankets, Sleeping bags, Cubbies	X		Monthly and when soiled.
Hats	X		After each child's use or use disposable hats that only one child wears.
Cribs and crib mattresses	X		Weekly, before use by a different child, and whenever soiled or wet.
Phone receivers	X	X	Weekly.
Toilet and Diapering Areas			
Handwashing sinks, faucets, surrounding counters, soap dispensers, door knobs	X	X	Daily and when soiled.
Toilet seats, toilet handles, door knobs or cubicle handles, floors	X	X	Daily, or immediately if visibly soiled.
Toilet bowls	X	X	Daily.
Changing tables, potty chairs (Use of potty chairs in child care is discouraged because of high risk of contamination).	X	X	After each child's use.
General Facility			
Mops and cleaning rags	X	X	Before and after a day of use, wash mops and rags in detergent and water, rinse in water, immerse in sanitizing solution, and wring as dry as possible. After cleaning and sanitizing, hang mops and rags to dry.
Waste and diaper containers	X		Daily.
Any surface contaminated with body fluids: saliva, mucus, vomit, urine, stool, or blood	X	X	Immediately



SAFE FOOD HANDLING

Despite the fact that the United States has the safest food supply in the world, it is not invincible. In Illinois, it is estimated that as many as 250,000 cases of foodborne illness may occur each year. However, because these illnesses can be quite mild and because the vast majority of them occur in the home, many go unreported. Yet, foodborne illnesses can lead to serious complications and even death. Therefore, how you handle food in your home can mean the difference between health and illness.

The following suggestions will help you to select, store and prepare foods properly.

Selecting Food at the Store

If you have a number of errands to run in addition to shopping for food, be sure to make the grocery store your last stop. If possible, keep a cooler in your car for transporting refrigerated or frozen items. Take food items home immediately and put them in your refrigerator or freezer. NEVER leave food in a hot vehicle!

Check use-by dates and make sure you can use the food by those dates.

Make sure the food items you buy are in good condition. Refrigerated food should be cold to the touch. Frozen foods should be solid. Canned goods should not be dented, cracked or bulging. Produce should appear fresh. Meat should have a good color and be firm to the touch.

Storing Food at Home

To keep bacteria from rapidly reproducing, be sure your refrigerator is set at the proper temperature. (If you think your refrigerator is not maintaining the correct temperature, get an appliance thermometer from a hardware store and check the accuracy of the temperature setting.) To keep bacteria in check, the refrigerator should run at 40 degrees F, the freezer unit at 0 degrees F. A good general rule to follow is to keep the refrigerator as cold as possible without freezing milk or lettuce.

If you don't plan to use it within a few days, freeze fresh meat, poultry or fish.

When refrigerating raw meat, poultry or fish, be sure to place the package on a plate

so that their juices do not drip on other food. Raw juices can contain bacteria.

Always keep eggs in the refrigerator.

Preparing Food

Be sure to wash your hands in warm soapy water before preparing food and after using the bathroom, changing diapers and handling pets.

Kitchen towels, sponges and cloths can harbor bacteria. Wash them often and replace sponges every few weeks.

Keep raw meat, poultry and fish and their juices away from other food. For example, after cutting up meat or poultry, be sure to wash your hands, the knife and the cutting board in hot soapy water before you start to dice salad ingredients.

Thaw food in the microwave or in the refrigerator. **DO NOT** thaw items on the kitchen counter. This allows bacteria to grow in the outer layers of the food before the inside thaws. If you plan to marinate food, do it in the refrigerator, too.

Cooking Food

Thorough cooking kills harmful bacteria. If you eat meat, poultry, fish, oysters or eggs that are raw or only partially cooked, you may be exposing yourself to bacteria that can make you ill. This is particularly important for children, pregnant women, the elderly, and those whose immune systems are compromised by illness or by medical treatment (for example, chemotherapy).

Use a meat thermometer to ensure that meat and poultry are cooked to the appropriate temperature. Check the chart at the end of this fact sheet for the proper internal cooking temperatures for various meats and poultry.

Salmonella, a bacteria that causes food poisoning, can grow inside fresh, unbroken eggs. Be sure to cook eggs until the yolk and white are firm, not runny. Scramble eggs to a firm texture. Avoid recipes in which eggs remain raw or only partially cooked (for example, mousse, egg drinks, Caesar salad, etc.). Pasteurized eggs or egg substitute can be used instead.

If you prepare and cook food ahead of time, divide large portions into small, shallow containers and refrigerate. This ensures rapid, safe cooling.

Safe Microwaving

While microwaves are great time savers, they can leave cold spots in food. Bacteria can survive in these spots.

Be sure to cover food with a lid or plastic wrap so steam can help to promote thorough cooking. Vent plastic wrap and make sure it doesn't touch the food.

Stir and rotate food for even cooking. If your microwave does not have a turntable, rotate the dish by hand once or twice during the cooking time.

Observe the standing time called for in a recipe or on package directions. During the standing time, the food finishes cooking.

Use an oven temperature probe or a meat thermometer to check that food is done. Be sure to check several spots.

Serving Food

Never leave perishable food unrefrigerated for more than two hours. Bacteria that can cause food poisoning grow quickly at warm temperatures.

Always use clean dishes and utensils to serve food, not those you used to prepare the food. If you grill food, serve it on a clean plate, not on the one that held the raw meat, poultry or fish.

Pack lunches in insulated carriers with a cold pack. Be sure your children know not to leave lunches in direct sunlight or on warm radiators.

Carry picnic food in a cooler with a cold pack. Try to keep the cooler in the shade and do not open the lid any more than is necessary.

If you have a party, keep cold food on ice or keep refrigerated until time to replenish platters. If serving hot food, maintain it at 140 degrees F or divide into smaller serving platters, which can be refrigerated until time to warm them up for serving.

Handling Leftovers

Divide large amounts of leftovers into small, shallow containers for quick cooling in the refrigerator. Don't pack the refrigerator; cool air must be able to circulate to keep food safe.

With poultry or other stuffed meats, remove stuffing and refrigerate it in a separate container.

Reheating Food

Bring sauces, soups and gravies to a boil. Heat other leftovers thoroughly to 165 degrees F.

Microwave leftovers using a lid or vented plastic wrap to ensure thorough heating.

Keeping Food

Never taste food that looks or smells strange. Just discard it. A good rule to follow is – When in doubt, throw it out.

Feeling Ill?

If you or a family member develop nausea, vomiting, diarrhea, fever or abdominal cramps, you could have food poisoning. Sometimes, though, it is not easy to tell. Symptoms of foodborne illnesses can appear anywhere from 30 minutes to two weeks after eating the contaminated food. Most often, people get sick with four to 48 hours after eating bad food.

Some foodborne illnesses will resolve themselves without treatment. However, if the symptoms are severe or if the victims is very young, old, pregnant or already ill, call a doctor or go to a nearby hospital immediately.

	Fahrenheit	Celsius
Fresh Beef		
Medium Rare	145	63
Medium	160	71
Well Done	170	77
Ground Beef	160	71
Fresh Veal		
Medium Rare	145	63
Medium	160	71
Well Done	170	77
Fresh Lamb		
Medium Rare	145	63
Medium	160	71
Well Done	170	77

Game

Deer	165	74
Rabbit	180	82
Duck	180	82
Goose	180	82

Ratites

Ostrich	160	71
Rhea	160	71
Emu	160	71

Eggs

Fried, poached	(cook until yolk and white are firm)	
Casseroles	160	71
Sauces, custards	160	71

Poultry

Chicken	180	82
Turkey	180	82
Turkey Roast (boneless)	170	77
Stuffing (inside or outside bird)	165	74

Fresh Pork**Chops, Roast, Ribs**

Medium	160	71
Well Done	170	77

Cured Pork

Ham, Fresh	160	71
Sausage, Fresh	160	71

Note: Home cooking temperatures are slightly higher than commercial cooking temperatures to provide a safety margin in case of variation in the accuracy of home thermometers.

Consumer guidelines from U.S. Department of Agriculture, Food Safety and Inspection Services; and U.S. Food and Drug Administration

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GUIDELINES FOR PREVENTION OF HEAT RELATED ILLNESS IN SCHOOLS

Heat illness occurs when heat produced by physical activity combines with that gained from the environment to exceed the heat-losing capacity of the body. Normally, the body decreases its temperature by two mechanisms: (1) by increasing blood flow to the body surface, and (2) by perspiration that cools by evaporation. When the environmental humidity approaches or reaches 80 percent, evaporation of perspiration ceases, and dissipation of heat is no longer possible (American Academy of Pediatrics, *School Health: A Guide for Health Professionals*, 1981).

To aid in the prevention of heat-related illness in schools, the Illinois Department of Public Health recommends the following interventions:

- Ensure that students are well hydrated.
- Plain water is the liquid of choice, with sports drinks – such as Gatorade® – and diluted fruit juice acceptable forms of fluid replacement.
- Encourage students to wear loose fitting summer clothing.
- In order to prevent heat fatigue, offer regularly scheduled rest periods.
- Indoor temperatures can sometimes exceed the outdoor temperature. To assist in keeping the classroom temperature comfortable, keep windows and doors open with at least one fan moving air throughout the room.
- Allow students to utilize alternative areas located on the lower or ground level of the school or shady areas on the school grounds.
- Encourage the school district to establish both a policy and a plan to deal with extreme temperatures.
- Age-appropriate prevention education regarding heat related illnesses should be made available for all students, parents and staff. Call on local resources – for example, local health department staff, physicians and health educators – to assist with this.

SIGNS OF HEAT EMERGENCIES

Heat Cramps

- | | |
|------------------|---|
| SYMPTOMS | <ul style="list-style-type: none">• Muscular cramps brought on by exercise and the resulting loss of sodium |
| TREATMENT | <ul style="list-style-type: none">• Move the person to a cooler place to rest in a comfortable position. |

- Lightly stretch the affected muscle and replenish fluids.
- Give person small amounts (4 oz.- 5 oz.) of water every 15 minutes.
- **DO NOT GIVE ALCOHOL OR CAFFEINE; THIS CAN WORSEN THE CONDITION.**

Heat Exhaustion

SYMPTOMS

- Cool, moist, pale or flushed skin
- Heavy sweating, headache, nausea or vomiting
- Dizziness and exhaustion
- Body temperature near normal

TREATMENT

- Move the person out of the heat and into a cooler place.
- Remove or loosen tight clothing and apply cool wet cloths, such as towels or sheets.
- If the person is conscious, give cool water to drink. Make sure the person drinks slowly. Give a half glass of cool water every 15 minutes.
- Observe the victim carefully for changes in condition.
- **DO NOT GIVE ALCOHOL OR CAFFEINE; THIS CAN WORSEN THE CONDITION.**

Heat Stroke

SYMPTOMS

- Hot, red skin
- Change in consciousness, irritability, confusion
- Rapid, weak pulse and rapid, shallow breathing
- Body temperature can be very high – sometimes as high as 105 degrees F.
- Skin may feel wet **or** dry.

TREATMENT

- Call 911 or your local emergency number.
- Quickly cool the body: Immerse victim in a cool bath or wrap wet sheets around the body and fan the victim.
- If victim refuses water, is vomiting or shows a decreased level of consciousness, do not give anything to eat or drink.

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STANDARD AND UNIVERSAL PRECAUTIONS

The terms “Standard Precautions” and “Universal Precautions” were developed for applications in medical and industrial settings. They apply to early education and child care programs with some adjustments from their meaning in other settings. The Centers for Disease Control and Prevention uses the term “Standard Precautions” while the Occupational Safety and Health Administration uses the term “Universal Precautions.” Standard Precautions cover all situations where body fluids might be present. Universal Precautions do not apply to stool, nasal secretions, sputum, sweat, tears, urine, saliva, and vomit unless these contain blood. The procedures that apply to early education and child care settings when either term is used are nearly identical.

What are Standard Precautions?

Standard Precautions apply to contact with non-intact skin, mucous membranes, and blood, all body fluids, and excretions except sweat, whether or not they contain visible blood. They include general methods of infection prevention and are indicated for both children and adults in the early education and child care setting. These methods reduce the risk of transmission of microorganisms (germs) that can cause infection, even when those spreading the micro-organisms do not appear to be ill.

Standard precautions involve using barriers to prevent contact with the body fluid of another person, cleaning, and sanitizing contaminated surfaces. Unlike medical care settings, gowns and masks are not required in early education and child care facilities. Appropriate barriers to use include materials such as moisture-resistant disposable diaper table paper, disposable towels, and gloves. Use of disposable, non-porous gloves is optional except when blood or blood containing body fluids may be involved. Gloves are not required for feeding human (breast) milk, or for cleaning up spills of human milk. Using gloves for diapering is optional. Hand hygiene is always needed, even if gloves are worn.

How do sanitizing and disinfecting differ?

Sometimes people use these terms as if there is no difference. As defined in Appendix J of *Caring for Our Children*, 3rd edition, they are different:

Sanitizing: “Sanitizer is a product that reduces germs on inanimate surfaces to levels considered safe by public health codes or regulations. A sanitizer may be appropriate to use on food contact surfaces (dishes, utensils, cutting boards, high chair trays) toys that children may place in their mouths and pacifiers.”

Disinfecting: “Disinfectant is a product that destroys or inactivates germs on an inanimate object. A disinfectant may be appropriate to use on non-porous surfaces such as diaper changing tables, countertops, door and cabinet handles, and toilets and other bathroom surfaces.”

Look for the U.S. Environmental Protection Agency (EPA) registration number on the label of any product to be used as a sanitizer or disinfectant. A very large number of EPA registered products are available. To select environmentally friendly products, look for the Design for the Environment (DfE) label authorized by the EPA that indicates that “based on currently available information, EPA predictive models, and expert judgment – the product contains only those ingredients that pose the least concern among chemicals in their class.” <http://epa.gov/dfe/pubs/projects/formulat/label.htm> Federal law requires that all EPA-registered products must be used according to the instructions on the manufacturer’s label.

Properly diluted household bleach that is 5-8% hypochlorite and is not EPA-registered is a practical and inexpensive alternative to an EPA-registered product for sanitizing or disinfecting. Use the following

instructions adapted from Appendix J of *Caring for Our Children*, third edition to safely prepare bleach solutions for sanitizing or disinfecting.

Add bleach to cool water in a bottle made of opaque material. Make bleach dilutions fresh daily since bleach tends to evaporate over the course of the day. Label the bottle with the contents, date mixed, when and on which surfaces the dilution should be used. Use eye and skin protection, a funnel and measuring device, and a well-ventilated space to prepare the dilutions. Apply it as a heavy spray close to the surface or pour the solution to wet the surface to glistening. It may help to prevent confusion between the two dilutions if the disinfecting dilution is kept in a spray bottle and the sanitizing dilution is kept in a pour bottle. Avoid putting bleach into the air or on surfaces other than those intended to be treated. Allow at least 2 minutes of contact time.

Sanitizer dilution of bleach: 1 teaspoon bleach/quart or 1 tablespoon of bleach/gallon of water. This is the solution to use on most surfaces.

Disinfectant dilution of bleach: 1 tablespoon bleach/quart or ¼ cup/gallon of water

Note: the surface must be visibly clean before sanitizing or disinfecting it. If it is not visibly clean, wash the surface with detergent solution, and then rinse with water before applying the sanitizer or disinfectant. Some sanitizers/disinfectants require rinsing the surface after the chemical is applied for the require contact time. Be sure to read labels and follow the manufacturer's instructions for use.

What method should be used to apply Standard Precautions?

For spills of body fluids, urine, stool, vomit, blood, saliva, nasal discharge, eye discharge, injury or tissue discharges, use the following step-by-step approach:

1. Wear gloves if you suspect you may contact blood or blood-containing body fluids, including blood-containing tissue or injury discharges. Either single-use disposable gloves or utility gloves should be used except when blood is involved. Disposable gloves should always be used when blood may be present in the spill. Pick up the spill using disposable towels and tools that can be disinfected afterward. Be careful not to splash any of the contaminated materials around.
2. Use a detergent to clean all surfaces in contact with the spill. Rinse with water. Blot the spill to remove the fluid as quickly as possible before the spill penetrates the surface to lower layers. Then clean and sanitize by spot-cleaning with a detergent-disinfectant, shampooing, or steam-cleaning the contaminated surface. Cleaning and sanitizing rugs without damaging them may require use of special cleaning (detergent-disinfectant) agents designed for use on rugs, or steam cleaning. Consult with local health departments for additional guidance about cleaning contaminated floors, rugs, and carpeting.
For spills of vomit, urine, human milk, or stool, on floors, walls, bathrooms, tabletops, toys, kitchen counter tops, or diaper-changing tables: first clean the surface with a detergent solution and water, then rinse with water. Apply a disinfecting solution. Dispose of any blood-contaminated material in a plastic bag with a secure tie.
3. Use single-use disposable gloves only once and then discard them into a hands-free, covered receptacle that is lined with a leak-proof, plastic bag that can be securely tied or sealed when you remove it to put it in the trash. Avoid handling the contaminated gloves. If you use utility gloves, keep them on your hands while you clean them after every use with soap and water and then dip them in a disinfecting dilution of bleach up to the wrist. Then take the gloves off and hang them to dry. Wash your hands afterward, even if you wore gloves.

