

Community-Acquired Communicable Diseases: What do you need to know? What do you need to do?

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Epidemiology and Emerging Infections Program

Connecticut Department of Public Health



Epidemiology and Emerging Infections Program

- Infectious disease surveillance
- Outbreak investigations
- Provide guidance and recommendations regarding infectious disease prevention and control

What is Disease Surveillance?

- Monitoring spread of disease in order to establish patterns of progression
 - ◆ Collection
 - ◆ Analysis
 - ◆ Interpretation
 - ◆ Dissemination

Goals of Disease Surveillance

- Identify diseases that require direct case-specific public health intervention
 - ◆ Hepatitis A in a food worker
- Evaluate the effectiveness of control and preventative health measures
 - ◆ Vaccine preventable diseases
- Monitor changes in infectious agents
 - ◆ Trends in development of antimicrobial resistance
- Identify high risk populations or areas to target interventions
- Identify outbreaks

Collection of Surveillance Data

■ Reportable diseases

- ◆ State level: mandated reporting, disease list varies by state
- ◆ National level: voluntary reporting to CDC of 93 infectious diseases
- ◆ International level: International Health Regulations from WHO (smallpox, polio, SARS, novel influenza)

Connecticut Reportable Disease Statutes and Regulations

- Department of Public Health (DPH)
Commissioner has the authority to:
 - ◆ Prepare two annual lists
 - ◆ Reportable diseases (clinician reporting)
 - ◆ Laboratory significant findings
 - ◆ Convene an Advisory Committee annually to review proposed changes to the lists
- Diseases are reportable to both DPH and the local health department (LHD) where the case resides

Connecticut Reportable Disease Statutes and Regulations

- How reporting will be done
 - ◆ Category 1 (report immediately by phone upon recognition or strong suspicion)
 - ◆ 26 specific diseases requiring immediate public health follow-up
 - ◆ Outbreaks – institutional, foodborne, unusual disease or illness
 - ◆ Category 2 (report by mail within 12 hours)
 - ◆ 53 specific diseases

The logo for the Connecticut Department of Public Health. It features a dark blue rectangle with a light blue triangle pointing to the right, partially overlapping the text. The text "CONNECTICUT DEPARTMENT OF PUBLIC HEALTH" is written in white, uppercase letters.

CONNECTICUT DEPARTMENT OF
PUBLIC HEALTH

Keeping Connecticut Healthy

**REPORTABLE INFECTIOUS DISEASES
REFERENCE MANUAL**

***Reportable Infectious Disease Follow-up
For the State and Local Health Departments***

Connecticut Department of Public Health
Public Health Initiatives Branch
Infectious Diseases Section
Epidemiology and Emerging Infections Program

May 2008

Connecticut Reportable Disease Reference Manual

- DPH recommendations regarding who has primary responsibility for follow-up of reportable infectious diseases
 - ◆ Collection of surveillance data
 - ◆ DPH – e.g., MRSA, *E Coli* O157
 - ◆ LHDs – e.g., *Salmonella*, *Campylobacter*
 - ◆ Implementation of control measures
 - ◆ DPH and LHDs – e.g., foodborne outbreaks

What is an Outbreak?

- “An outbreak of disease is an *epidemic*.”
- “*Epidemic* means the occurrence of cases of illness clearly in excess of normal expectancy over a specific time period in a community, geographic region, building or institution.”

Source: DPH, Public Health Code, 19a-36-A1. Definitions.

How Many Cases Define an Outbreak?

- Outbreaks vary in number of cases due to:
 - ◆ **Causative agent** (e.g., viruses spread easier than bacteria)
 - ◆ **Size and type of population exposed** (e.g., compromised populations more likely to be effected than healthier groups)
 - ◆ **Previous experience with the disease** (e.g., chickenpox in adults unusual due to prior exposure and illness)
 - ◆ **Time and place of occurrence** (e.g., large group exposures; institutionalized groups)

When to Start an Outbreak Investigation

- Is there an unusual number of cases?
 - ◆ Illness caused by a reportable condition
 - ◆ Look at existing surveillance data
 - ◆ Illness not reportable
 - ◆ Assess if number of cases greater than expected with local surveillance systems (e.g., school absenteeism)
- Need to compare to past occurrences for that time period

Initial Steps of an Outbreak Investigation

- **Characterize the outbreak**
 - ◆ Define, and if possible, identify the causative agent
 - ◆ Identify source of the causative agent
 - ◆ Identify mode of spread
 - ◆ Characterize person, place and time
 - ◆ Develop a case definition
 - ◆ Characterize duration of exposure
- **Identify and implement control measures**

Initial Steps of an Outbreak Investigation: Identify the Causative Agent

- Confirm the diagnosis
 - ◆ Clinical diagnosis
 - ◆ Laboratory confirmation
 - ◆ Stool specimens for gastrointestinal outbreaks
 - ◆ Throat swabs for influenza-like illness outbreaks
 - ◆ Wound cultures for MRSA

Initial Steps of an Outbreak Investigation: Characterize Person, Place, and Time

■ Person:

- ◆ Collect data on ill persons
 - ◆ Age, race, sex
 - ◆ Symptoms
 - ◆ Specimens collected for testing
- ◆ Who is ill?
 - ◆ Students, staff, food handlers, etc.

Initial Steps of an Outbreak Investigation: Characterize Person, Place, and Time

■ Place:

- ◆ Workplace, classroom, common event or activity

■ Time:

- ◆ Onset date/time of symptoms
- ◆ Date specimens collected for testing
- ◆ Date/time of common event

Initial Steps of an Outbreak Investigation: Implement Control Measures

- Implement control measures before the actual source of the outbreak has been determined
- Continue surveillance to evaluate the effectiveness of control measures
- Consult with local and state health departments

MRSA

Background: What is MRSA?

- “MRSA” stands for methicillin resistant *Staphylococcus aureus*
- Two types of MRSA infections
 - ◆ Invasive (sterile sites)
 - ◆ Bloodstream infections, spinal fluid, joint fluid
 - ◆ Non-invasive
 - ◆ Skin infections (rashes, pus-filled boils, abscesses)

Healthcare-Associated MRSA Infections

- Usually invasive
- A problem since the 1960s
- ~60% of *S. aureus* infections in hospital intensive care units are MRSA
- Risk factors
 - ◆ Nosocomial, LTCF residence, dialysis, recent surgery or hospitalization
- Associated with:
 - ◆ Greater lengths of stay
 - ◆ Higher mortality
 - ◆ Increased health care costs

Community-Associated MRSA Infections

- Usually non-invasive
- First reported in 1980, increased since 1999
 - ◆ Seen in prisoners, men who have sex with men, children and young adults, athletes in contact sports
- Associated with:
 - ◆ Skin infections in vast majority; rarely pneumonia, bloodstream infection, or death
 - ◆ Different genetic make-up from healthcare-associated MRSA
 - ◆ More antibiotics available for treatment

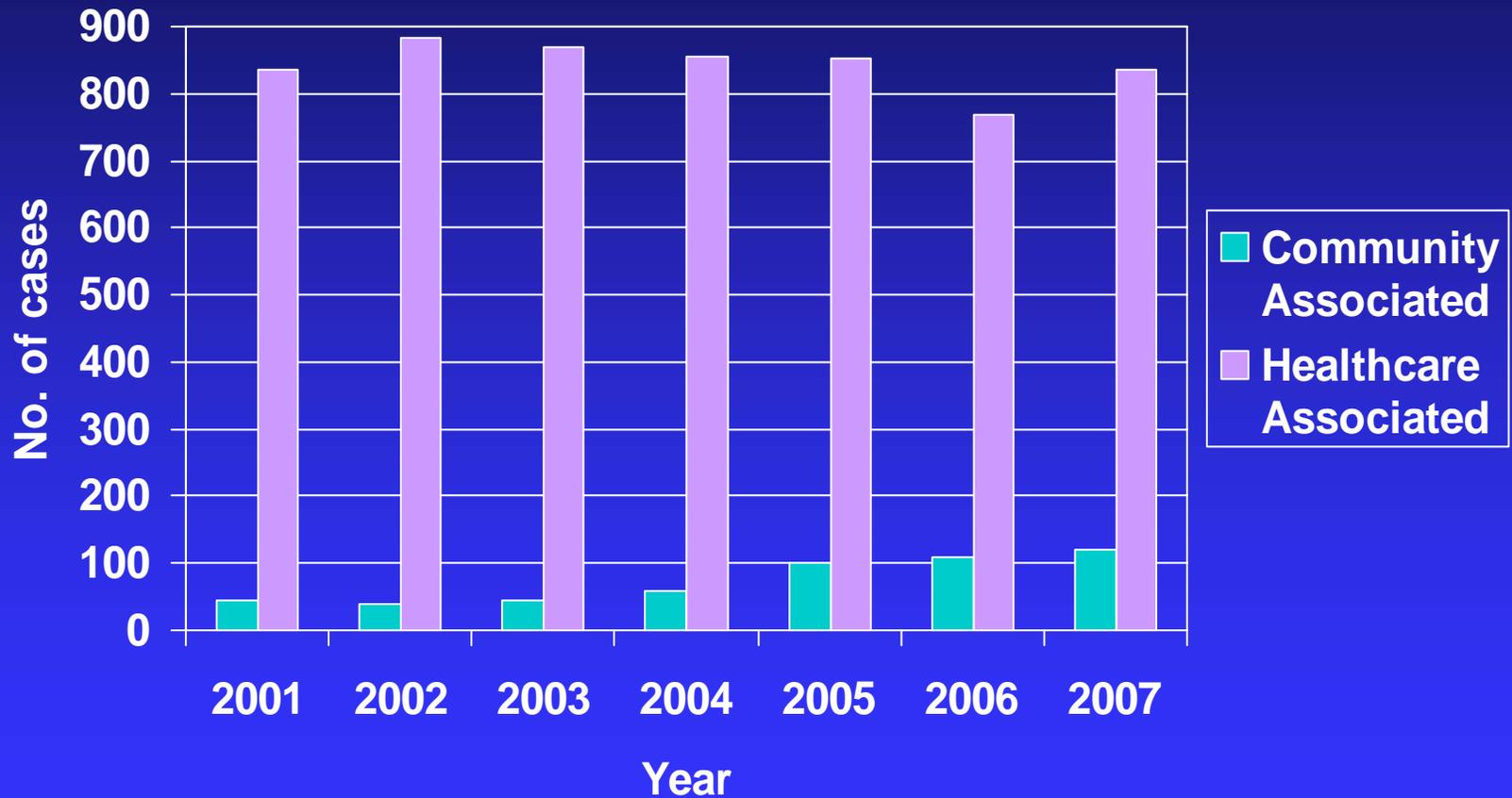
Surveillance for MRSA in Connecticut

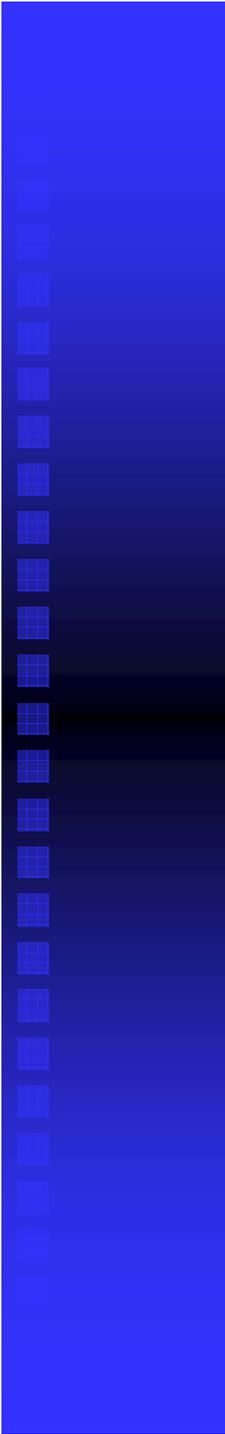
- Connecticut first state in country to implement surveillance
 - ◆ Concerned about development of increased resistance
 - ◆ Wanted to learn more about serious MRSA infections
 - ◆ Invasive MRSA (sterile site) made reportable in January 2001
- Individual cases of non-invasive MRSA (e.g. skin/soft tissue infections) not reportable; outbreaks are reportable