What should caregivers do when there has been a possible exposure to blood through a skin wound or contaminated fluid getting into the mouth, nose or eyes?

Stay calm and rational. Bacteria and viruses carried in the blood, such as hepatitis B virus, pose a small but specific risk in the child care setting. Blood and blood-derived fluids (such as watery discharges from injuries) pose the highest potential risk, because these body fluids contain the highest concentration of germs. Hepatitis B virus can survive in a dried state in the environment for at least a week and perhaps even longer. Some other body fluids such as saliva contaminated with blood or blood-associated fluids may contain live virus (such as hepatitis B virus) but at lower concentrations than are found in blood. Other body fluids, including urine and feces, do not pose a risk with blood borne diseases unless they are visibly contaminated with blood, although these fluids do pose a risk with other infectious diseases.

Mucous membrane exposure to blood is unlikely to cause disease unless the person whose blood was transferred has a blood-borne disease. Instances in which one child draws blood of another individual during biting or otherwise gets blood from another person on mucous membranes are very rare. Child bites rarely break the skin and when the skin is broken, bleeding begins a few seconds later, usually after the biter releases the bitten flesh. Even though biting is a common behavior by young children, transmission of blood borne disease by biting in child care has not been reported. Nevertheless, if blood transfer occurs and exposes a mucous membrane to blood from another individual (e.g. blood from another individual is visible in the mouth of a biter), you need to treat this as an accidental exposure to a potential HIV-containing body fluid. HIV testing may not account for a potential exposure to the virus from the time between a previous test and the exposure. The person who has had a mucous membrane exposure to blood should be tested up to 9 months after the exposure if the status of the donor of the blood is unknown.

When a mucous membrane blood exposure occurs:

Inform the exposed adult or the parents/legal guardians of the child who had a mucous membrane exposure to someone else's blood that:

- 1) The adult or child was exposed to another person's blood;
- 2) The risk of transmission of HIV is very small;
- 3) The exposed adult or the parents/legal guardians of the exposed child should notify the primary care physician of the exposure;
- 4) The person who was exposed to blood should have a baseline test for HIV. Inform the person whose blood was involved (or the parents/legal guardians if that person is a child) about the incident and ask:
 - If the person whose blood is involved ever had an HIV test and, if so, if those results could be shared with the exposed adult or parents of the exposed child;
 - If that person does not know or has never had an HIV test ask if that person would be willing to have one and share results with the exposed adult or the parents of the child who was exposed.

Some children and adults may unknowingly be infected with HIV or other infectious agents, such as hepatitis B virus, as these agents may be present in blood or body fluids. Thus, the staff in all facilities should adopt standard precautions for all blood spills and possible exposure to blood. The Occupational Safety and Health Administration (OSHA) requires a facility plan and annual training of staff members who may be exposed to blood as a condition of their employment.

For additional information, see:

American Academy of Pediatrics, American Public Health Association, National Resource Center for Health and Safety in child Care and Early Education. 2011. Caring for our children: National health and safety performance standards; Guidelines for early care and education programs. third edition. Elk Grove Village, IL: American Academy of Pediatrics; Washington, DC: American Public Health Association. Standard 3.2.3.4: Prevention of Exposure to Blood and Body Fluids.

Also available at <http://nrckids.org>

Caring for Our Children: National Health and Safety Performance Standards

Appendix J

Selecting an Appropriate Sanitizer or Disinfectant

One of the most important steps in reducing the spread of infectious diseases in child care settings is cleaning, sanitizing or disinfecting surfaces that could possibly pose a risk to children or staff. Routine cleaning with detergent and water is the most common method for removing some germs from surfaces in the child care setting. However, most items and surfaces in a child care setting require sanitizing or disinfecting after cleaning to further reduce the number of germs on a surface to a level that is unlikely to transmit disease.

What is the difference between sanitizing and disinfecting?

Sometimes these terms are used as if they mean the same thing, but they are not the same.

Sanitizer is a product that reduces but does not eliminate germs on inanimate surfaces to levels considered safe by public health codes or regulations. A sanitizer may be appropriate to use on food contact surfaces (dishes, utensils, cutting boards, high chair trays), toys that children may place in their mouths, and pacifiers.

Disinfectant is a product that destroys or inactivates germs (but not spores) on an inanimate object. A disinfectant may be appropriate to use on hard, non-porous surfaces such as diaper change tables, counter tops, door & cabinet handles, and toilets and other bathroom surfaces.

The U.S. Environmental Protection Agency (EPA) recommends that only EPA-registered products be used. Only a sanitizer or disinfectant product with an EPA registration number on the label can make public health claims that they are effective in reducing or inactivating germs. Many bleach and hydrogen peroxide products are EPA-registered and can be used to sanitize or disinfect. Please see the “How to Find EPA Registration Information” section below to learn more specific information on the products.

Always follow the manufactures’ instructions when using EPA-registered products described as sanitizers or disinfectants. This includes pre-cleaning, how long the product needs to remain wet on the surface or item, whether or not the product should be diluted or used as is, and if rinsing is needed. Also check to see if that product can be used on a food contact surface or is safe for use on items that may go into a child’s mouth. Please note that the label instructions on most sanitizers and disinfectants indicate that the surface must be pre-cleaned before applying the sanitizer or disinfectant.

Are there alternatives to chlorine bleach?

A product that is not chlorine bleach can be used in child care settings IF:

- it is registered with the EPA;
- it is also described as a sanitizer or as a disinfectant;
- it is used according to the manufacturer’s instructions.

Check the label to see how long you need to leave the sanitizer or disinfectant in contact with the surface you are treating, whether you need to rinse it off before contact by children, for any precautions when handling, and whether it can be used on a surface that may come in contact with child’s mouth.

Some child care settings are using products with hydrogen peroxide as the active ingredient instead of chlorine bleach. Check to see if the product has an EPA registration number and follow the manufacturer’s instructions for use and safe handling. (Please see the “How to Find EPA Registration Information” section below for more information.) Remember that EPA-registered products will also have available a Material Safety Data Sheet (MSDS) that will provide instructions for the safe use of the product and guidance for first aid response to an accidental exposure to the chemical.

In addition, some manufacturers of sanitizer and disinfectant products have developed “green cleaning products” that have EPA registration. As new environmentally-friendly cleaning products appear in the market, check to see if they are EPA-registered.

Household Bleach & Water

Many household bleach products are now EPA-registered. When purchasing EPA-registered chlorine bleach, make sure that the bleach concentration is for household use, and not for industrial applications. Household chlorine bleach is typically sold in retail stores as an 8.25% sodium hypochlorite solution.

EPA-registered bleach products are described as sanitizers and disinfectants. Check the label to see if the product has an EPA registration number and follow the manufacturer's safety and use instructions. (Please see the "How to Find EPA Registration Information" section below for more information.) Pay particular attention to the mixing "recipe" and the required contact time (i.e., the time the solution must remain on a surface to be effective) for each use. Remember, the recipe and contact time are most likely different for sanitizing and disinfecting.

If you are not using an EPA-registered product for sanitizing and disinfecting, please be sure you are following state or local recommendations and/or manufacturer's instructions for creating safe dilutions necessary to sanitize and/or disinfect surfaces in your early care and education environment. Using too little (a weak concentration) bleach may make the mixture ineffective; however, using too much (a strong concentration) bleach may create a potential health hazard.

To safely prepare bleach solutions:

Dilute bleach with cool water and do not use more than the recommended amount of bleach.

Select a bottle made of opaque material.

Make a fresh bleach dilution daily; label the bottle with contents and the date mixed.

Wear gloves and eye protection when diluting bleach.

Use a funnel.

Add bleach to the water rather than the water to bleach to reduce fumes.

Make sure the room is well ventilated.

Never mix or store ammonia with bleach or products that contain bleach.

To safely use bleach solutions:

Apply the bleach dilution after cleaning the surface with soap or detergent and rinsing with water if visible soil is present.

If using a spray bottle, adjust the setting to produce a heavy spray instead of a fine mist.

Allow for the contact time specified on the label of the bleach product.

Apply when children are not present in the area.

Ventilate the area by allowing fresh air to circulate and allow the surfaces to completely air dry or wipe dry after the required contact time before allowing children back into the area.

Store all chemicals securely, out of reach of children and in a way that they will not tip and spill.

To Review:

Determine if the surface requires sanitizing or disinfecting;

Check the labels of all products to see if they are EPA-registered; there are alternatives to chlorine bleach;

Many chlorine bleach products (8.25% sodium, hypochlorite) are now EPA-registered. If EPA-registered, you must follow the label instructions for “recipes” and contact times;

If using non-EPA-registered products, follow state or local recommendations for “recipes” and contact times;

Prepare and use the solutions safely;

Use products that are safe for oral contact when used on food contact surfaces or on items that may be mouthed by children.

How to Find EPA Registration Information

1. Locate the EPA Registration number on the product label.
2. Go to <http://iaspub.epa.gov/apex/pesticides/f?p=PPLS:1>. Enter this number into the box titled “EPA Registration Number” and click the Search button:

A Final Note

Remember that any cleaning, sanitizing or disinfecting product must always be safely stored out of reach of children. Always follow the manufacturer's instruction for safe handling to protect yourselves and those in your care.

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Adopted from Healthy Child Care PA

PUBLIC HEALTH EMERGENCY PREPAREDNESS

Families and communities expect schools to keep their children and youths safe from threats (human-caused emergencies such as crime and violence) and hazards (natural disasters, disease outbreaks, and accidents). In collaboration with the local government and community partners, schools can take steps to plan for these potential emergencies through the creation of a school Emergency Operations Plan (school EOP). By having plans in place to keep students and staff safe, schools play a key role in taking preventative and protective measures to stop an emergency from occurring or reduce the impact of an incident.

Effective school emergency management planning and development of a school EOP are not done in isolation. It is critical that schools work with their district staff and community partners—local emergency management staff, first responders, and public and mental health officials—during the planning process, as an effective school EOP is supported at the district level and integrated with district, community, regional, and state plans. This collaboration makes more resources available and helps to ensure the seamless integration of all responders.

Figure 1 depicts the six steps in the planning process. At each step, schools should consider the impact of their decisions on ongoing activities such as training and exercises as well as on equipment and resources.

Figure 1: Steps in the Planning Process



This section provides some basic information about specific threats and hazards in Kane County:

- Bio-terrorism (*available in the Public Health Emergency and Preparedness Toolkit*)
- Chemical and Radiological (*available in the Public Health Emergency and Preparedness Toolkit*)
- Extreme Heat
- Tornado
- Thunderstorm and Lightning
- Suspicious Mail Packages Procedure
- Winter Storm

In addition, there is guidance available for the prevention of infectious disease:

- Non-Pharmaceutical Intervention
- Legal Authorities for Isolation and Quarantine

Extreme Heat



Heat kills by pushing the human body beyond its limits. In extreme heat and high humidity, evaporation is slowed and the body must work extra hard to maintain a normal temperature. Most heat disorders occur because the victim has been overexposed to heat or has over-exercised for his or her age and physical condition. Older adults, young children and those who are sick or overweight are more likely to succumb to extreme heat.

Conditions that can induce heat-related illnesses include stagnant atmospheric conditions and poor air quality. Consequently, people living in urban areas may be at greater risk from the effects of a prolonged heat wave than those living in rural areas. Also, asphalt and concrete

store heat longer and gradually release heat at night, which can produce higher nighttime temperatures known as the "urban heat island effect."

A heat wave is an extended period of extreme heat, and is often accompanied by high humidity. These conditions can be dangerous and even life-threatening for humans who don't take the proper precautions.

Before Extreme Heat

To prepare for extreme heat, you should:

- To begin preparing, you should [build an emergency kit](#) and make a [family communications plan](#).
- Install window air conditioners snugly; insulate if necessary.
- Check air-conditioning ducts for proper insulation. Install temporary window reflectors (for use between windows and drapes), such as aluminum foil-covered cardboard, to reflect heat back outside.
- Weather-strip doors and sills to keep cool air in.
- Cover windows that receive morning or afternoon sun with drapes, shades, awnings, or louvers. (Outdoor awnings or louvers can reduce the heat that enters a home by up to 80 percent.)
- Keep storm windows up all year.
- Listen to local weather forecasts and stay aware of upcoming temperature changes.
- Know those in your neighborhood who are elderly, young, sick or overweight. They are more likely to become victims of excessive heat and may need help.
- Be aware that people living in urban areas may be at greater risk from the effects of a prolonged heat wave than are people living in rural areas.
- Get trained in first aid to learn how to treat heat-related emergencies.



During Extreme Heat

What you should do if the weather is extremely hot:

- Listen to [NOAA Weather Radio](#) for critical updates from the National Weather Service (NWS).
- Never leave children or pets alone in closed vehicles.
- Stay indoors as much as possible and limit exposure to the sun.
- Stay on the lowest floor out of the sunshine if air conditioning is not available.
- Postpone outdoor games and activities.
- Consider spending the warmest part of the day in public buildings such as libraries, schools, movie theaters, shopping malls, and other community facilities. Circulating air can cool the body by increasing the perspiration rate of evaporation.
- Eat well-balanced, light, and regular meals. Avoid using salt tablets unless directed to do so by a physician.
- Drink plenty of water; even if you do not feel thirsty. Avoid drinks with caffeine. Persons who have epilepsy or heart, kidney, or liver disease; are on fluid-restricted diets; or have a problem with fluid retention should consult a doctor before increasing liquid intake.
- Limit intake of alcoholic beverages.
- Dress in loose-fitting, lightweight, and light-colored clothes that cover as much skin as possible. Avoid dark colors because they absorb the sun's rays.
- Protect face and head by wearing a wide-brimmed hat.
- Avoid strenuous work during the warmest part of the day. Use a buddy system when working in extreme heat, and take frequent breaks.
- Check on family, friends, and neighbors who do not have air conditioning and who spend much of their time alone.
- Avoid extreme temperature changes.
- Check on your animals frequently to ensure that they are not suffering from the heat.
- Go to a designated public shelter if your home loses power during periods of extreme heat. (See Kane County Cooling Center locations) or Text **SHELTER** + your ZIP code to **43362** (4FEMA) to find the nearest shelter in your area (example: **shelter 12345**).



Kane County Cooling Locations

The following facilities have been pre-identified as community cooling locations

AURORA	Aurora Salvation Army, 437 E. Galena Blvd., 10 am - 4 pm M-F Prisco Community Center, 150 W. Illinois Ave., 8 am - 8:30 pm M-F, 8:30 - 4 pm Saturday Aurora Public Library Main Branch, 1 E. Benton Street, 9 am - 9 pm M-Th, 9 am - 5 pm Fri-Sat Aurora Public Library East Branch, 555 S. Eola Road, 9 am - 9 pm M-Th, 9 am - 5 pm Fri-Sat Aurora Public Library West Branch, 233 S. Constitution Drive, 9 am - 9 pm M-Th, 9 am - 5 pm Fri-Sat State of Illinois Facility, 361 Old Indian Trail Road, 8:30 am - 5 pm, M-F
BATAVIA	Batavia City Hall, 100 N. Island Ave., Check in at police dept. front desk in the main lobby.
CARPENTERSVILLE	Carpentersville Public Works Facility, 1075 Tamarac Drive.
ELGIN	Elgin Police Dept., 151 Douglas Ave. State of Illinois Facility, 600 South State Street, 8:30 am - 5 pm M-F
GENEVA	Geneva City Hall, 22 S. First Street, M-F, 8 am - 5 pm Geneva Public Works Facility, 1800 South Street, M-F 7 am – 4 pm Geneva Fire Dept., 200 East Side Drive, 24 Hours/7 days a week (No sleeping facilities) Geneva Police Dept., 20 Police Plaza, 24 Hours/7 days a week (No sleeping facilities) Geneva Public Library, 127 James St., M-Th 9 am – 9 pm, Fri-Sat 9 am – 5 pm, Sunday 12 pm – 4 pm
MAPLE PARK	Maple Park Maple Park Fire Dept., 305 South County Line Road, M-F 7:30 am - 5 pm
PINGREE GROVE	Pingree Grove Police Dept., One Police Plaza, 8 am - 9 pm
ST. CHARLES	St. Charles Public Library, One South Sixth Ave, 9 am - 9 pm M-Th, 9 am - 8pm Fri, 9 am - 5 pm Sat, Noon - 5 pm Sun. Charlestowne Mall, Rt 64 & Kirk Road
SOUTHE ELGIN	South Elgin South Elgin Village Hall, 10 North Water Street
SUGAR GROVE	Sugar Grove Sugar Grove Fire Dept., 25 S. Municipal Drive, 7 am - 10 pm
WEST DUNDEE	West Dundee Public Safety Center 2, 100 Carrington Drive

Know the Terms

Familiarize yourself with these terms to help identify an extreme heat hazard:

Heat Wave - Prolonged period of excessive heat often combined with excessive humidity.

Heat Index - A number in degrees Fahrenheit (F) that tells how hot it feels when relative humidity is added to the air temperature. Exposure to full sunshine can increase the heat index by 15 degrees.

Heat Cramps - Muscular pains and spasms due to heavy exertion. Although heat cramps are the least severe, they are often the first signal that the body is having trouble with the heat.

Heat Exhaustion - Typically occurs when people exercise heavily or work in a hot, humid place where body fluids are lost through heavy sweating. Blood flow to the skin increases, causing blood flow to decrease to the vital organs. This results in a form of mild shock. If not treated, the victim's condition will worsen. Body temperature will keep rising and the victim may suffer heat stroke.

Heat Stroke - A life-threatening condition. The victim's temperature control system, which produces sweating to cool the body, stops working. The body temperature can rise so high that brain damage and death may result if the body is not cooled quickly.

Sun Stroke - Another term for heat stroke.

Excessive Heat Watch - Conditions are favorable for an excessive heat event to meet or exceed local Excessive Heat Warning criteria in the next 24 to 72 hours.

Excessive Heat Warning - Heat Index values are forecast to meet or exceed locally defined warning criteria for at least 2 days (daytime highs=105-110° Fahrenheit).

Heat Advisory - Heat Index values are forecast to meet locally defined advisory criteria for 1 to 2 days (daytime highs=100-105° Fahrenheit)

Thunderstorms & Lightning



All thunderstorms are dangerous. Every thunderstorm produces lightning. While lightning fatalities have decreased over the past 30 years, lightning continues to be one of the top three storm-related killers in the United States. In 2010 there were 29 fatalities and 182 injuries from lightning. Although most lightning victims survive, people struck by lightning often report a variety of long-term, debilitating symptoms.

Other associated dangers of thunderstorms include tornadoes, strong winds, hail and flash flooding. Flash flooding is responsible for more fatalities – more than 140 annually – than any other thunderstorm-associated hazard. Dry thunderstorms that do not produce rain that reaches the ground are most prevalent in the western United States. Falling raindrops evaporate, but lightning can still reach the ground and can start wildfires.

Before Thunderstorm and Lightning

To prepare for a thunderstorm, you should do the following:

- To begin preparing, you should [build an emergency kit](#) and [make a family communications plan](#).
- Remove dead or rotting trees and branches that could fall and cause injury or damage during a severe thunderstorm.
- Postpone outdoor activities.
- Remember the 30/30 Lightning Safety Rule: Go indoors if, after seeing lightning, you cannot count to 30 before hearing thunder. Stay indoors for 30 minutes after hearing the last clap of thunder.
- Secure outdoor objects that could blow away or cause damage.
- Get inside a home, building, or hard top automobile (not a convertible). Although you may be injured if lightning strikes your car, you are much safer inside a vehicle than outside.
- Remember, rubber-soled shoes and rubber tires provide NO protection from lightning. However, the steel frame of a hard-topped vehicle provides increased protection if you are not touching metal.
- Shutter windows and secure outside doors. If shutters are not available, close window blinds, shades or curtains.
- Unplug any electronic equipment well before the storm arrives.



During Thunderstorms and Lightning

If thunderstorm and lightning are occurring in your area, you should:

- Use your battery-operated NOAA Weather Radio for updates from local officials.

SOURCE: Ready.gov www.ready.gov/thunderstorms-lightning

Last Updated: April 17, 2014

- Avoid contact with corded phones and devices including those plugged into electric for recharging. Cordless and wireless phones not connected to wall outlets are OK to use.
- Avoid contact with electrical equipment or cords. Unplug appliances and other electrical items such as computers and turn off air conditioners. Power surges from lightning can cause serious damage.
- Avoid contact with plumbing. Do not wash your hands, do not take a shower, do not wash dishes, and do not do laundry. Plumbing and bathroom fixtures can conduct electricity.
- Stay away from windows and doors, and stay off porches.
- Do not lie on concrete floors and do not lean against concrete walls.
- Avoid natural lightning rods such as a tall, isolated tree in an open area.
- Avoid hilltops, open fields, the beach or a boat on the water.
- Take shelter in a sturdy building. Avoid isolated sheds or other small structures in open areas.
- Avoid contact with anything metal—tractors, farm equipment, motorcycles, golf carts, golf clubs, and bicycles.
- If you are driving, try to safely exit the roadway and park. Stay in the vehicle and turn on the emergency flashers until the heavy rain ends. Avoid touching metal or other surfaces that conduct electricity in and outside the vehicle

After a Thunderstorm or Lightning Strike

If lightning strikes you or someone you know, call 9-1-1 for medical assistance as soon as possible. The following are things you should check when you attempt to give aid to a victim of lightning:

- **Breathing** - if breathing has stopped, begin mouth-to-mouth resuscitation.
- **Heartbeat** - if the heart has stopped, administer CPR.
- **Pulse** - if the victim has a pulse and is breathing, look for other possible injuries. Check for burns where the lightning entered and left the body. Also be alert for nervous system damage, broken bones and loss of hearing and eyesight.

After the storm passes remember to:

- Never drive through a flooded roadway. Turn around, don't drown!
- Stay away from storm-damaged areas to keep from putting yourself at risk from the effects of severe thunderstorms.
- Continue to listen to a NOAA Weather Radio or to local radio and television stations for updated information or instructions, as access to roads or some parts of the community may be blocked.
- Help people who may require special assistance, such as infants, children and the elderly or those with access or functional needs.
- Stay away from downed power lines and report them immediately.
- Watch your animals closely. Keep them under your direct control.

Lightning Safety When Outdoors

IF YOU ARE:	THEN:
In a forest	Seek shelter in a low area under a thick growth of small trees.
In an open area	Go to a low place such as a ravine or valley. Be alert for flash floods.

SOURCE: Ready.gov www.ready.gov/thunderstorms-lightning
 Last Updated: April 17, 2014

On open water	Get to land and find shelter immediately.
Anywhere you feel your hair stand on end (which indicates that lightning is about to strike)	Squat low to the ground on the balls of your feet. Place your hands over your ears and your head between your knees. Make yourself the smallest target possible and minimize your contact with the ground. DO NOT lie flat on the ground.

Know the Terms

Familiarize yourself with these terms to help identify a thunderstorm hazard:

Severe Thunderstorm Watch - Tells you when and where severe thunderstorms are likely to occur. Watch the sky and stay tuned to NOAA Weather Radio, commercial radio or television for information.

Severe Thunderstorm Warning - Issued when severe weather has been reported by spotters or indicated by radar. Warnings indicate imminent danger to life and property to those in the path of the storm.

Tornadoes



Tornadoes are nature’s most violent storms. Spawned from powerful thunderstorms, tornadoes can cause fatalities and devastate a neighborhood in seconds. A tornado appears as a rotating, funnel-shaped cloud that extends from a thunderstorm to the ground with whirling winds that can reach 300 miles per hour. Damage paths can be in excess of one mile wide and 50 miles long. Every state is at some risk from this hazard. Some tornadoes are clearly visible, while rain or nearby low-hanging clouds obscure others. Occasionally, tornadoes develop so rapidly that little, if any, advance warning is possible. Before a tornado hits, the wind may die down and the air may become very still. A cloud of debris can mark the location of a tornado even if a funnel is not visible. Tornadoes generally occur near the trailing edge of a thunderstorm. It is not uncommon to see clear, sunlit skies behind a tornado.

Before a Tornado

- To begin preparing, you should [build an emergency kit](#) and make a [family communications plan](#).
- Listen to NOAA Weather Radio or to commercial radio or television newscasts for the latest information. In any emergency, always listen to the instructions given by local emergency management officials.
- Be alert to changing weather conditions. Look for approaching storms.
- Look for the following danger signs:
 - Dark, often greenish sky
 - Large hail
 - A large, dark, low-lying cloud (particularly if rotating)
 - Loud roar, similar to a freight train.
 - If you see approaching storms or any of the danger signs, be prepared to take shelter immediately.



During a Tornado

If you are under a tornado warning, seek shelter immediately! Most injuries associated with high winds are from flying debris, so remember to protect your head.

IF YOU ARE IN:	THEN:
A structure (e.g. residence, small building, school, nursing home, hospital, factory, shopping center, high-rise building)	<ul style="list-style-type: none"> • Go to a pre-designated area such as a safe room, basement, storm cellar, or the lowest building level. If there is no basement, go to the center of a small interior room on the lowest level (closet, interior hallway) away from corners, windows, doors, and outside walls. Put as many walls as possible between you and the outside. Get under a sturdy table and use your arms to protect your head and neck. • In a high-rise building, go to a small interior room or hallway on the lowest floor

SOURCE: Ready.gov www.ready.gov/tornadoes; NOAA www.nws.noaa.gov/om/severeweather/
 Last Updated: April 17, 2014

	<p>possible.</p> <ul style="list-style-type: none"> • Put on sturdy shoes. • Do not open windows.
A manufactured home or office	<ul style="list-style-type: none"> • Get out immediately and go to a pre-identified location such as the lowest floor of a sturdy, nearby building or a storm shelter. Mobile homes, even if tied down, offer little protection from tornadoes.
The outside with no shelter	<ul style="list-style-type: none"> • Immediately get into a vehicle, buckle your seat belt and try to drive to the closest sturdy shelter. • If your vehicle is hit by flying debris while you are driving, pull over and park. • Stay in the car with the seat belt on. Put your head down below the windows; cover your head with your hands and a blanket, coat or other cushion if possible. • If you can safely get noticeably lower than the level of the roadway, leave your car and lie in that area, covering your head with your hands • Do not get under an overpass or bridge. You are safer in a low, flat location. • Never try to outrun a tornado in urban or congested areas in a car or truck. Instead, leave the vehicle immediately for safe shelter. • Watch out for flying debris. Flying debris from tornadoes causes most fatalities and injuries.

Tornado Safety in Schools

Every School Should Have a Plan

- Develop a severe weather safety plan that ensures everyone will take cover within 60 seconds. Conduct frequent tornado drills. Include provisions for all after-hours, school-related activities.
- Every school should be inspected and tornado shelter areas designated by a registered engineer or architect. Rooms with exterior walls should never be used as tornado shelters.
- Basements offer the best protection. Schools without basements should use interior rooms and hallways on the lowest floor, away from windows.
- Delay lunches or assemblies in large rooms if severe weather is anticipated. Rooms with large roof spans (e.g., gymnasiums, cafeterias, and auditoriums) offer little or no protection from tornado-strength winds.
- Ensure students and staffs know the protective position (shown below).
- Everyone should sit facing an interior wall, elbows to knees and with hands over the back of their heads.
- Each school should have a NOAA Weather Radio with battery backup. Remember, the NWS issues a Tornado Watch when conditions are favorable for tornado development and a Tornado Warning when a tornado has been spotted or indicated by radar.
- If the school's alarm system relies on electricity, have an alternative method to notify teachers and students in case of power failure.
- Make special provisions for faculty and students with disabilities, those in portable classrooms, and those outdoors. They should be notified first of approaching severe weather.
- Keep children at school beyond regular hours during a Tornado Warning. School bus drivers should identify protective areas along each part of their route where they and their passengers can take cover if overtaken by a tornado or high winds.
- Include properly designed tornado shelters when planning additions or new school buildings.



After a Tornado

SOURCE: Ready.gov www.ready.gov/tornadoes; NOAA www.nws.noaa.gov/om/severeweather/
 Last Updated: April 17, 2014

Injury may result from the direct impact of a tornado or it may occur afterward when people walk among debris and enter damaged buildings. A study of injuries after a tornado in Marion, Illinois, showed that 50 percent of the tornado-related injuries were suffered during rescue attempts, cleanup and other post-tornado activities. Nearly a third of the injuries resulted from stepping on nails. Because tornadoes often damage power lines, gas lines or electrical systems, there is a risk of fire, electrocution or an explosion. Protecting yourself and your family requires promptly treating any injuries suffered during the storm and using extreme care to avoid further hazards.

INJURIES

Check for injuries. Do not attempt to move seriously injured people unless they are in immediate danger of further injury. Get medical assistance immediately. If someone has stopped breathing, begin CPR if you are trained to do so. Stop a bleeding injury by applying direct pressure to the wound. Have any puncture wound evaluated by a physician. If you are trapped, try to attract attention to your location.

GENERAL SAFETY PRECAUTIONS

Here are some safety precautions that could help you avoid injury after a tornado:

- Continue to monitor your battery-powered radio or television for emergency information.
- Be careful when entering any structure that has been damaged.
- Wear sturdy shoes or boots, long sleeves and gloves when handling or walking on or near debris.
- Be aware of hazards from exposed nails and broken glass.
- Do not touch downed power lines or objects in contact with downed lines. Report electrical hazards to the police and the utility company.
- Use battery-powered lanterns, if possible, rather than candles to light homes without electrical power. If you use candles, make sure they are in safe holders away from curtains, paper, wood or other flammable items. Never leave a candle burning when you are out of the room.
- Never use generators, pressure washers, grills, camp stoves or other gasoline, propane, natural gas or charcoal-burning devices inside your home, basement, garage or camper - or even outside near an open window, door or vent. Carbon monoxide (CO) - an odorless, colorless gas that can cause sudden illness and death if you breathe it - from these sources can build up in your home, garage or camper and poison the people and animals inside. Seek prompt medical attention if you suspect CO poisoning and are feeling dizzy, light-headed or nauseated.
- Hang up displaced telephone receivers that may have been knocked off by the tornado, but stay off the telephone, except to report an emergency.
- Cooperate fully with public safety officials.
- Respond to requests for volunteer assistance by police, fire fighters, emergency management and relief organizations, but do not go into damaged areas unless assistance has been requested. Your presence could hamper relief efforts and you could endanger yourself.

INSPECTING THE DAMAGE

- After a tornado, be aware of possible structural, electrical or gas-leak hazards in your home. Contact your local city or county building inspectors for information on structural safety codes and standards. They may also offer suggestions on finding a qualified contractor to do work for you.
- In general, if you suspect any damage to your home, shut off electrical power, natural gas and propane tanks to avoid fire, electrocution or explosions.

SOURCE: Ready.gov www.ready.gov/tornadoes; NOAA www.nws.noaa.gov/om/severeweather/
Last Updated: April 17, 2014

- If it is dark when you are inspecting your home, use a flashlight rather than a candle or torch to avoid the risk of fire or explosion in a damaged home.
- If you see frayed wiring or sparks, or if there is an odor of something burning, you should immediately shut off the electrical system at the main circuit breaker if you have not done so already.
- If you smell gas or suspect a leak, turn off the main gas valve, open all windows and leave the house immediately. Notify the gas company, the police or fire departments, or State Fire Marshal's office and do not turn on the lights, light matches, smoke or do anything that could cause a spark. Do not return to your house until you are told it is safe to do so.

SAFETY DURING CLEAN UP

- Wear sturdy shoes or boots, long sleeves and gloves.
- Learn proper safety procedures and operating instructions before operating any gas-powered or electric-powered saws or tools.
- Clean up spilled medicines, drugs, flammable liquids and other potentially hazardous materials.

Know the Terms

Familiarize yourself with these terms to help identify a tornado hazard:

Tornado Watch - Tornadoes are possible. Remain alert for approaching storms. Watch the sky and stay tuned to NOAA Weather Radio, commercial radio or television for information.

Tornado Warning - A tornado has been sighted or indicated by weather radar. Take shelter immediately.

Winter Storms & Extreme Cold



While the danger from winter weather varies across the country, nearly all Americans, regardless of where they live, are likely to face some type of severe winter weather at some point in their lives. Winter storms can range from a moderate snow over a few hours to a blizzard with blinding, wind-driven snow that lasts for several days. Many winter storms are accompanied by dangerously low temperatures and sometimes by strong winds, icing, sleet and freezing rain.

One of the primary concerns is the winter weather's ability to knock out heat, power and communications services to your home or office, sometimes for days at a time. Heavy snowfall and extreme cold can immobilize an entire region.

The National Weather Service refers to winter storms as the “Deceptive Killers” because most deaths are indirectly related to the storm. Instead, people die in traffic accidents on icy roads and of hypothermia from prolonged exposure to cold. It is important to be prepared for winter weather before it strikes.

Before Winter Storms and Extreme Cold

To prepare for a winter storm you should do the following:

- Before winter approaches, add the following supplies to your [emergency kit](#):
 - Rock salt or more environmentally safe products to melt ice on walkways. Visit the [Environmental Protection Agency](#) for a complete list of recommended products.
 - Sand to improve traction.
 - Snow shovels and other snow removal equipment.
 - Sufficient heating fuel. You may become isolated in your home and regular fuel sources may be cut off. Store a good supply of dry, seasoned wood for your fireplace or wood-burning stove.
 - Adequate clothing and blankets to keep you warm.
- Make a [Family Communications Plan](#). Your family may not be together when disaster strikes, so it is important to know how you will contact one another, how you will get back together and what you will do in case of an emergency.
- Listen to a NOAA Weather Radio or other local news channels for critical information from the National Weather Service (NWS). Be alert to changing weather conditions.
- Minimize travel. If travel is necessary, keep a disaster supplies kit in your vehicle.
- Bring pets/companion animals inside during winter weather. Move other animals or livestock to sheltered areas with non-frozen drinking water.