Invasive MRSA Cases by Year, CT

Year	No. of Cases
2001	881
2002	921
2003	914
2004	915
2005	954
2006	878
2007	958

Invasive MRSA Cases by Year and Place of Onset, CT





Community-Associated MRSA in the United States

Community MRSA Infections are Mainly Skin Infections, Multi-state Study*

<u>Disease Syndrome</u>	<u>(%)</u>
Skin/soft tissue	1,266 (77%)
Wound (Traumatic)	157 (10%)
Urinary Tract Infection	64 (4%)
Sinusitis	61 (4%)
Bacteremia	43 (3%)
Pneumonia	31 (2%)



*Atlanta, Baltimore, Minnesota



FIGURE. Methicillin-resistant *Staphylococcus aureus* in the leg of an evacuee from Hurricane Katrina — Dallas, Texas, September 2005



Photo/P Hicks, Children's Medical Center of Dallas



Outbreaks of MRSA in the Community

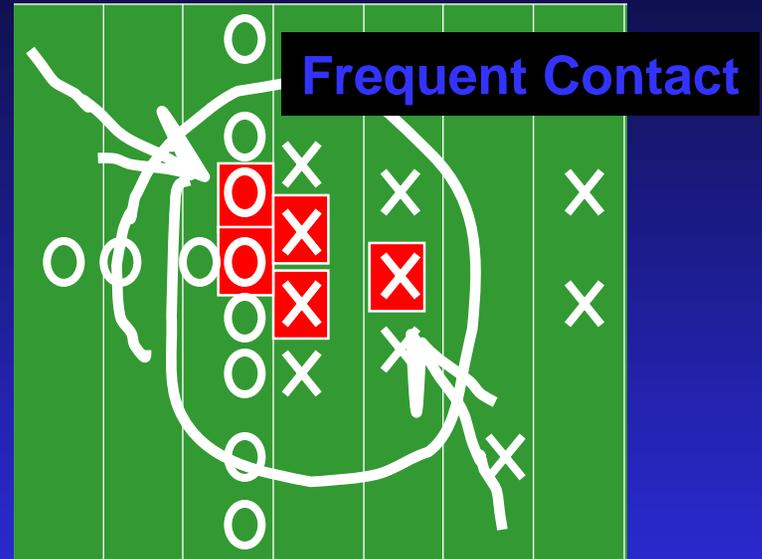
- Various settings
 - ◆ Sports participants
 - ◆ Inmates in correctional facilities
 - ◆ Military recruits
 - ◆ Daycare attendees
 - ◆ Native Americans / Alaskan Natives
 - ◆ Men who have sex with men
 - ◆ Tattoo recipients
 - ◆ Hurricane evacuees in shelters



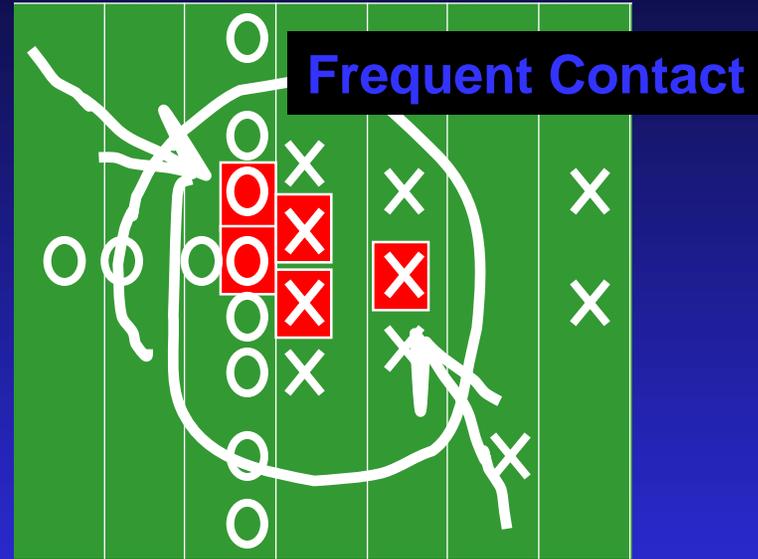
Factors that Facilitate Community Transmission