SOURCE: Ready.gov www.ready.gov/winter-weather; State of Illinois Emergency Management Agency, *Winter Weather Preparedness* <http://iema.illinois.gov/iema/disaster/disaster.htm>

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During Winter Storms and Extreme Cold

- Stay indoors during the storm.
- Walk carefully on snowy, icy, walkways.
- Avoid overexertion when shoveling snow. Overexertion can bring on a heart attack—a major cause of death in the winter. If you must shovel snow, stretch before going outside.
- Keep dry. Change wet clothing frequently to prevent a loss of body heat. Wet clothing loses all of its insulating value and transmits heat rapidly.
- Watch for signs of frostbite. These include loss of feeling and white or pale appearance in extremities such as fingers, toes, ear lobes, and the tip of the nose. If symptoms are detected, get medical help immediately.
- Watch for signs of hypothermia. These include uncontrollable shivering, memory loss, disorientation, incoherence, slurred speech, drowsiness, and apparent exhaustion. If symptoms of hypothermia are detected, get the victim to a warm location, remove wet clothing, warm the center of the body first and give warm, non-alcoholic beverages if the victim is conscious. Get medical help as soon as possible.
- Drive only if it is absolutely necessary. If you must drive: travel in the day; don't travel alone; keep others informed of your schedule; stay on main roads and avoid back road shortcuts.
- Let someone know your destination, your route, and when you expect to arrive. If your car gets stuck along the way, help can be sent along your predetermined route.
- If the pipes freeze, remove any insulation or layers of newspapers and wrap pipes in rags. Completely open all faucets and pour hot water over the pipes, starting where they were most exposed to the cold (or where the cold was most likely to penetrate).
- Maintain ventilation when using kerosene heaters to avoid build-up of toxic fumes. Refuel kerosene heaters outside and keep them at least three feet from flammable objects.
- Conserve fuel, if necessary, by keeping your residence cooler than normal. Temporarily close off heat to some rooms.
- If you will be going away during cold weather, leave the heat on in your home, set to a temperature no lower than 55°F.

Safety for Schools



Children can be especially susceptible to the dangers associated with winter weather. Even if they are cold, wet or exhausted they often are not conscious of the potential impact these conditions could pose. School administrators, principals and teachers need to be aware of the dangers posed by winter weather. Emergency plans and procedures must be established or reviewed before the onset of the winter season to ensure children's safety.

WINTER SAFETY PROCEDURES: Winter safety procedures for schools should include:

- A means of receiving current weather information. The National Weather Service (NWS) provides this information via NOAA Weather Radio. Commercial radio and television also air winter weather conditions.
- Guidelines for children's outdoor activities.
- Plans for closures, early dismissal or holding children and staff at school due to snow, ice or extreme cold.
- Provisions for children who arrive earlier than usual or stay later than usual due to driving conditions parents may encounter.

SOURCE: Ready.gov www.ready.gov/winter-weather; State of Illinois Emergency Management Agency, *Winter Weather Preparedness* <http://iema.illinois.gov/iema/disaster/disaster.htm>

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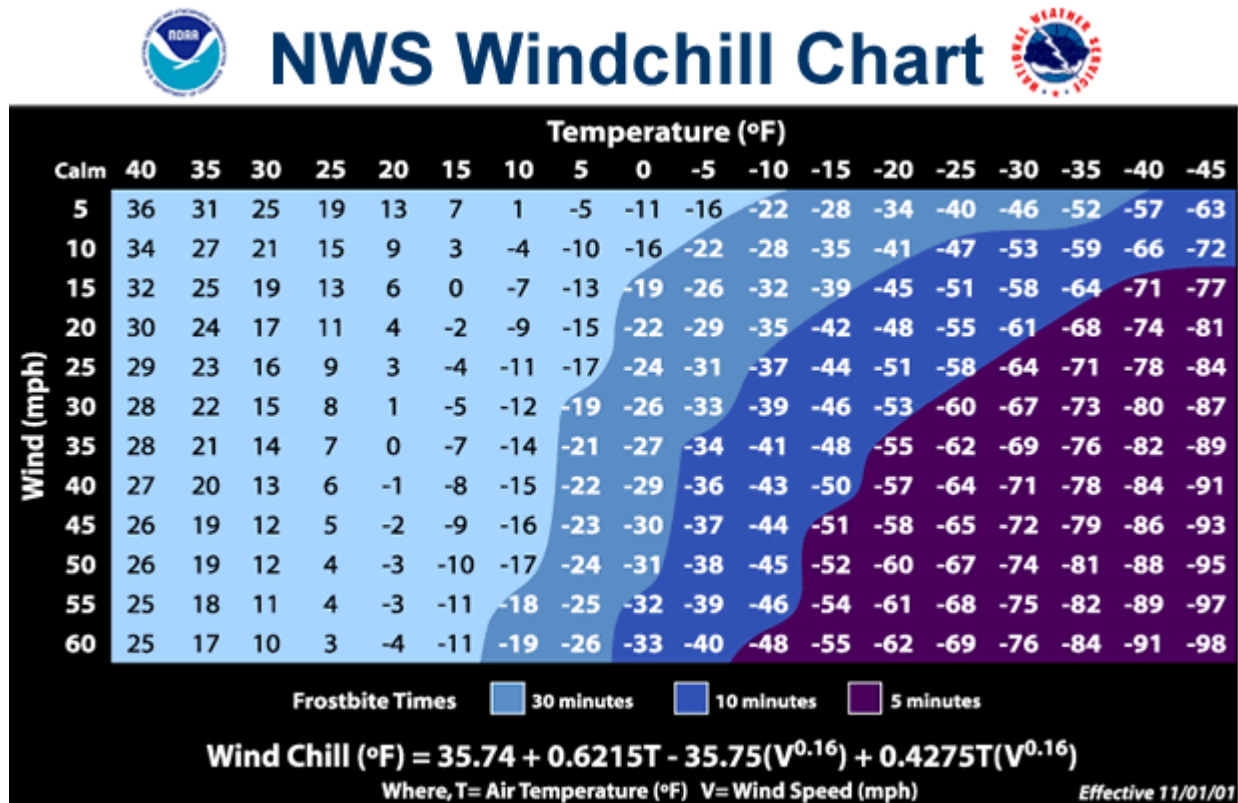
TRANSPORTATION-RELATED CONSIDERATIONS:

- Bus driver training for winter conditions.
- Changes in routes (alternate) during winter conditions.
- Procedures for altered school schedules.
- Procedures to deal with stranded buses.

Wind Chill

Most of the time, cold is judged in terms of a thermometer reading. With people and other living things though, both temperature and wind speed are needed to produce a “wind chill factor.” The wind chill is based on the rate of heat loss from exposed skin caused by the combined effects of the wind speed and cold temperatures. As the wind increases, heat is carried away from the body at an accelerated rate, driving down the body temperature. The wind chill shows how cold the wind makes exposed flesh feel and is a good way to determine the potential for frostbite or hypothermia.

Remember, wind chill impacts people and other living things. If the temperature is 35 degrees and the wind chill is 10 degrees, objects such as pipes or cars will only cool to 35. The wind chill factor does not apply to non-living objects.



SOURCE: Ready.gov www.ready.gov/winter-weather; State of Illinois Emergency Management Agency, Winter Weather Preparedness <http://iema.illinois.gov/iema/disaster/disaster.htm>
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Know the Terms

Familiarize yourself with these terms to help identify a winter storm hazard:

Freezing Rain - Rain that freezes when it hits the ground, creating a coating of ice on roads, walkways, trees and power lines.

Sleet - Rain that turns to ice pellets before reaching the ground. Sleet also causes moisture on roads to freeze and become slippery.

Winter Weather Advisory - Winter weather conditions are expected to cause significant inconveniences and may be hazardous. When caution is used, these situations should not be life threatening.

Winter Storm Watch - A winter storm is possible in your area. Tune in to NOAA Weather Radio, commercial radio, or television for more information.

Winter Storm Warning - A winter storm is occurring or will soon occur in your area.

Blizzard Warning - Sustained winds or frequent gusts to 35 miles per hour or greater and considerable amounts of falling or blowing snow (reducing visibility to less than a quarter mile) are expected to prevail for a period of three hours or longer.

Frost/Freeze Warning - Below freezing temperatures are expected.

Legal Authorities for Isolation and Quarantine



Isolation and quarantine

Isolation and quarantine are public health practices used to stop or limit the spread of disease.

Isolation is used to separate **ill** persons who have a communicable disease from those who are healthy. Isolation restricts the movement of ill persons to help stop the spread of certain diseases. For example, hospitals use isolation for patients with infectious tuberculosis.

Quarantine is used to separate and restrict the movement of **well** persons who may have been exposed to a communicable disease to see if they become ill. These people may have been exposed to a disease and do not know it, or they may have the disease but do not show symptoms. Quarantine can also help limit the spread of communicable disease.

Isolation and quarantine are used to protect the public by preventing exposure to infected persons or to persons who may be infected.

In addition to serving as medical functions, isolation and quarantine also are “police power” functions, derived from the right of the state to take action affecting individuals for the benefit of society.

Federal law

The federal government derives its authority for isolation and quarantine from the Commerce Clause of the U.S. Constitution.

Under section 361 of the Public Health Service Act (42 U.S. Code § 264), the U.S. Secretary of Health and Human Services is authorized to take measures to prevent the entry and spread of communicable diseases from foreign countries into the United States and between states.

The authority for carrying out these functions on a daily basis has been delegated to the Centers for Disease Control and Prevention (CDC).

Quarantinable Diseases by Presidential Executive Order



Federal isolation and quarantine are authorized for these communicable diseases:

- Cholera
- Diphtheria
- Infectious tuberculosis
- Plague
- Smallpox
- Yellow fever
- Viral hemorrhagic fevers
- SARS
- New types of flu (influenza) that could cause a pandemic

The President can revise this list by Executive Order.

CDC's role

Under 42 Code of Federal Regulations parts 70 and 71, CDC is authorized to detain, medically examine, and release persons arriving into the United States and traveling between states who are suspected of carrying these communicable diseases.

As part of its federal authority, CDC routinely monitors persons arriving at U.S. land border crossings and passengers and crew arriving at U.S. ports of entry for signs or symptoms of communicable diseases.

When alerted about an ill passenger or crew member by the pilot of a plane or captain of a ship, CDC may detain passengers and crew as necessary to investigate whether the cause of the illness on board is a communicable disease.

Who is in charge

The federal government

- Acts to prevent the entry of communicable diseases into the United States. Quarantine and isolation may be used at U.S. ports of entry.
- Is authorized to take measures to prevent the spread of communicable diseases between states.
- May accept state and local assistance in enforcing federal quarantine.
- May assist state and local authorities in preventing the spread of communicable diseases.

State, local, and tribal authorities

- Enforce isolation and quarantine within their borders.

It is possible for federal, state, local, and tribal health authorities to have and use all at the same time separate but coexisting legal quarantine power in certain events. In the event of a conflict, federal law is supreme.

State, local, and tribal law

States have police power functions to protect the health, safety, and welfare of persons within their borders. To control the spread of disease within their borders, states have laws to enforce the use of isolation and quarantine.

These laws can vary from state to state and can be specific or broad. In some states, local health authorities implement state law. In most states, breaking a quarantine order is a criminal misdemeanor.

Tribes also have police power authority to take actions that promote the health, safety, and welfare of their own tribal members. Tribal health authorities may enforce their own isolation and quarantine laws within tribal lands, if such laws exist.

Enforcement

If a quarantinable disease is suspected or identified, CDC may issue a federal isolation or quarantine order.

Public health authorities at the federal, state, local, and tribal levels may sometimes seek help from police or other law enforcement officers to enforce a public health order.

U.S. Customs and Border Protection and U.S. Coast Guard officers are authorized to help enforce federal quarantine orders.

Breaking a federal quarantine order is punishable by fines and imprisonment.

Federal law allows the conditional release of persons from quarantine if they comply with medical monitoring and surveillance.

Federal quarantine rarely used

Large-scale isolation and quarantine was last enforced during the influenza ("Spanish Flu") pandemic in 1918–1919.

In recent history, only a few public health events have prompted federal isolation or quarantine orders.

For more information

For more information, visit www.cdc.gov/quarantine.



Chemical Agents

Chemical agents are found in nature or have been manufactured by man. They come in the form of a liquid, gas, or solid; and enter the body through inhalation, ingestion, and/or contact with the skin or eyes. There are many categories of these agents, specific to their chemical characteristics and/or how they affect the human body including: blister, blood, choking, nerve, biotoxins, caustics, incapacitating, long-acting anticoagulants, metals, organic solvents, riot control, toxic alcohols, and vomiting agents. The charts below will discuss the four major categories and some of the more well-known agents.

To lessen the impact of exposure to a chemical agent, move away from the site of release; this may include evacuating the building or sheltering-in-place. Always follow the instructions given by emergency workers.

If you have been exposed, remove contaminated clothing (seal in a plastic bag), flush eyes with water, shower with soap and seek medical attention.

Blister Agents or vesicants cause damage by reacting with enzymes, proteins, and DNA which ultimately cause cell death. Effects can include: irritation to the skin and eyes, skin lesions, skin discoloration, runny nose, sneezing, hoarseness, shortness of breath, cough, bloody nose, diarrhea, nausea, low blood pressure, burning or swelling of the eyes that can result in blindness, cough, and bronchitis.

Agent	Appearance	Odor	Treatment
Sulfur Mustard	Colorless or yellow-brown tint, oily	Odorless to slight garlic/onions/mustard	None
Lewisite	Colorless or amber-black, oily	Geraniums or ammonia	Antidote

Blood Agents are absorbed through the blood. They cause damage by preventing the transfer of oxygen from the blood to the tissues in the body. Effects can include: burning of the eyes and throat, cough, chest tightness, rapid breathing, weakness, fatigue, headache, confusion, dizziness, nausea, convulsions, and loss of consciousness.

Agent	Appearance	Odor	Treatment
Arsine	Colorless	Mild garlic	None
Cyanide	Colorless	Slight almond	Antidote

Choking Agents cause damage to the lining of the respiratory tract, which can make it difficult to breathe. Effects can include: burning sensation in the nose, throat and eyes, coughing, tightness in the chest, watery eyes, blurred vision, nausea, skin lesions, fatigue, low blood pressure and heart failure.

Agent	Appearance	Odor	Treatment
Chlorine	Yellowish-green tint	Bleach	None
Phosgene	Colorless, white or pale yellow	Freshly mown hay	None

Nerve Agents cause damage by preventing the nervous system from working properly. These agents are of the greatest risk because only a small amount is needed to produce significant symptoms or death. Effects can include: runny nose, watery eyes, pin-point pupils, excessive sweating, drooling, increased urination, headache, weakness, dizziness, abdominal pain, abnormal heart rate and abnormal blood pressure.

Agent	Appearance	Odor	Treatment
Sarin	Colorless	Odorless	Antidote
Soman	Colorless	Fruity or oil of camphor	Antidote
Tabun	Colorless	Fruity	Antidote

Radiological Emergencies

Radiological emergencies occur when harmful radioactive particles are accidentally or intentionally released. A person is harmed by ionizing radiation when they come into contact with, inhale and/or ingest these particles. To lessen the impact of exposure, evacuate or shelter-in-place, depending on the emergency. Follow all instructions given by emergency personnel. The most important steps towards minimizing exposure are: 1) limit the time spent near the source; 2) increase the distance from the source; 3) separate from the source by increasing barriers (a barrier's effectiveness depends on the type of radiation). Extensive detail on radiological emergencies is not provided in this section due to the complexity of the topic. Use the chart below as a quick reference guide for four types of potential radiological emergencies.

Time + Distance + Shielding = Protection

A large exposure to radiation can cause acute radiation syndrome or radiation sickness. Symptoms include: nausea, vomiting, diarrhea, fever, loss of appetite, skin damage, seizures, and coma. A smaller exposure may have no immediate effects, but in the long term can cause cancer. Any exposure has the chance of causing a severe psychological impact.