Factors that Facilitate Community Transmission

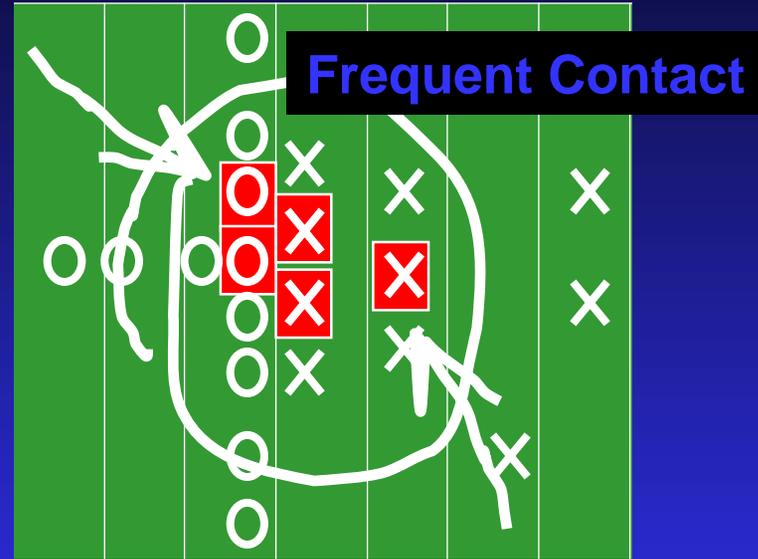


Factors that Facilitate Community Transmission



Compromised Skin

Factors that Facilitate Community Transmission

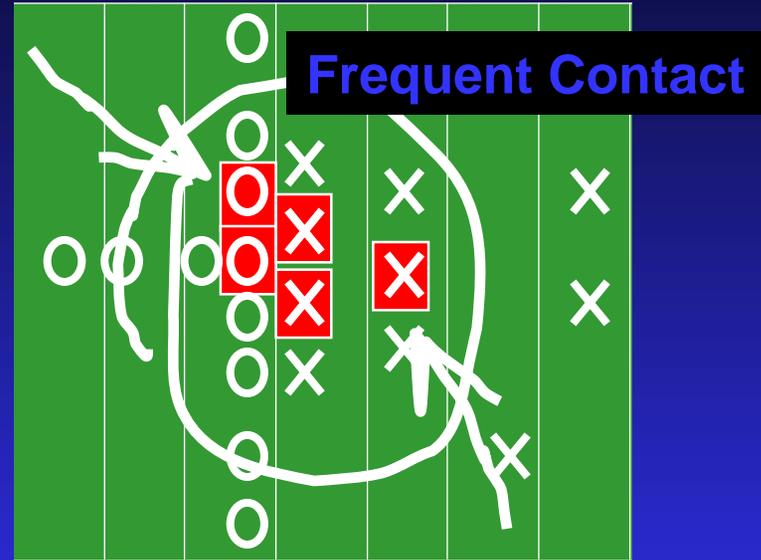


Compromised Skin



**Contaminated Surfaces
and Shared Items**

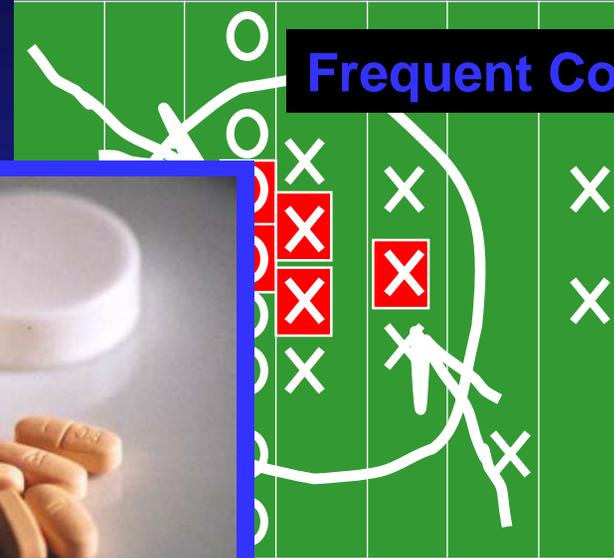
Factors that Facilitate Community Transmission



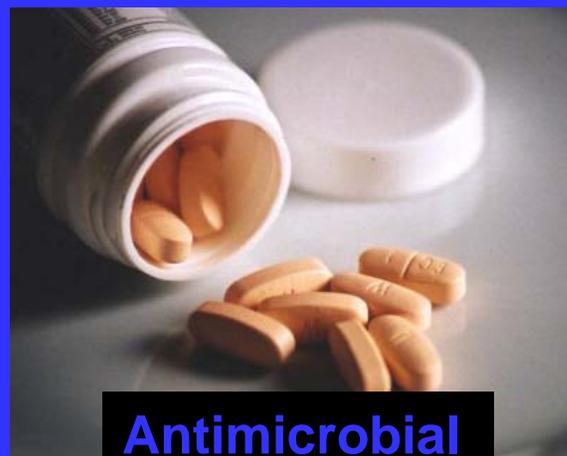
Factors that Facilitate Community Transmission



Crowding



Frequent Contact



Antimicrobial Use



Compromised Skin



Contaminated Surfaces and Shared Items



Cleanliness

Staph Infection Kills Virginia Student, Prompts Closing of 21 Schools

Tuesday , October 16, 2007 -- BEDFORD, Va.

A high school student has died as the result of a treatment-resistant staph infection, prompting Virginia officials to shut down 21 schools to keep the illness from spreading.

Ashton Bonds, 17, a senior at Staunton River High School in Bedford, Va., died Monday after being hospitalized for a week with Methicillin-resistant Staphylococcus aureus, his mother said.

"I want people to know how sick it made my son," Veronica Bonds said.

Bedford Superintendent James Blevins said at a news conference Tuesday that the schools will be closed for cleaning Wednesday.

<http://www.foxnews.com/story/0,2933,302299,00.html>

Hartford Courant.



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THURSDAY, OCTOBER 18, 2007

5+ Northwest Connecticut/Sports Final

\$1.00 in Fairfield County and outside Connecticut

75c

Deadly Germ, But It Can Be Beaten

Among surveyed regions, these were the number of MRSA virus instances. Not all regions in the U.S. were surveyed. (Circle sizes are scaled to number of cases).



SOURCE: Journal of the American Medical Association

Weston High School Student Has Infection, Isn't Seriously Ill

By **WILLIAM HATHAWAY**
COURANT STAFF WRITER

The antibiotic-resistant infection contracted by at least one Weston High School student is turning up more often in communities across Connecticut as it sparks fear across the nation.

Doctors across Connecticut have been reporting more cases of methicillin-resistant staphylococcus aureus infection, or MRSA, that have been contracted by people outside of hospitals. The number of serious blood-borne MRSA infections acquired in the community has increased from 38 in 2001, to



on the web

For more information, including a link to the Journal of the American Medical Association report, go to www.courant.com/staph

99 in 2006, state officials said.

But infectious disease experts also said that although the strain can kill the elderly and others with underlying health issues, in otherwise healthy people it is highly treatable and rarely life-threatening.

"You need to take these infections seriously, but they are rarely fatal in previously healthy young people," said Dr. James Ha-

dlar, chief epidemiologist at the Connecticut Department of Public Health.

Weston High School officials alerted the community to the problem this week, telling parents in a letter that one student had a confirmed case of MRSA and that they were waiting for results of tests on a second student.

Although the students were not seriously ill, the news came amid widening concern about the growth and severity of such infections.

The letter from the high school began cir-

PLEASE SEE **GERM**, PAGE A5

MRSA Myths

- New threat – never been seen before **FALSE**
- MRSA is a death sentence (or severe disability) **FALSE**
- People with MRSA are a threat to everyone **FALSE**
- Untreatable by antibiotics **FALSE**



STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC HEALTH

Methicillin-resistant *Staphylococcus aureus* Infections (MRSA):

MRSA Facts for Schools

Staphylococcus aureus (“staph”) infections have been around for a long time, causing mild to severe illness. MRSA is a kind of staph infection that may be more difficult to treat but is otherwise the same as a “staph infection”. Mild infections may look like a pimple or boil and can be red, swollen, painful, or have pus or other drainage. More serious infections may cause pneumonia, bloodstream infections, or surgical wound infections.

Staph is passed from person to person through direct contact with skin or through contact with contaminated items. The bacteria may live in people’s noses and on their skin and most of the time do not cause any problem. Staph can enter the body through breaks in the skin and sometimes cause infection. The main ways to prevent staph infection are to wash hands and care for wounds properly.

MRSA Prevention: Key Messages

- Practice good hygiene
 - ◆ Wash hands with soap and water
 - ◆ Using an alcohol-based hand sanitizer
 - ◆ Shower or bathe with soap and water after strenuous physical activity
- Cover cuts or abrasions with a clean dry bandage until healed
- Avoid sharing personal items that come into contact with bare skin
 - ◆ Towels, razors, uniforms, athletic equipment
- Focus cleaning on environmental surfaces that come into direct contact with people's skin

Case Scenario: MRSA in a Middle School Student

- Nurse at a middle school is notified by a parent that his/her child has been diagnosed with MRSA
 - ◆ How serious is the infection likely to be?
 - ◆ Should the student be allowed to attend school?
 - ◆ What is the risk to other students/staff?
 - ◆ Should parents/students be notified of the case?
 - ◆ Is it necessary to do extensive cleaning of the school?

Case Scenario: MRSA in a Middle School Student, cont.

- ◆ How serious is the infection likely to be?
 - ◆ Surveillance data
 - Skin infection
 - Not life-threatening

Case Scenario: MRSA in a Middle School Student, cont.

- ◆ Should the student be allowed to attend school?
 - ◆ Body site of infection
 - ◆ Draining vs. non-draining
 - ◆ Covering of wound
 - Clean, dry bandage taped on 4 sides
 - ◆ Personal hygiene
- ◆ What is the risk to other students/staff?
 - ◆ Skin-to-skin contact, contaminated items (e.g., towels, bandages)

Case Scenario: MRSA in a Middle School Student, cont.

- ◆ Should parents/students be notified of the case?
 - ◆ Typically not necessary to inform the entire school community
 - ◆ Case by case basis – Respond to concerns, don't create them
 - ◆ School nurse and school physician should determine, based on their medical judgment, whether some or all parents and staff should be notified

Case Scenario: MRSA in a Middle School Student, cont.

- Is it necessary to do extensive cleaning of the school?
 - ◆ Closing schools for cleaning not usually recommended for MRSA infections
 - ◆ Cleaning should focus on areas likely to come in contact with poorly covered or uncovered skin infections
 - ◆ Household bleach may be used for general cleaning:
 - ◆ ¼ cup bleach to 1 gallon of water
 - ◆ List of products effective against MRSA:
<http://epa.gov/oppad001/chemregindex.htm>

MRSA cleanup: \$216,605

The cost for hiring a professional cleaning company to sanitize several Bedford County schools after MRSA cases were discovered last month: \$216,605.44.

School officials said the cleaning had to be done to help deal with the community's fears about MRSA, following the death of Staunton River High School senior Ashton Bonds, apparently of complications from acquiring Methicillin-Resistant Staphylococcus Aureus.

Giving the community some peace of mind while they were still learning about this bacteria was a very important step, stated Ryan Edwards, public relations coordinator with Bedford County Public Schools. We saw the fear in the eyes of the parents and the community members when this first happened.