Radiation Emergency	Type of Event	How Radiation is Dispersed	Nuclear Blast	Amount of Radiation	Exposure Consequences
Nuclear Power Plant Incident	Radiological	Possible leak or escape of radioactive material from power plant	No	Limited; radioactive materials could escape and contaminate the area and environment	Limited death toll-power plants are built to withstand attacks or failures without releasing radioactive material
Radiological Dispersal Device (RDD)	Radiological	Conventional explosives or aerosols containing radioactive material (dirty bomb)	No	Limited; could directly impact the area around several city blocks	Limited death toll-could kill or injure people in the immediate area of the dirty bomb
Radiation-Emitting Device (RED)	Radiological	Hiding radioactive material in a populated area	No	Limited; depends on the source and how soon it is detected	Dependent on size, source and time of exposure
Improvised Nuclear Device (IND)	Nuclear	Smaller nuclear weapon (suitcase bomb)	Yes	Varying; may or may not include fallout	Depends on the size of the blast, whether there was fallout, and population size of the area
Nuclear Weapon	Nuclear	Large scale nuclear weapon developed for strategic military purposes	Yes	Large; radioactive particles from the fallout could be carried long distances	Catastrophic damage to people, buildings, and the environment

For more information visit: www.emergency.cdc.gov/radiation, www.epa.gov/radiation, and www.nrc.gov

Last Updated: April 18, 2014

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Understanding Radiological Emergencies

Ionizing Radiation: A very high energy form of radiation that cannot be detected without specialized equipment. The type of radiation discussed in this section is ionizing radiation.

Radioactivity: Decay/disintegration of the nucleus of an atom that releases energy in the form of alpha or beta particles and/or gamma rays.

Alpha Particles: A type of radiation that cannot penetrate through the outer layer of skin, and can be stopped by a thin layer of material (such as paper); but when inhaled or ingested, they are especially damaging due to their high amount of ionizing energy (very high energy).

Beta Particles: A type of radiation that can penetrate the outer layer of skin causing burns, but can be stopped by a thin layer of aluminum. These particles can be lethal depending on the exposure, and pose a serious threat if inhaled or ingested.

Gamma Rays: A type of radiation that is very penetrating, and requires a thick concrete or lead barrier to reduce exposure. They are a serious direct or external radiation threat and pose a severe threat if inhaled or ingested.

Radioactive Contamination: Deposition of radioactive material on structures, objects or people.

Radioactive Exposure: Occurs when radiation penetrates the body and deposits the energy, different from radioactive contamination.

Nuclear Event: Involves nuclear fission (the splitting of atoms) which results in a highly destructive explosion that leaves behind large amounts of radioactivity (i.e. the bomb dropped on Hiroshima, Japan during World War II).

Radiological Event: A release of radioactive material that may be accompanied by an explosion, does not involve nuclear fission.

Fallout: Radioactive materials are forced up in the air from the heat of the explosion where they can travel and eventually "fall out".

Nuclear Blast: An explosion with intense light and heat, a damaging pressure wave, and widespread radioactive material that can contaminate



Biological Agents

Biological agents are naturally occurring bacteria, viruses, toxins and other disease-causing microorganisms. They can cause disease in their naturally occurring state or be modified to have increased virulence and/or drug resistance. The CDC has designated 24 biological agents as “critical” because of their potential for harm if used in an act of bioterrorism. This list was then divided into three categories — A, B and C— based on how easily the biological agent spreads and the severity of illness caused.

Use the following charts as a quick reference on each category and its associated agents.

Category A agents are the highest risk and the highest priority. They can be easily distributed and/or have the ability to spread from person to person. These agents would result in high mortality (death) and high morbidity (illness) rates and have a serious impact on public health resulting in panic and social disruption. Category A agents are also known to have been studied by some countries for use in biological warfare.

Agent	Type	Symptoms	Mode of Transmission	Contagious	Incubation Period	Death Rate	Treatment/ Vaccine
Anthrax (Inhalational)	Bacteria	Early: Fever/chills, cough, shortness of breath, sore throat Late: Severe respiratory distress, difficulty swallowing, enlarged lymph nodes, abdominal pain, vomiting, diarrhea	Airborne	No	Usually 1- 7 days, up to 2 months	Untreated: 90% Treated: 75%	Antibiotics Vaccine is available for designated populations (e.g lab workers and military personnel)
Anthrax (Cutaneous)	Bacteria	Non-painful- small sores that develop into blisters, then into skin ulcers with a black scab in center	Contact	Yes	1-7 days (usually 1 day)	Untreated: 20% Treated: 1%	
Anthrax (Gastrointestinal)	Bacteria	Early: Nausea, anorexia, vomiting, fever Late: Severe abdominal pain, bloody diarrhea and vomit	Foodborne Waterborne	No	1-7 days (usually 1 day)	Untreated: >25%	
Botulinum (Botulism)	Toxin	Early: Blurred/double vision, slurred speech, drooping eyelids,	Airborne, Waterborne, Foodborne	No	6 hours -10 days (usually 18-36 hours)	Untreated: High Treated: 10%	Anti-toxin

For more information visit: www.emergency.cdc.gov/bioterrorism

		difficulty swallowing, dry mouth, muscle weakness, respiratory weakness Late: Respiratory failure, paralysis					
Plague (Pneumonic)	Bacteria	Early: Fever, chills, headache, coughing up blood Late: Respiratory failure, pneumonia	Airborne, Contact	Yes	1-7 days	Untreated: 100% Treated: 50%	Antibiotics
Plague (Bubonic)	Bacteria	Early: Weakness, fever, chills, muscular pain, swelling of lymph glands, seizures Late: If left untreated, can lead to pneumonic plague	Vector, Contact	No	2-6 days	Untreated: 50%	
Tularemia	Bacteria	Early: Fever, chills, headache, cough, joint pain, chest pain, respiratory failure, swollen lymph nodes Late: Inflamed eyes, oral or skin ulcers, severe pneumonia	Foodborne, Waterborne, Airborne Vector, Contact	No	1-21 days (average 3-5 days)	Untreated: 60% Treated: <2%	Antibiotics
Smallpox an emergency	Virus	Early: Fever, chills, headache, malaise, backache, round lesions appear on face, extremities and mouth Late: Lesions become blisters and crust over, severe abdominal pain, delirium	Contact	Yes (Typically after lesions appear)	7-17 days (usually 10-14 days)	Treated: 30%	Treatment of symptoms Vaccine will become available during
Viral Hemorrhagic Fevers (Ebola, Marburg, Lassa)	Virus	Early: Fever, headache, sore throat, vomiting, diarrhea, heavy bleeding from multiple sites Late: Jaundice, severe weight loss, delirium, shock, liver failure, massive hemorrhaging, multiorgan dysfunction	Vector, Contact	Yes	2- 21 days (dependent on agent)	Treated: <90% (dependent on agent)	Treatment of symptoms

Category B agents are the second in highest risk and priority. They are fairly easily distributed but have only moderate morbidity rates and low mortality rates. Scientists have experience with these agents as naturally occurring infectious diseases, but little is known on how they could be weaponized. Category B agents include: Brucellosis, food safety threats (e.g. E. coli, Salmonella, Shigella), Glanders, Melioidosis, Psittacosis, Q Fever, Ricin, Staphylococcal enterotoxin B, Typhus Fever, Viral Encephalitis, and water safety threats (e.g. Cholera, Giardiasis, Cryptosporidiosis). The more common

Category B agents are shown in the chart below.

Agent	Type	Symptoms	Mode of Transmission	Contagious	Incubation Period	Death Rate	Treatment/Vaccine
Brucellosis	Bacteria	Fever, chills, headache, malaise, joint and muscle pain	Airborne	No	2-10 weeks, up to 6 months	Untreated: <5%	Antibiotics
Q Fever	Bacteria	Early: Fever, chills, cough, sore throat, headache, muscle pain Late: Diarrhea, vomiting, chest pain	Airborne, Waterborne, Foodborne, Vector, Contact	Rare	7-21 days	Untreated: <2%	Antibiotics
Ricin (Inhalational)	Toxin	Early: Difficulty breathing, fever, cough, nausea, tightening of the chest Late: Heavy sweating, fluid in lungs, skin turns blue, low blood pressure, respiratory failure	Airborne	No	4-24 hours	50-80% Dependent on method of exposure and amount of toxin	Treatment of Ricin symptoms
Ricin symptoms (Gastrointestinal)	Toxin	Early: Vomiting, bloody diarrhea, low blood pressure, severe dehydration Late: Blood in urine, hallucinations, seizures, liver, spleen, and kidney dysfunction	Foodborne, Waterborne	No	4-10 hours	<1% Dependent on method of exposure and amount of toxin	
Ricin (Injection)	Toxin	Early: Kills muscles and lymph nodes near site of injection Late: Failure of the major organs	Injected	No	Death can occur within 4 days (little data available)	Dependent on method of exposure and amount of toxin	

Category C agents are the third highest in priority and risk. Because of their availability and ease of production/propagation, these emerging pathogens could be engineered for mass distribution. Category C agents could have the potential for high morbidity and high mortality rates. Category C has a long list of agents. Some examples would be: Nipah virus, Hantavirus, Yellow Fever, and drug resistant Tuberculosis.

For more information visit: www.emergency.cdc.gov/bioterrorism

Understanding Biological Agents

Bacteria: Single celled microorganisms that are capable of multiplying. Antibiotics are the normal treatment.

Viruses: A more simple microorganism than bacteria; they are parasitic in nature, in that they use the body's own cells to multiply. Antivirals can be used to treat some viruses (antibiotics are not effective).

Toxins: Poisonous substances that are produced by microorganisms (e.g. mold, bacteria, viruses). Antitoxins are medications that attempt to neutralize a toxin, but do not kill the microorganism that is producing the toxin.

Contagious disease: A disease that is able to spread from person to person.

Incubation period: The time elapsed between exposure to the microorganism and when symptoms begin to appear.

Virulence: The measure of the severity of the disease that is caused by the microorganism.

Mode of transmission: Describes how the biological agent infects a person.

Contact: When the disease is passed from person to person through touching, kissing or through respiratory droplets. This can include contact with the microorganism through a break in the skin. Transmission can also occur indirectly when an inanimate object is contaminated (bed sheets, utensils) and then an uncontaminated person becomes infected by touching these objects.

Airborne: When the microorganism can be breathed in through air particles (not the same as respiratory droplets).

Foodborne/Waterborne: Infection occurs when a person ingests the microorganism through food or water.

Vector: When an insect or other living carrier transmits a disease.

Non-Pharmaceutical Interventions

Non-pharmaceutical interventions (NPIs) are actions, apart from getting vaccinated and taking medicine that people and communities can take to help slow the spread of illnesses like influenza (flu). NPIs are also known as community mitigation strategies.

Outbreaks of seasonal flu occur every year, usually during the late fall through early spring in the United States. A flu pandemic occurs when a new flu virus emerges among people, causing illness worldwide. No flu pandemic exists now, but it is important to learn how to slow the spread of flu if a pandemic does occur. Many of these actions also can help during a regular flu season. Getting vaccinated is the best way to prevent the flu, and a vaccine is available each year for seasonal flu. However, since a pandemic flu virus is new, a vaccine may not be available right away. When NPIs are used together and early in a pandemic, they can be effective in slowing the spread of flu.

Germs like flu viruses can spread easily in places where many people are in close contact with one another, so NPIs are especially important in community settings like schools, workplaces, and mass gatherings. During a flu pandemic, NPIs can help prevent disease and death, lower the impact of disease on the economy, and keeps society functioning. Most NPI research has focused on how NPIs can help slow the spread of pandemic flu. However, NPIs also may be effective in slowing the spread of other infectious diseases.

For information about CDC's NPI research, guidance, and communication activities, see [Nonpharmaceutical Interventions and CDC's Community Interventions for Infection Control Unit](#).

Child Care and K-12 Schools



Child care facilities and K-12 schools play an important part in protecting the health of their students, staff, and community. Since children are close together in child care facilities and schools, flu can spread very easily in those settings. [Children](#) are more likely than adults to get sick from the flu and spread it to others, including their families.

Getting vaccinated is the best way to prevent the flu. A vaccine is available each year for seasonal flu. A flu pandemic is an outbreak caused by a new flu virus that spreads worldwide. Since it is a new virus, it may take several months for manufacturers to develop a vaccine. [Nonpharmaceutical interventions \(NPIs\)](#), including temporarily closing schools, can be effective in slowing the spread of flu.

Below are 10 steps administrators can take to help slow the spread of pandemic flu in child care facilities and schools through NPIs.

1. Follow your local flu situation through close communication with the Kane County Health Department.
2. Encourage students, parents, and staff to get a seasonal flu vaccine and a pandemic flu vaccine as soon as they are available.
3. Through education and the provision of supplies, encourage students, parents, and staff to take [everyday preventive actions](#), including covering coughs and sneezes, washing hands often, staying home when sick, and cleaning surfaces and objects routinely.

SOURCE: Centers for Disease Control and Prevention, Non-Pharmaceutical Intervention, <http://www.cdc.gov/nonpharmaceutical-interventions/index.html>

Last Updated: August 28, 2012

4. Separate sick students from well students, and send sick students home as soon as possible.
5. Implement more flexible sick-leave policies that encourage students and staff to stay home when sick or when caring for sick family members.
6. Discourage the use of perfect attendance awards.
7. Temporarily close child care facilities and schools to increase space between people (social distancing) when a pandemic is severe in terms of how quickly flu is spreading and how sick people are getting.
8. Consider alternatives for providing continued learning and meals to students.
9. Discourage students, parents, and staff from gathering in other places when schools are closed.
10. If children and teenagers must be in groups, keep them in small groups, such as less than 6 people. Make sure groups consist of the same children each day.

Personal Non-Pharmaceutical Interventions

Everyday preventive actions you should always take to help keep yourself and others from getting sick include:

- Covering coughs and sneezes
- Washing hands often
- Staying home when sick

Community Non-Pharmaceutical Interventions

Actions communities might take to increase space between people (social distancing) during a pandemic include:

- Closing schools temporarily
- Making sick leave policies more flexible
- Offering telework or remote-meeting options
- Postponing or canceling mass gatherings

SOURCE: Centers for Disease Control and Prevention, Non-Pharmaceutical Intervention, <http://www.cdc.gov/nonpharmaceutical-interventions/index.html>

Last Updated: August 28, 2012



Measuring Vital Signs

Vital signs give important information about basic body functions – blood pressure, heart rate, breathing rate and temperature. Information about vital signs may be very helpful when communicating with a physician about an ill individual. When measuring vital signs, be sure to write down the results.

Heart rate (pulse rate):

- Put your index and middle finger over the underside of the wrist, below the base of the thumb.
- Press firmly with flat fingers until you feel the pulse (do not use your thumb to measure the pulse).
- While watching a clock, count the beats for one full minute or for 30 seconds and multiply by 2. This is the heart rate.

Normal pulse or heart rate:

- Infants younger than 1 year – 100 to 160 beats per minute
- Children 1 to 10 years – 70 to 120 beats per minute
- Children older than 10 years to adults – 60 to 100 beats per minute
- Well-trained athletes – 40 to 60 beats per minute

Blood pressure:

- Use an automated blood pressure monitor, if you have one. If possible, take it to your doctor's office or pharmacy to have it checked for accuracy. Follow the manufacturer's instructions for storage and use.

Breathing rate:

- Have the person lie down.
- Count how many times the chest rises for one full minute. This is the breathing rate.

Normal resting breathing rate, by age:

- Newborns – 44 breaths per minute
- Infants – 20 to 40 breaths per minute
- Preschool children – 20 to 30 breaths per minute
- Older children – 16 to 25 breaths per minute
- Adults – 14 to 18 breaths per minute
- Older adults – 19 to 26 breaths per minute

Temperature:

- Can be taken from different parts of the body: mouth, rectum, ear or arm pit.
- Follow directions for your thermometer.
- Clean after each use.
- Use different thermometers for each person, if possible.
- See [Thermometers and Fever Healthbeat](#) for additional information on taking a temperature.

Normal body temperatures:

Normal body temperatures vary from person to person. Body temperature is usually lowest in the morning and highest later in the day.

Average body temperature from each body site:

- Oral (by mouth): 98.6 F (37 C)
- Rectal (in the rectum): 99.6 F (37.5 C)
- Ear: 99.6 F (37.5 C)
- Axillary (in the arm pit, usually the least accurate): 97.6 F (36 C)

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 Phone 217-782-4977
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[Questions or Comments](#)



Thermometers and Fever

[Printable PDF](#)

Fevers

Your child may be sick, but not have a fever.

Although temperature is important, your child's appearance and behavior are also important signs of the severity of an illness. Any sudden change in your child's eating or sleeping habits is important, along with any irritability. If you are worried about your child being sick, please call your doctor.

Choosing a thermometer

Digital thermometers

- Can be used in the mouth, rectum, or armpit
- Can be used for people of any age
- Are quick, easy to use and read

Ear thermometers (infrared thermometers)

- Small ear probe inserted gently into the ear canal
- Can be used for people 6 months of age or older

Fever strips / pacifier thermometers / forehead thermometers

- Not as accurate as other types of thermometers

Glass thermometers containing mercury

- Do not use because mercury is toxic and can be released if the thermometer breaks.
- Do not throw it in the trash. Call your local government for disposal instructions.