The Bedford Bulletin (Virginia), 11/6/07

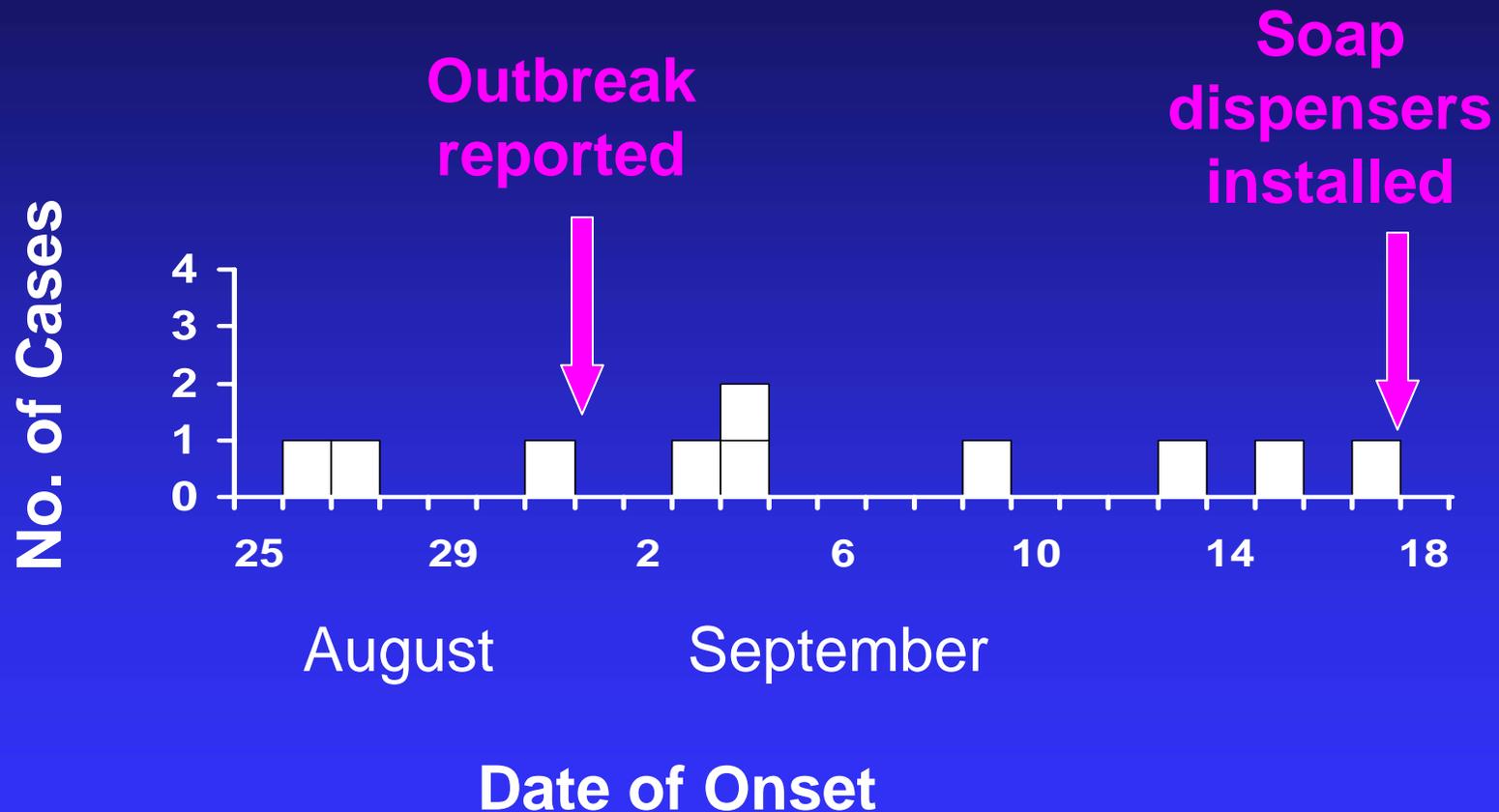
Case Scenario: MRSA in a Football Team

- School health nurse receives a call from a concerned parent reporting multiple members of the high school football team have MRSA skin infections
 - ◆ Is this an outbreak?
 - ◆ Should these players be excluded?

Case Scenario: MRSA in a Football Team, cont.

- Is this an outbreak?
 - ◆ Confirm the diagnosis
 - ◆ Rumor
 - ◆ Diagnosed by culture
 - ◆ Characterize person, place, time
 - ◆ Person
 - Number of players affected
 - Body site affected
 - ◆ Place
 - Team (e.g., varsity, j. varsity)
 - ◆ Time
 - Onset date of skin infection

Initial MRSA Skin Infections by Date of Onset



Case Scenario: MRSA in a Football Team, cont.

- ◆ Should these players be excluded?
 - ◆ Not necessary if the following are true:
 - Infection site covered with a clean dry dressing taped on all 4 sides
 - Avoid activities that could cause bandages to come loose and risk skin-to-skin contact
 - Consider site of infection and position played
 - Cleared by healthcare provider
 - Sports specific rules followed

Meningitis

Types of Meningitis

■ Viral

- ◆ More common than bacterial
- ◆ Enteroviruses most common cause
- ◆ Spread by contact with respiratory secretions and stool
- ◆ Infections with enteroviruses cause range of illness severity
- ◆ No specific treatment, supportive care, rarely life threatening
- ◆ Not a reportable disease in Connecticut
- ◆ No public health action recommended

Types of Meningitis, cont.

■ Bacterial

◆ Most common causes:

◆ *Haemophilus influenzae*

◆ *Streptococcus pneumoniae*

◆ *Neisseria meningitidis*

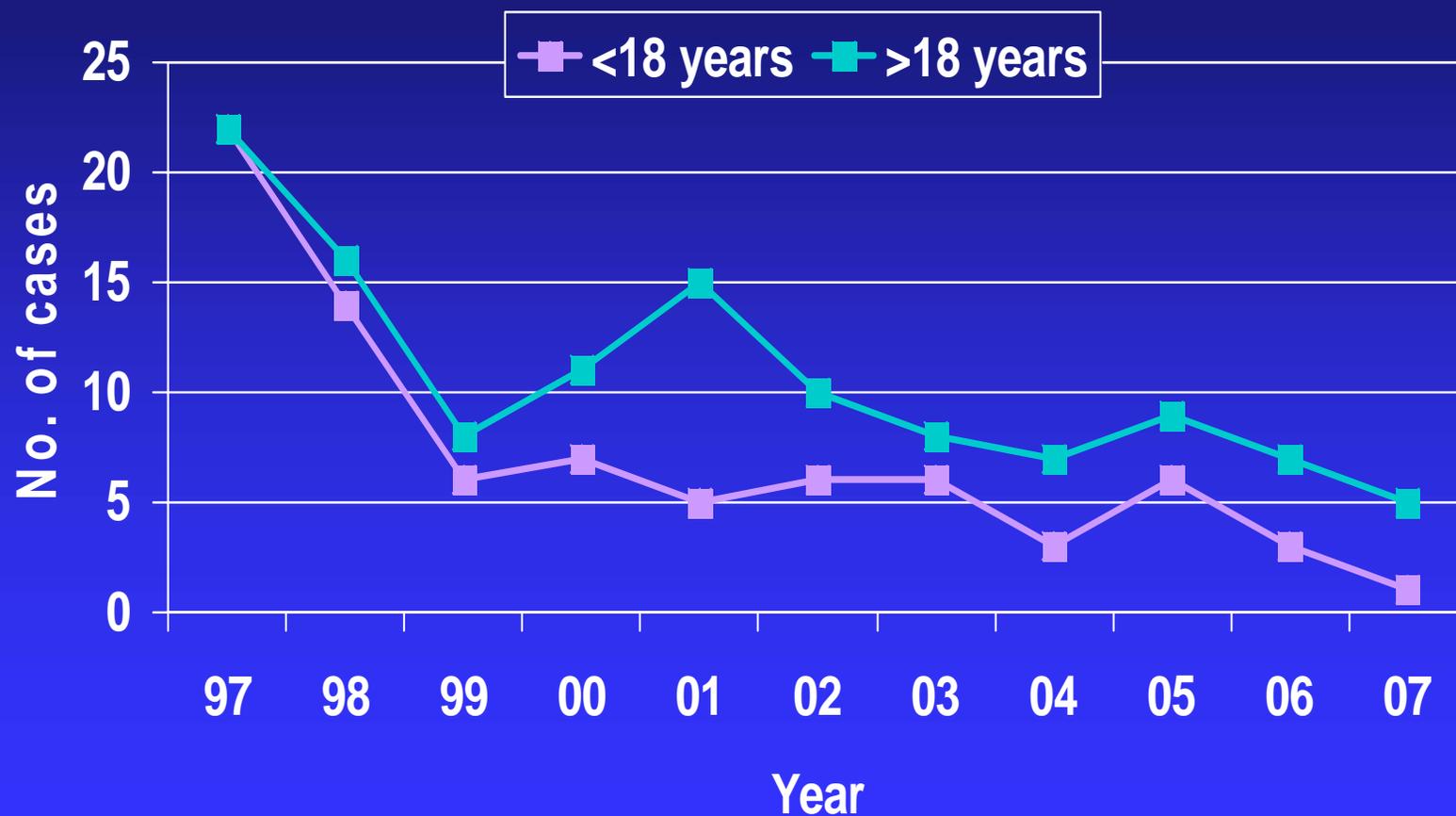
◆ Antibiotics needed

◆ More severe (brain damage, hearing loss, death)

Neisseria Meningitidis (Meningococcal disease)

- Syndromes: meningitis, septicemia
- Case-fatality rate: 10%
- Vaccination recommended for:
 - ◆ 11-18 yrs olds routinely
 - ◆ 2-10 yrs olds and adults at high risk
- Transmitted by direct contact with respiratory secretions
- Incubation period: 2-10 days
- Period of communicability: 10 days before onset of symptoms

Invasive Meningococcal Disease by Year and Age Group, CT



Neisseria Meningitidis (Meningococcal disease), cont.

- Category 1 reportable disease if invasive body site
- Public health action required
 - ◆ Antibiotic prophylaxis of close contacts
 - ◆ Household members
 - ◆ Significant others
 - ◆ Contact with respiratory secretions (e.g. sharing cigarettes, drinks, etc.)
 - ◆ Prophylaxis for those with close contact within 10 days of illness onset

Neisseria Meningitidis (Meningococcal disease), cont.

- DPH and LHDs have joint responsibility for follow-up and control
 - ◆ DPH
 - ◆ Verify the diagnosis
 - ◆ Collect surveillance data
 - ◆ Provide guidance as to the appropriate people needing prophylaxis
 - ◆ LHDs
 - ◆ Identify close contacts of case
 - ◆ Advise close contacts to see their physicians for prophylaxis

Case Scenario: Meningitis in a High School Student

- Local health nurse hears of a high school student hospitalized with meningitis
 - ◆ Is there a risk for other students and/or staff?
 - ◆ Who should be advised to get prophylaxis?
 - ◆ Should students/parents/staff be notified?

Case Scenario: Meningitis in a High School Student, cont.

- ◆ Is there a risk for other students and/or staff?
 - ◆ Confirm the diagnosis
 - Call DPH with name, DOB, hospital
- ◆ Who should be advised to get prophylaxis?
 - ◆ PH nurse call to case/family to identify contacts at risk:
 - Household members, significant others, close friends
 - Activities (e.g., sports team)
 - Recent parties/large gatherings attended

Case Scenario: Meningitis in a High School Student, cont.

- Should students/parents be notified?
 - ◆ Letters home common
 - ◆ Opportunity to highlight importance of meningococcal vaccine use
 - ◆ Potential for media coverage

Two FHS students contract disease

New Britain Herald, March 18, 2005

FARMINGTON -- Two students at Farmington High School have contracted meningococcal disease, school officials announced Thursday.

The students, a freshman and junior who remain unnamed, are currently receiving treatment in an area hospital. Both are receiving treatment, and the junior is on the mend, said Robert Villanova, superintendent of schools.

WFSB.com

Cromwell Student Diagnosed With Meningitis

Board Of Education Sends Letter To Parents

POSTED: 1:00 pm EDT September 24, 2008

UPDATED: 1:31 pm EDT September 24, 2008

CROMWELL, Conn. -- Cromwell parents are being warned that a student at the town's middle school has been diagnosed as having viral meningitis.

The Board of Education sent a letter home to parents informing them of the diagnosis.

- **PDF:** [Letter From Cromwell Public Schools](#)

Symptoms of meningitis include fever, headache, stiff neck and lethargy. Symptoms usually appear within 3 to 7 days from the time of infection.