Tips for taking temperature

- Always stay with your child when a thermometer is in place.
- Keep separate, marked thermometers for rectal, oral and armpit readings. Never use a thermometer to take an oral temperature after it has been used to take a rectal temperature – even if it has been cleaned.
- Read all directions before using the thermometer, and always follow the manufacturer’s instructions exactly.
- It may be helpful to practice on healthy family members to be sure you’re using the thermometer correctly.
- Choose thermometers that are easy for you to use.
- Use a new disposable cover for each use; do not reuse disposable covers. If you don’t have a cover, clean the thermometer after each use as advised by the manufacturer.
- Do not take an oral temperature if the person has a stuffy nose. Use the rectum or armpit.
- Do not smoke or eat/drink anything hot or cold for 10 minutes before taking an oral temperature.
- When you call the doctor, report the actual reading on the thermometer, and say where the temperature was taken. Be sure to read decimal places correctly—104° is not the same as 100.4°.

How to take a temperature

Oral temperature

Recommended for anyone older than 4 years of age who can cooperate and understand directions.

- Make sure the child’s mouth is clear of gum, candy and food. Use a disposable cover. Place the thermometer under the tongue, to one side of the center, and close the lips tightly around it.
- Follow thermometer instructions for how long to leave it in the mouth
- Remove and read thermometer
- Throw disposable cover in the trash; clean thermometer. Clean your hands.

Rectal temperature

Recommended for children younger than 4 years of age, anyone who cannot hold a thermometer safely in their mouths or anyone who has a stuffy nose. Do not leave the child alone when taking a rectal temperature. Rectal perforation can occur if the thermometer is not used properly. Check with your doctor’s office before checking a rectal temperature as some doctors prefer that parents use other methods.

- Use a disposable cover. Apply a lubricant or petroleum jelly (e.g. Vaseline®)

- on the end of the thermometer so it can be inserted easily into the rectum.
- Turn babies or small children face down on your lap or on a flat, covered surface, such as a bed.
 - Spread the buttocks with one hand and gently insert the thermometer end about 1 inch into the rectum with your other hand.
 - Do not force the thermometer into the rectum. Hold it in place with two fingers close to the rectum (not near the end of the thermometer) at all times.
 - Press the buttocks together to help keep the thermometer in place.
 - Follow thermometer instructions for how long to leave it in the rectum.
 - Remove and read the thermometer.
 - Throw disposable cover in the trash; clean thermometer. Clean your hands.

Ear temperature

Requires a special thermometer, that should **only** be used for checking ear temperatures

- Not reliable before 6 months of age
- On a cold day, your child should be indoors for at least 15 minutes before taking an ear temperature.
- If probe is not clean, wipe gently with a dry cloth. Do not put in water.
- Use a disposable cover. Place probe in ear canal and turn thermometer on.

Infants 6 months to 1 year of age:

- *Gently pull the earlobe down and back.*
- *Center the probe tip in the ear and push gently inward toward the eardrum.*

Children older than 1 year of age and adults:

- *Gently pull the earlobe up and back.*
- *Center the probe tip in the ear and push gently toward the eardrum.*
- Press button. Follow thermometer instructions for how long to leave it in the ear.
- Remove and read the thermometer.
- Throw disposable cover in the trash. Wipe the probe with a dry cloth and put away.
- Clean your hands.

Armpit (axillary) temperature

- Make sure the armpit is dry.
- Place the tip of the thermometer in the center of the armpit and make sure skin surfaces are touching the thermometer.
- Press the arm against the body.

- Follow thermometer instructions for how long to leave it in the armpit.
- Remove and read the thermometer.
- Throw away the disposable cover, if used, or clean and dry the thermometer right away.

Normal body temperatures vary from person to person.
Average body temperature is:

- Oral: 98.6F (37C)
- Rectal: 99.6F (37.5C)
- Ear: 99.6F (37.5C)
- Axillary: 97.6F (36C)

Body temperature is usually lowest in the morning
and highest later in the day.

idph online home



health fact sheets



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Sample General Letter-English

Dear Parent/Guardian:

We have been notified that someone in the school/facility has been diagnosed with the communicable disease listed on the attached fact sheet. The fact sheet explains the signs, symptoms and other concerns regarding this disease.

Many communicable diseases do not represent a significant risk to others, however for a few, medical evaluation is essential. It is necessary for you to watch your child for the signs and symptoms listed on the fact sheet. If indicated, please seek prompt medical attention. It may be necessary to keep him/her home until the symptoms resolve or until your child receives treatment.

By notifying you promptly of this possible exposure, we are providing the best care for your child. In any setting, it is common for some children to become ill. At times this is not preventable. When we notify you of an illness, we are trying to control the spread and prevent new cases of illness. We try to keep our children healthy and happy.

If you have any questions about this situation please contact us immediately. For further information about this illness, you may also call the Kane County Health Department's Communicable Disease Program at 630-208-3801.

Sincerely,

School Official

Date

Sample General Letter-Spanish

Estimados Padres,

Nos han informado que alguien en su escuela/facilidad ha sido diagnosticado con alguna enfermedad transmisible anotado en la lista de información incluida. La lista de información explica las señales, síntomas y otra información sobre la enfermedad.

Muchas enfermedades transmisibles no representan riesgos significantes como quiera para algunos, una evaluación médica es esencial. Es necesario que usted este revisando su niño(a) para las señales y síntomas que están anotadas en la lista. Si tiene los síntomas indicados en la lista por favor busque atención médica o tratamiento enseguida.

Con el hecho de avisarle puntualmente de la exposición posible estamos proveyendo el mejor cuidado para su niño(a). Es común que algunos niños se enfermen sin importar el ambiente. Hay veces que no se puede evitar. Cuando le informamos de alguna enfermedad, estamos tratando de controlar la transmisión y prevenir nuevos casos de la enfermedad. Tratamos de mantener nuestros niños saludables y contentos.

Si tiene alguna pregunta sobre esta situación por favor comuníquese con nosotros inmediatamente. Para mas información sobre esta enfermedad también puede llamar le al Departamento de Salud del Condado de Kane al programa de enfermedades transmisibles al 630-208-3801.

Sinceramente,

Oficial de la Escuela

Fecha

Sample Pertussis Letter-English

Dear Parent/Guardian,

Kane County Health Department has notified us that a student in our facility has been diagnosed with pertussis (whooping cough). The student will not return to school until he/she is no longer contagious. Pertussis is a highly infectious and usually mild illness that is easily transmitted through coughing and sneezing and may last for several months.

Please refer to the attached Pertussis Fact Sheet for more information. Although most people recover completely from pertussis, complications from the disease can be severe in high risk groups, especially infants under one year, and children who have not been fully immunized against the disease.

All close contacts to a person with a case of pertussis are recommended to receive antibiotic treatment even if they have been vaccinated against it.

- **If you are notified that your child has been a close contact of a case**, please contact your child's physician to advise them regarding your child's exposure to pertussis and to arrange for antibiotic treatment.
- **If you are not notified that your child has been identified as a close contact of a case**, simply be alert for symptoms of pertussis and contact your health provider if the symptoms appear.

Testing for pertussis is not indicated for individuals who are not symptomatic.

Frequent hand washing and respiratory hygiene (e.g. covering your cough, coughing into tissues, disposing of tissues promptly) are important practices that help to limit the spread of infection.

If you have any questions please feel free to contact us immediately or call the Kane County Health Department at 630-208-3801.

Thank You,

School Official

Date

Sample Pertussis Letter-Spanish

El Departamento de Salud del condado de Kane nos informo que algún alumno en su escuela/facilidad ha sido diagnosticado con pertussis (tosferin). El alumno no regresara a la escuela hasta que el/ella ya no sea contagioso. Pertussis es una enfermedad muy contagiosa y usualmente una enfermedad leve que es transmitida fácilmente por medio de la tos y estornudos y puede durar varios meses.

Por favor lea la lista de información para más información. Aunque la mayoría de las personas se recuperan completamente de pertussis las complicaciones de esta enfermedad pueden ser severas en grupos de alto riesgo, especialmente infantes menores de un año de edad y niños que no han sido completamente vacunados contra la enfermedad.

Todas las personas que han tenido contacto cercano con una persona con la enfermedad se les recomienda que reciban un tratamiento de antibióticos aunque hayan sido vacunados contra la enfermedad.

- **Si le informaron que su hijo(a) ha tenido contacto cercano de algún caso**
Por favor comuníquese con el doctor de su hijo(a) para informarle sobre la exposición de su hijo(a) a la enfermedad y para acordar un tratamiento antibiótico
- **Si no le avisaron que su hijo(a) ha tenido contacto cercano de alguien con la enfermedad,** simplemente este atento a los síntomas del pertussis y comuníquese con su medico si aparecen los síntomas.

La prueba de pertussis no es indicada para los individuos que no muestran síntomas

Lavarse las manos y higiene respiratorio (ejemplo cubrirse la tos, toser en pañuelos de papel, y disponer de los pañuelos rápidamente) son importantes practicas que ayudan a limitar la transmisión de la infección. Si tiene alguna pregunta por favor comuníquese con nosotros inmediatamente o llame al Departamento de Salud al 630-208-3801.

Gracias,

Oficial de la Escuela

Fecha

Sample Pertussis Letter for Close Contacts - English

Dear Parent/Guardian,

Your child has been identified as a close contact of a child in our school/facility who has been diagnosed with pertussis (whooping cough). Kane County Health Department recommends that you contact your child's physician to advise them regarding your child's exposure to pertussis and to arrange for antibiotic treatment.

Pertussis is a highly infectious and usually mild illness that is easily transmitted through coughing and sneezing and may last for several months. Please refer to the attached Pertussis Fact Sheet for more information. Although most people recover completely from pertussis, complications from the disease can be severe in high risk groups, especially infants under one year, and children who have not been fully immunized against the disease.

All close contacts to a person with a case of pertussis are recommended to receive antibiotic treatment even if they have been vaccinated against it. In addition, frequent hand washing and respiratory hygiene (e.g. covering your cough, coughing into tissues, disposing of tissues promptly) are important practices that help to limit the spread of infection.

If you have any questions please feel free to contact us immediately or call the Kane County Health Department at 630-208-3801.

Thank You,

School Official

Date

Sample Pertussis Letter for Close Contacts - Spanish

Estimado Padre/Guardián,

Su hijo(a) ha sido identificado como un contacto cercano de algún niño(a) en nuestra escuela/facilidad que ha sido diagnosticado con pertussis (tos ferina). El Departamento de Salud del Condado de Kane recomienda que se comunique con el doctor de su hijo(a) para avisarle sobre la exposición de pertussis y para acordar un tratamiento antibiótico.

Pertussis es una enfermedad muy contagiosa y usualmente leve que es transmitida fácilmente por medio de la tos o estornudo y puede durar varios meses. Por favor lea la Lista de Información de Pertussis incluida para más información. Aunque la mayoría de la gente se recupera completamente de pertussis las complicaciones de esta enfermedad pueden ser severas en grupos de alto riesgo, especialmente infantes menores de un año y niños(a) que no han sido completamente vacunados contra la enfermedad.

A todas las personas que han tenido contacto cercano con una persona con la enfermedad se les recomienda que reciban un tratamiento de antibióticos aunque hayan sido vacunados contra la enfermedad. También se les recomienda lavar las manos frecuentemente y higiene respiratorio (ejemplo, cubrirse la tos, toser en pañuelos de papel, disponer de los pañuelos rápidamente) son importantes practicas que ayudan a limitar la transmisión de la infección. Si tiene alguna pregunta por favor comuníquese con nosotros inmediatamente o llame al Departamento de Salud al 630-208-3801.

Gracias,

Oficial de la Escuela

Fecha

Chickenpox Letter -English

Dear Parent/Guardian

This letter is to notify you that some children attending ___ center have contracted chickenpox. Chickenpox causes an acute illness with a rash that result in children missing days at school while they have a rash and parents missing work when they stay home to take care of their children. Most children now are vaccinated with at least one dose of chickenpox vaccine, but because one dose of the vaccine is 80-85% effective for preventing chickenpox, it is not unusual to see breakthrough disease. Two doses of chickenpox vaccine are now routinely recommended for children.

Background

Chickenpox is a very contagious infection caused by a virus. It is spread from person- to- person by direct contact or through the air from an infected person's coughing or sneezing. It causes a blister-like rash, itching, tiredness, and fever lasting an average of 4 to 6 days. Most children recover without any problems. Chickenpox can be spread for 1-2 days before the rash starts and until all blisters are crusted or no new lesions appear within a 24-hour period. It takes between 10-21 days after contact with an infected person for someone to develop chickenpox. Chickenpox in vaccinated persons is generally mild, with a shorter duration of illness and fewer than 50 lesions. The rash may be atypical with red bumps and few or no blisters.

Chicken Pox Vaccine Recommendations

- If your child is older than 12 months of age and has no documentation of receiving any chickenpox vaccine and does not have a documented history of having had chickenpox, your child may be eligible to receive a first dose of chickenpox.
- If your child has received one dose of the chickenpox vaccine and it has been longer than 3 months since that vaccine was administered, your child may be eligible to receive a second dose of chickenpox, which may provide added protection should exposures occur in the future.
- If your child is less than 12 months of age no action is indicated. Your child is not eligible for vaccine. Children less than 6 months may have some level of immunity to chickenpox which was passed from mother to child during pregnancy.
- If your child has received two doses of the chickenpox vaccine, no action is required at this time.

If your child or anyone in your household currently has symptoms that look like chickenpox:

- Contact your regular health care provider to discuss your child's symptoms and to see if anyone in the home needs to be vaccinated.

- Contact the daycare to report your child's symptoms such as fever, headache or other constitutional symptoms and atypical skin lesions.
- Anyone who report chickenpox, immediately should avoid contact with others who have not had chickenpox or who are not vaccinated against chickenpox. They should not attend school, day care, work, parties and/or other gatherings until the blisters become crusted (about 4-6 days after rash appears), or no new lesions appear within a 24-hours period. Keep all chickenpox spots and blisters and other wounds clean and watch for possible signs of infection; including increasing redness, swelling, drainage and pain at the wound site.
- If you or anyone else in your household has a weakened immune system or is pregnant and has never had chickenpox or the vaccine, talk with your doctor immediately.
- To make us aware of a case of chicken pox or if you have questions, please contact the school at the xxxx number.

Chickenpox Letter -Spanish

Esta carta es para notificarle a usted, sobre algunos niños que asisten al xxxx que han contraído varicela. La varicela es una enfermedad contagiosa, el cual resulta en una ampolla o un salpullido. Como resultado de esta enfermedad, los niños pierden días de escuela mientras tienen el salpullido, y que los padres pierdan días de trabajo mientras están en casa cuidando de sus niños. La mayoría de los niños, ahora mismo están vacunados, con por lo menos una dosis de la vacuna. Debido, a que esta vacuna es efectiva en un 80-85% para prevenir varicela, no es nada raro que aparezca la enfermedad. Actualmente se recomiendan dos dosis de la vacuna de varicela.

Historia

La varicela es una infección contagiosa causada por un virus. Esta enfermedad se pasa de una persona a persona, cuando se tiene contacto directo o a través del aire cuando una persona infectada tose o estornuda. Esta causa una ampolla (vejiga), salpullido, piquiña (comezón), cansancio, y fiebre (calentura) que dura un promedio de 4 a 6 días. La mayoría de los niños se recuperan sin problemas. La varicela se puede propagar desde el primer o segundo día antes de que aparezca el salpullido y hasta que las ampollas (vejigas) estén duras o con costra o no aparezcan mas lesiones por un periodo de 24 horas. Toma entre 10 a 21 días después del contacto con una persona infectada para que alguien desarrolle varicela. La Varicela en personas vacunadas es generalmente leve, con un periodo de duración corto y con menos de 50 lesiones. El salpullido puede ser no típico de varicela con unas cuantas bolitas o ninguna.

Recomendaciones para la vacuna de la varicela:

- Si su niño/niña es mayor de 12 meses de edad, y no tiene documentación de haber recibido la vacuna de varicela, y no tiene ningún historial documentado de haber tenido varicela, su niño/niña puede ser elegible para recibir la primera dosis de la vacuna de varicela.
- Si su niño/niña ha recibido una dosis de la vacuna para la varicela, y han pasado más de 3 meses desde que la vacuna se administro, su niño/niña puede ser elegible para recibir la segunda dosis de la vacuna de varicela, la cual puede proveerle y añadir protección a su niño/niña en caso de exposiciones futuras.
- Si su niño/niña es menor de 12 meses de edad ninguna acción es indicada. Su niño no es elegible para la vacuna. Niños menores de 6 meses pueden tener algún nivel de inmunidad a la varicela, la cual es pasada de la madre al niño durante el embarazo.
- Si su niño/niña ya recibió 2 dosis de la vacuna de varicela, ninguna acción es requerida en este momento.

Si su niño o alguien en su hogar tiene o presenta síntomas parecidos a los de varicela:

- Comuníquese con su proveedor de salud, para discutir los síntomas de sus niños/niñas, y para ver si alguien más en el hogar necesita ser vacunado.

- Comuníquese con la guardería de niños para reportar los síntomas de sus niños/niñas como la fiebre, dolor de cabeza u otros síntomas y salpullido.
- Cualquiera que reporte varicela, inmediatamente debe evitar el contacto con otros que no han tenido varicela, o con aquellos que no han sido vacunados contra la varicela. Las personas que tengan síntomas de varicela, no deben asistir a la escuela, la guardería, al trabajo, o asistir a fiestas y otras reuniones, hasta que las ampollas estén con costra (ocurre 4-6 días después que el salpullido aparece), o que no hayan aparecido nuevas lesiones en un periodo de 24 horas. Mantenga todas las lesiones de varicela o ampollas y otras heridas limpias. Observe por posibles síntomas de infección, incluyendo enrojecimiento, hinchazón, drenaje y dolor alrededor del área de la herida.
- Si usted o alguien en su hogar tiene un sistema inmune débil, o si está embarazada y nunca ha tenido varicela o la vacuna de varicela, hable con su doctor inmediatamente.

Para informarnos de algún caso de varicela o si usted tiene preguntas, por favor llame al xxxxxx.

Sample Norovirus Letter -English

Dear Parent/Guardian,

The purpose of this letter is to inform you of an increased number of children who attend _____ School reporting symptoms of gastrointestinal illness. The Kane County Health Department has been in contact with the School and has begun a collaborative investigation.

A common cause of gastrointestinal outbreaks is norovirus. Norovirus outbreaks increase in the colder months of the year. Norovirus infection can cause vomiting and diarrhea approximately 24-48 hours after exposure to the agent. Usually, over 40 percent of ill persons in a norovirus outbreak will experience vomiting.

Symptoms typically resolve within a few days without treatment. Although norovirus generally does not cause a severe illness, it can result in dehydration particularly in children and the elderly. Norovirus outbreaks result from person to person spread or from consumption of contaminated food, ice or drinks. The virus is easily transmitted person to person.

The following are recommended to prevent and limit transmission:

- Frequently wash your hands, especially after toileting and before eating or preparing food. Hands should be washed with warm water and soap for a minimum of 20 seconds. **Good Hygiene is the best way to prevent transmission of Norovirus.**
- Thoroughly clean and disinfect contaminated surface immediately after an episode of diarrhea or vomiting by using a bleach-based household cleaner. If using liquid household bleach prepared daily, one part bleach to nine parts water (1:10 dilution) is recommended.
- Immediately remove and wash clothing or linens that may be contaminated with feces or vomitus (use hot water and soap).
- Persons who are experiencing symptoms of gastrointestinal illness should stay home from school until **24** hours after symptoms have stopped.

Sample Norovirus Letter -Spanish

Estimado Padre/Persona encargada del cuidado del niño(a),

El propósito de ésta carta, es para informarle de un aumento en el número de niños que han reportado síntomas gastrointestinales en la Escuela Wesfield Community School. La Escuela ha contactado al Departamento de Salud del Condado de Kane, y se hemos iniciando una investigación en conjunto.

Una causa común de de las enfermedades gastrointestinales es el Norovirus. Los brotes de Norovirus, aumentan durante los meses más fríos del año. La infección de Norovirus puede causar vomito y diarrea, aproximadamente entre 24 a 48 horas después de estar expuesto al agente infeccioso. Usualmente, más del 40 % de las personas enfermas de Norovirus presentan vomito.

Típicamente, los síntomas se resuelven entre pocos días sin tratamiento. Aunque el norovirus generalmente no causa una enfermedad severa, esta puede resultar en deshidratación, particularmente en los niños y ancianos. Los brotes de Norovirus se transmiten de persona a persona, o por consumo de comida, bebidas o hielo contaminados. El virus es fácilmente transmitido de persona a persona.

Las siguientes, son algunas recomendaciones para prevenir y limitar la transmisión:

- Lave sus manos frecuentemente, especialmente después de usar el baño, antes de comer o preparar comida. Las manos deben ser lavadas con agua tibia y jabón por un mínimo de 20 segundos. **Una buena higiene es la mejor manera de prevenir la transmisión del Norovirus.**
- Limpie y desinfecte completamente las areas contaminadas con liquidos o detergentes que contengan cloro. Si va a preparar el liquido diariamente en su casa, se recomienda que ponga una parte de cloro por nueve partes de agua (1:10 dilución).
- Inmediatamente remueva y lave la ropa, sabanas o toallas que puedan estar contaminadas con materia fecal o vomito. Use agua caliente y jabón.
- Las personas que están sintiendo síntomas gastrointestinales, deben estar en la casa 24 horas después de que los síntomas hayan terminado.



Sample Flu Letter- English

Dear Parents,

Now that school has started, the flu season is just around the corner. You can help protect your family by following a few simple steps.

The best way to prevent the flu is to get a flu shot! And remember the three C's: Cover your cough, clean your hands, and contain the illness by staying home when you are sick. And you should stay at home for 24 hours once your fever is gone.

If when your child becomes ill with a fever of more than 100 degrees and has a cough and/or sore throat, he or she has what is called an "influenza-like illness," or ILI. When you call to report that your child will be staying home, it is important that you tell the school nurse this information. The nurse will be passing that information along to the Health Department. For the purposes of this report, personal information will not be sent to the Health Department. This, along with information gathered from hospital emergency rooms and local testing laboratories, provides a true picture of flu activity in your school and in the community.

You can find more flu information including a weekly flu report starting October 14 by visiting the Kane County Health Department's web site at www.kanehealth.com/flu.htm.



Sample Flu Letter- Spanish

Estimados Padres,

Ahora que el año escolar ha comenzado, la estación de gripe llegará pronto. Usted puede ayudar a proteger a su familia siguiendo estas precauciones.

La mejor manera de prevenir la gripe es la vacuna de gripe. Recuerde que debe cubrirse la boca cuando tose, lavarse las manos y quedarse en casa cuando esté enfermo. Además, debe quedarse en casa 24 horas después de que se le haya quitado la fiebre.

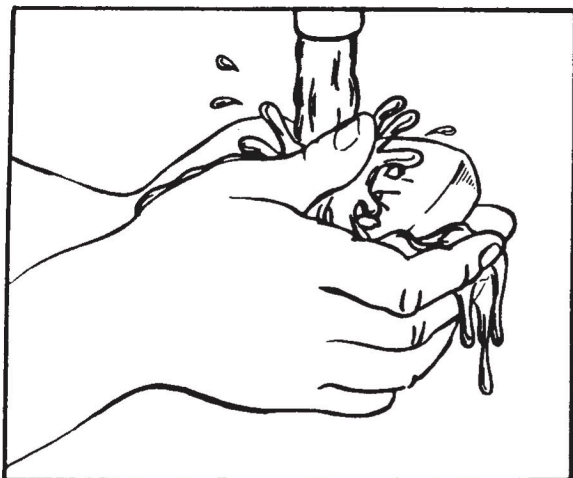
Si cuando su niño se enferme con fiebre más de 100 grados y tenga tos y/o le duela la garganta, él o ella se han enfermado con la gripe o como le dicen en el Departamento de Salud, 'Influenza-Like-Illness.' Cuando usted llame para reportar que su niño (a) va a tener que faltar a la escuela, es importante que usted le diga a la enfermera escolar el razón de la ausencia. Esta es una de las mejores maneras de conseguir información sobre la actividad de gripe en su escuela. La enfermera comunicará estos datos al Departamento de Salud del Condado de Kane. Este reporte no tendrá ninguna información personal. Este reporte y la información conseguida de las salas de emergencias de los hospitales y de los exámenes de laboratorios locales proveen una imagen de la actividad de gripe en su escuela y en la comunidad.

Usted puede encontrar más información sobre la gripe semanalmente al partir del 14 de Octubre visitando la red de información del Departamento de Salud;

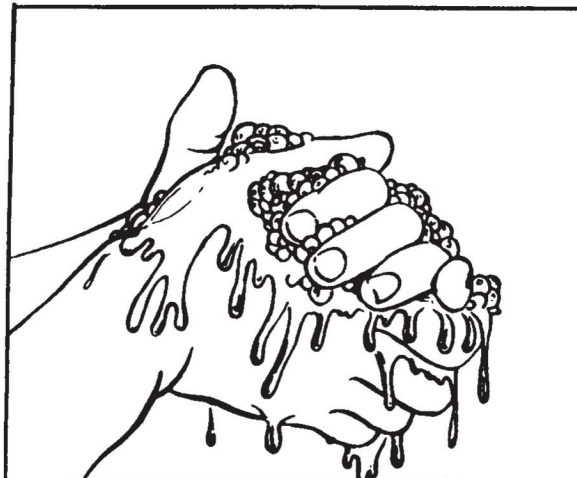
www.kanehealth.com/flu.htm.

WASH BEFORE YOU WORK!

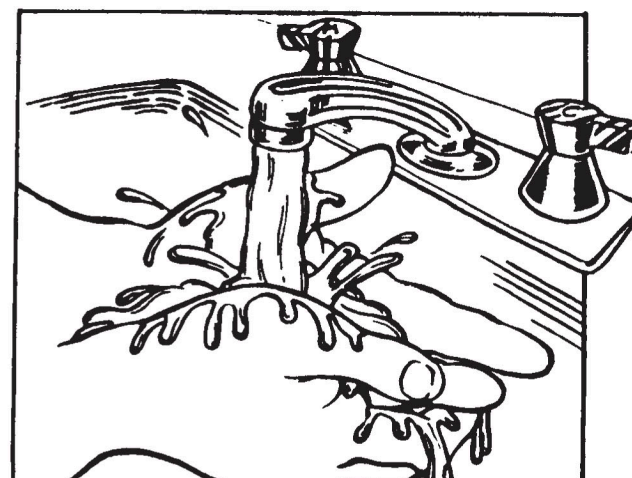
ILLINOIS DEPARTMENT OF PUBLIC HEALTH



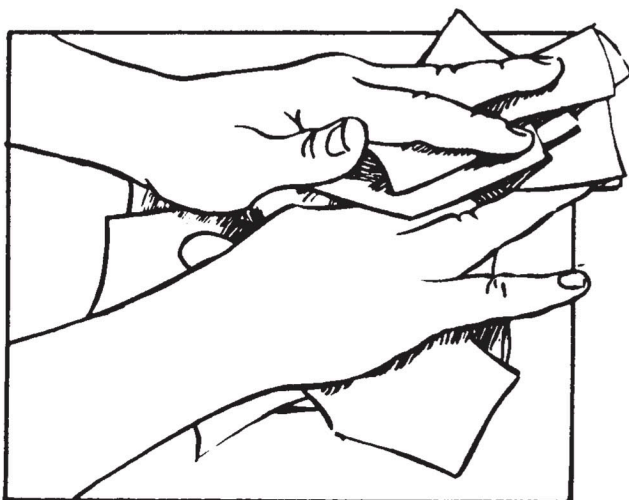
1. Wet hands with soap and warm water.



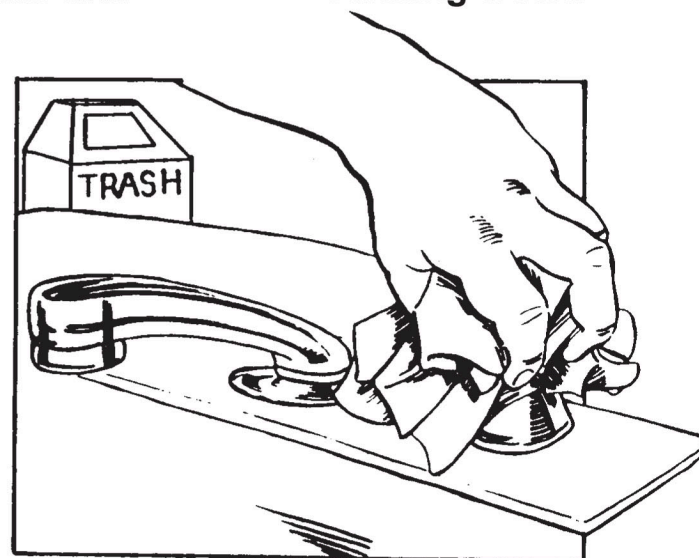
2. Rub hands for 20 seconds. Get under fingernails and between fingers.



3. Rinse under warm running water.



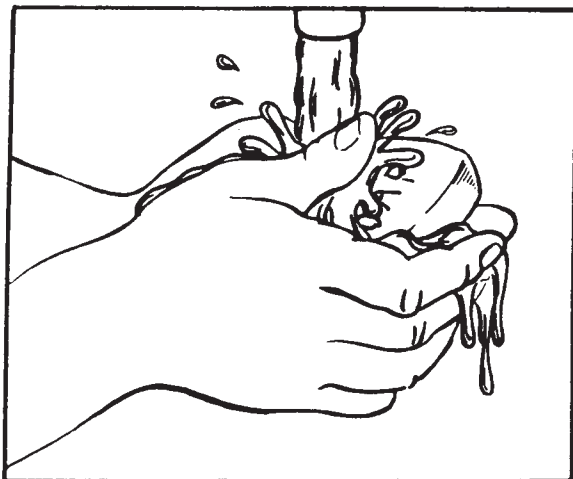
4. Dry hands on your own clean towel.



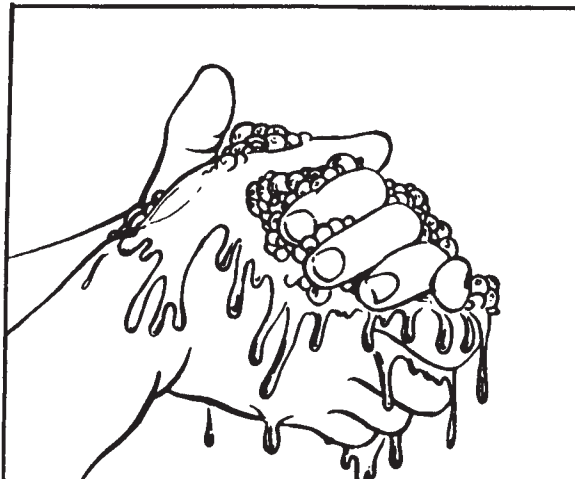
5. Turn off water with paper towel. Throw towel away.

PROPER HANDWASHING

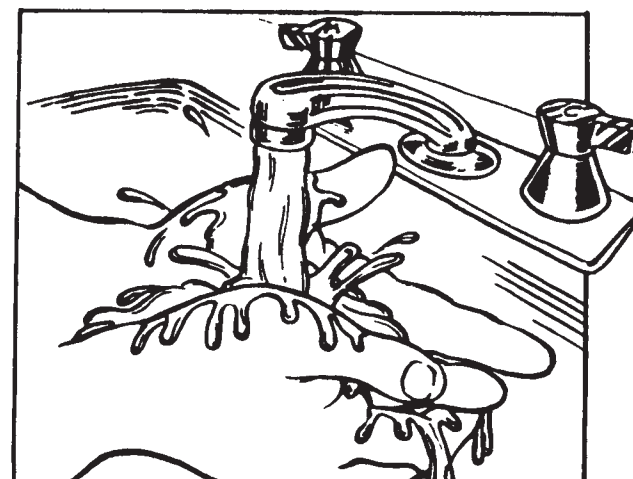
ILLINOIS DEPARTMENT OF PUBLIC HEALTH



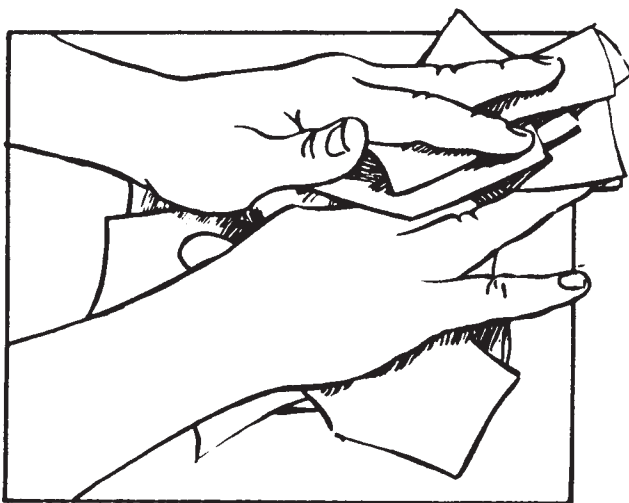
1. Wet hands with soap and warm water.



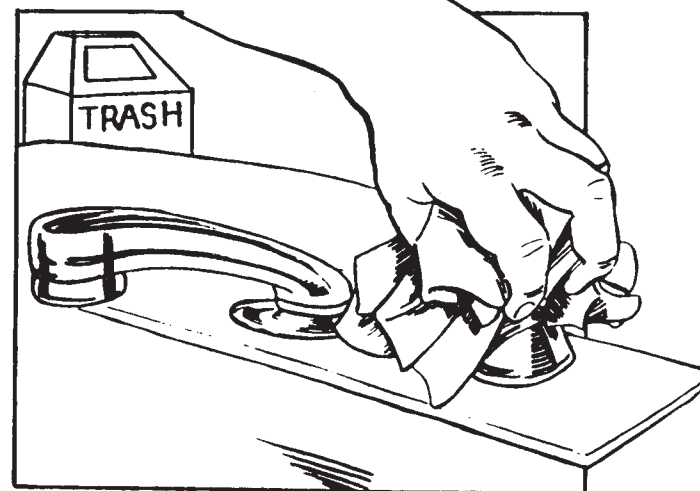
2. Rub hands for 20 seconds. Get under fingernails and between fingers.



3. Rinse under warm running water.



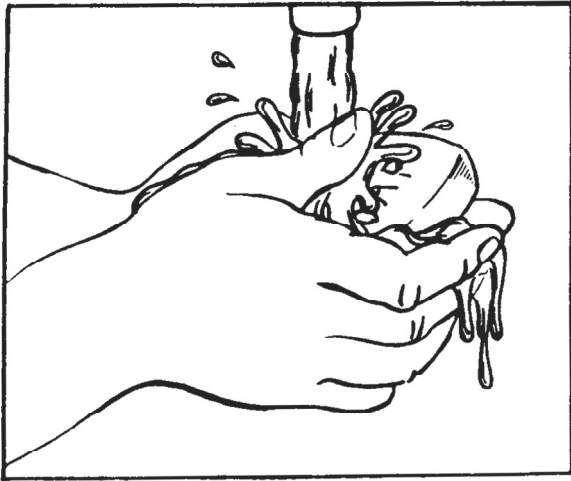
4. Dry hands on your own clean towel.



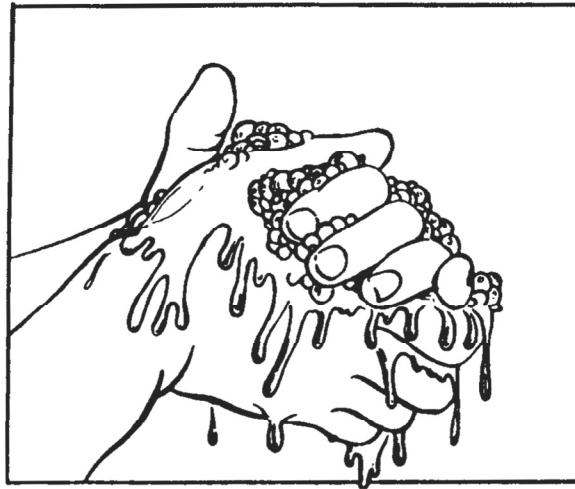
5. Turn off water with paper towel. Throw towel away.

¡LAVESE ANTES DE TRABAJAR!

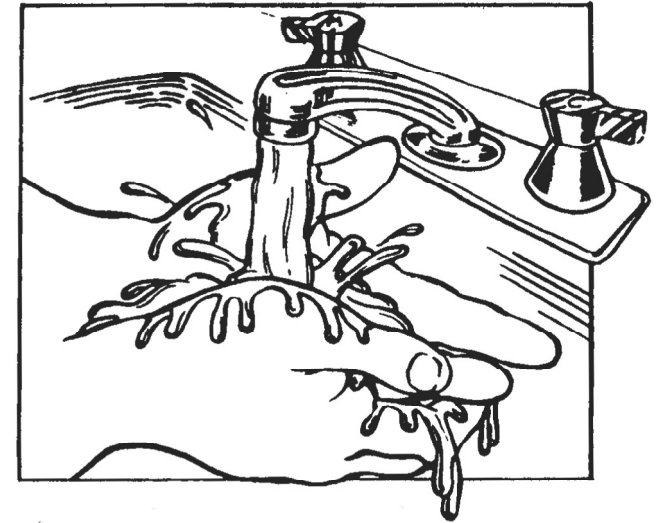
DEPARTAMENTO DE SALUD PÚBLICA DE ILLINOIS



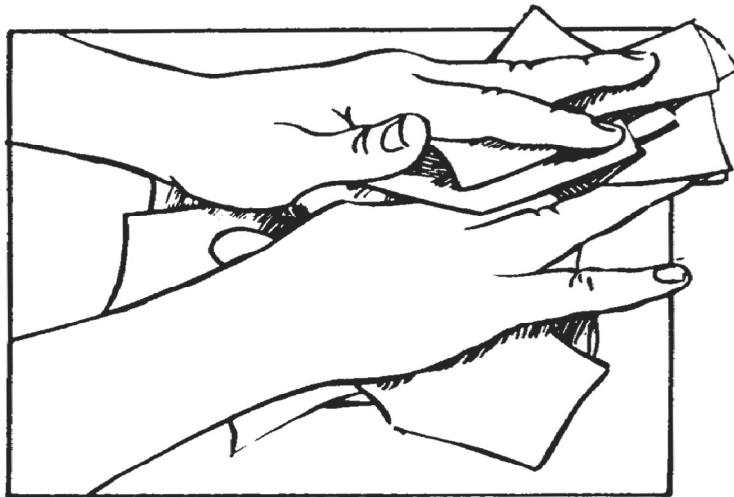
1. Mójese las manos con agua tibia y jabón.



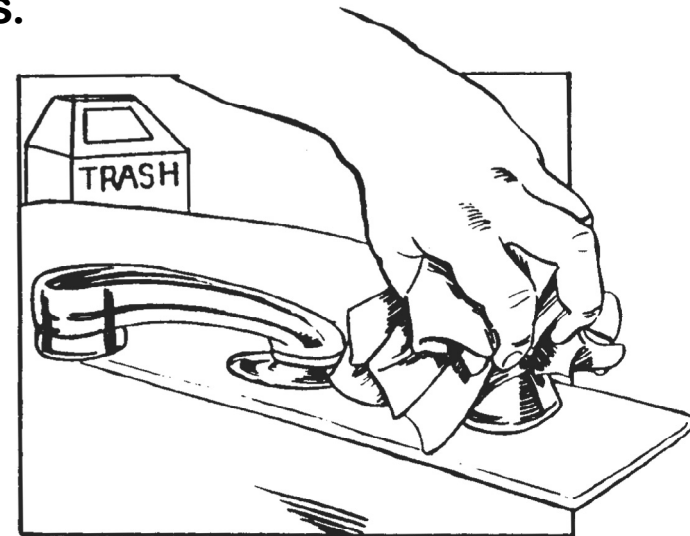
2. Frótese las manos de 20 segundos. Límpiense debajo de las uñas y entre los dedos.



3. Enjuáguese con agua tibia dejándola correr.



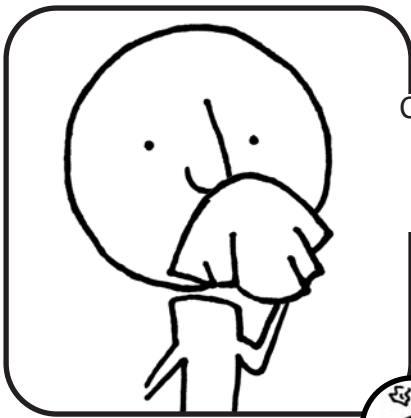
4. Séguese las manos con su propia toalla limpia.



5. Cierre el grifo del agua con una toalla de papel. Deseche la toalla.

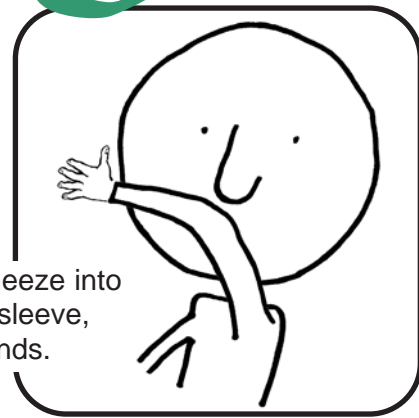
Stop the spread of germs that make you and others sick!

Cover your Cough



Cover your mouth and nose with a tissue when you cough or sneeze

or
cough or sneeze into your upper sleeve, not your hands.

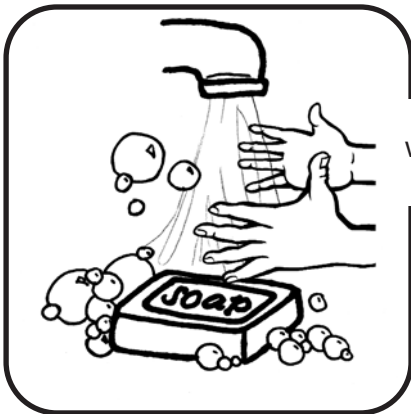


Put your used tissue in the waste basket.



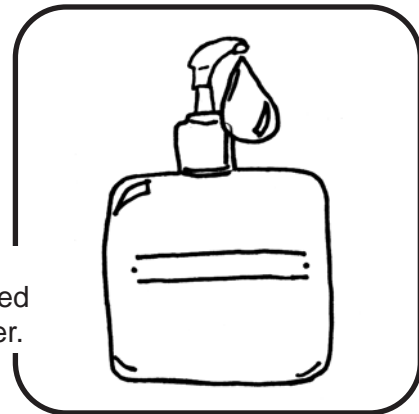
Clean your Hands

after coughing or sneezing.



Wash hands with soap and warm water

or
clean with alcohol-based hand cleaner.



Minnesota Department of Health
717 SE Delaware Street
Minneapolis, MN 55414
612-676-5414 or 1-877-676-5414
www.health.state.mn.us

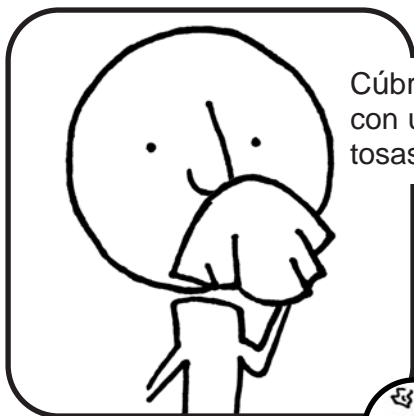


Minnesota
Antibiotic
Resistance
Collaborative



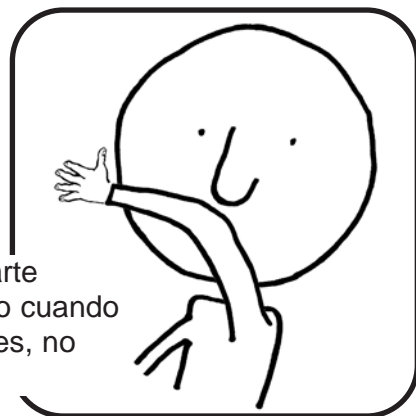
¡Detén el contagio de gérmenes que te enferman a ti y a otros!

Cúbrete al toser



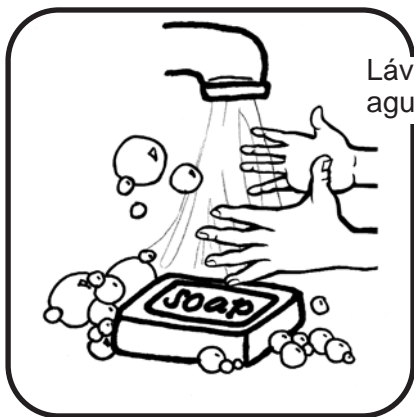
Cúbrete la boca y la nariz con un pañuelo cuando tosas o estornudes

Tira el pañuelo usado a la basura.

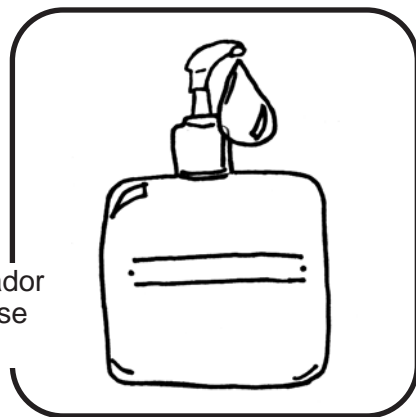


cúbrete con la parte superior del brazo cuando tosas o estornudes, no con las manos.

Lávate las manos después de toser o estornudar.



Lávate las manos con agua tibia y jabón



utiliza un limpiador de manos a base de alcohol.



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A Cold or the Flu?



How do you tell the difference?

Cold	Symptoms	Flu
Rare	Fever	Characteristic, high (100 degrees to 103 degrees F); lasts 3-4 days.
Rare	Headache	Prominent
Slight	General aches, Pains	Usual; often severe
Quite mild	Fatigue, Weakness	Can last up to 2-3 weeks
Never	Extreme Exhaustion	Early and prominent
Common	Stuffy Nose	Sometimes
Usual	Sneezing	Sometimes
Common	Sore Throat	Sometimes
Mild to Moderate; Hacking Cough	Chest Discomfort, Cough	Common; can become severe
Sinus congestion or earache	Complications	Bronchitis, pneumonia; can be life-threatening
None	Prevention	Annual vaccination; anti-viral drug
Only temporary relief of symptoms	Treatment	Anti-viral drug within 24-48 hours after onset of symptoms

7 simple steps to prevent infection

In addition to getting a flu shot, you can also protect yourself from the flu with these steps:

1. Clean your hands. Wash your hands often to help protect you from germs. Use soap and warm water for 15 to 20 seconds. If in a public washroom, dry your hands before shutting off the water and use your towel to turn off the tap. If using a hand dryer, turn it on with your elbow. If soap and water aren't available, use alcohol-based disposable hand wipes or gel sanitizers.



2. Cover your mouth and nose with a tissue when coughing or sneezing. It may prevent those around you from getting sick.



3. Avoid touching your eyes, nose, or mouth. Germs are often spread when a person touches something that is contaminated with germs and then touches his or her eyes, nose, or mouth.

4. Stay home when you are sick. Avoid work, school, and errands when you are sick to help protect others from catching your illness.



5. Frequently clean common surfaces such as doorknobs, phones, water faucets and the refrigerator door.

6. Don't share things that go into the mouth, such as straws and drinking cups.

7. Stay Healthy! Good habits such as **getting plenty of sleep, engaging in physical activity, managing stress, drinking water to stay hydrated,** and **eating healthy food** will help you avoid getting sick during flu season and all year long.



Consult your physician if you need medical attention.

Antiviral medicines are available that can reduce the symptoms if taken early.

Symptoms of the flu can include:



- ✓ fever (usually high)
- ✓ sore throat
- ✓ headache
- ✓ runny or stuffy nose

- ✓ extreme tiredness
- ✓ muscle aches
- ✓ dry cough

- ✓ Gastro-intestinal symptoms, such as nausea, vomiting, and diarrhea (these are much more common among children than adults)



Reptile Rules



Reptiles include iguanas, turtles, snakes and lizards. As with many other animals, reptiles may carry *Salmonella* bacteria, which can be shed in their feces. Unwashed hands can carry the bacteria directly or indirectly to the mouth. When ingested, the bacteria can cause diarrheal illness, which may be serious in some people.



Always wash your hands thoroughly after you handle your pet reptile, its cage, its litter, its food and anything it has touched.



Keep your pet reptile and its equipment out of the kitchen or any area where food is prepared. Kitchen sinks should not be used to bathe reptiles or wash their dishes, cages or aquariums. If a bathtub is used for these purposes, it should be cleaned thoroughly and disinfected with bleach.



Do not nuzzle or kiss your pet reptile.



Keep reptiles out of homes where there are children under 5 years of age or people with weakened immune systems. Children under 5 years of age or people with weakened immune systems should avoid contact with reptiles.



Pet reptiles should not be allowed in child care centers.



Pet reptiles should not be allowed to roam freely throughout the home or living area.



For more information, contact the Illinois Department of Public Health, Division of Infectious Diseases, 525 W. Jefferson St., Springfield, IL 62761; telephone 217-785-7165 or TTY (hearing impaired use only) 800-547-0466.

Keep It Safe When Around Animals

Animals are cute but they have germs that can make you ill



Safely enjoy the animal exhibits by following some simple rules

**NO FOOD OR DRINK
IN THE ANIMAL AREAS**



**AVOID HAND TO
MOUTH CONTACT**

**REMOVE
PACIFIERS!**



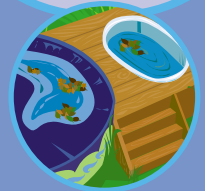
ALWAYS!



**WASH YOUR HANDS
AFTER VISITING
THE ANIMALS**

Protect your home against MOSQUITOES

Mosquitoes can develop in any standing water that is present for more than five days. To reduce the mosquito population around your home and property, eliminate all standing water and debris. Here are some spots where water can collect or where poor maintenance can cause problems.



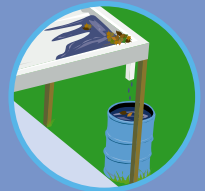
Pool cover that collects water, neglected swimming pool, hot tub or child's wading pool



Birdbath (clean weekly) and ornamental pond (stock with fish)



Any toy, garden equipment or container that can hold water



Flat roof without adequate drainage



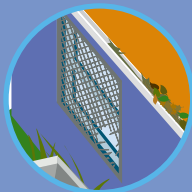
Clogged rain gutter (home and street)



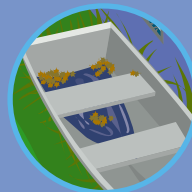
Trash and discarded tires (drill drain holes in bottom of tire swings)



Tree rot hole or hollow stump



Missing, damaged or improperly installed screens



Uncovered boat or boat cover that collects water



Leaky faucet or pet bowl (change water daily)

**Illinois Department of
Public Health**