Refresh this page and watch *Eyewitness News at 5* for updates to this developing story.

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MENINGITIS

- **Meningitis:** [What Is It? | FAQs](#)
- **Link:** [National Meningitis Association](#)

SYMPTOMS

- High fever
- Headache
- Stiff neck
- Nausea/Vomiting
- Sleepiness
- Confusion

Case Scenario: Meningitis in a Daycare Attendee

- Public health nurse receives a call from a daycare provider concerned because a 1 yr old attendee reportedly has meningitis
 - ◆ Is there a risk for other attendees and/or staff?
 - Confirm the diagnosis
 - Call DPH with name, DOB, hospital
 - ◆ Who should be advised to get prophylaxis?
 - All childcare contacts
 - Case specific questions (e.g. large daycare with no mixing of age groups)
 - Consult with DPH

Norovirus

Norovirus : Background

- Symptoms
 - ◆ Nausea, vomiting, diarrhea
- Self-limiting, last 1-2 days
- Supportive care, rehydration
- Incubation period is 24-48 hours
- Clinical diagnosis

Norovirus : Background, cont.

- Common cause of outbreaks
 - ◆ Catered events, nursing homes, schools
- Very contagious
 - ◆ Small amount of virus can cause illness
 - ◆ Found in both vomit and stool
 - ◆ Viral shedding for up to 2 weeks in stool
- How is it spread?
 - ◆ Fecal-oral route → Contaminated food
 - ◆ Contaminated environmental surfaces

WFSB.com

Norovirus Illnesses Close Chester School

School To Sanitize Campus On Friday

POSTED: 5:36 pm EST November 29, 2007

UPDATED: 8:03 pm EST November 30, 2007

CHESTER, Conn. – Chester Elementary School remained closed Friday after more than half of the student body fell ill.

A letter to parents from Regional School District No. 4 Superintendent Kim Caron indicates the students have reported vomiting, nausea and diarrhea symptoms that generally last for one to two days.

Caron wrote that the town's health director and other officials contacted the district and recommended taking precautions.

Doctors don't yet know what caused the illness, but said it does look like the fast-spreading norovirus.

"This is a particular virus where it doesn't take many virus particles to cause infection. So, it is very easily spread and people can get ill from it," said Konrad Kotrady, the town's health director.

School officials decided to close the school on Friday in an effort to prevent additional illnesses and to allow students to recuperate.

Crews will go through the campus to conduct a thorough cleaning.

"Our cell phones got called, our house phones got called, and there was an automotive message (that) tells you that there was an intestinal virus in school," said John Saunders, a Chester school parent.

"It's surprising how fast it went around and how many students have it. It sounds super contagious to me," said Jodi Reilly, a Chester school parent. "We're OK, so far. I hope we make it through the night."

Other schools that have reported a typical number of similar illnesses include Deep River and Essex elementary schools, John Winthrop Middle School and Valley Regional High School. Authorities continue to monitor conditions at those campuses.

More Information

- **Link:** [CDC Norovirus Q&A, Fact Sheet, Information](#)

Related To Story



- **Video:** [Schools Cleaned After Norovirus Outbreak](#)

Virus Shuts Down Schools in Connecticut

www.foxnews.com, Friday , December 21, 2007

The norovirus is also suspected of sickening scores of students in Connecticut. The outbreak prompted officials in East Lyme to close all five public schools.

School officials say at East Lyme Middle School more than 20 percent of the 921 students stayed home Wednesday or were sent home early from the nurse's office.

Case Scenario: Norovirus at an Elementary School

- Elementary school nurse has 10 students present in one day to her office complaining of diarrhea and/or vomiting
 - ◆ Is this an outbreak?
 - ◆ Collect initial data and notify DPH
 - How many students typically present with these symptoms in a typical day/week?
 - Need “surveillance” records
 - Recent similar illnesses among students

Case Scenario: Norovirus at an Elementary School, cont.

◆ Characterize person, place, time

◆ Person

- Age, gender of students
- Common foods
 - Eat in school cafeteria or bring lunch
- Symptoms: Vomiting, diarrhea, frequency, fevers, blood in stool

Case Scenario: Norovirus at an Elementary School, cont.

- Characterize person, place, time
 - ◆ Place
 - ◆ Grade level, classroom location
 - ◆ Common events
 - ◆ Time
 - ◆ Date/time of illness onset

Case Scenario: Norovirus at an Elementary School, cont.

- Identify and implement control measures
 - ◆ Exclude ill students, encourage parents to keep ill students home
 - ◆ Environmental cleaning – bleach based cleaners
 - ◆ Stress personal hygiene
 - ◆ DPH/LHD sanitarians will assess food handling practices and identify ill food workers

Seasonal Influenza

Influenza : Background

- Highly infectious – virus spread rapidly from person to person
- Some strains cause more severe illness than others
- Sudden onset of fever, headache, muscle aches, respiratory symptoms (cough)
- Incubation period average 2-3 days

How influenza spreads

- Easily passed from person to person through coughing and sneezing
- Transmitted through
 - ◆ Breathing in droplets containing the virus, produced when infected person talks, coughs or sneezes
 - ◆ Touching an infected person or surface contaminated with the virus and then touching your own or someone else's face

Children are efficient and vulnerable transmitters



Influenza in Schools

- ◆ No specific state recommendations exist for deeming when seasonal influenza activity is of concern
 - ◆ Maintain systems to monitor student/staff absenteeism/respiratory illnesses to establish a baseline
- ◆ Focus on prevention and control
 - ◆ Educate on preventative measures:
 - Routine vaccination of those <18yrs
 - Exclusion of ill students and staff
 - Hand hygiene and respiratory etiquette
- ◆ Policies related to influenza (e.g. school closing) determined at local level
 - ◆ In non-pandemic period based upon ability to educate effectively

Head Lice

Head Lice : Background

- Parasitic insects, feed on human blood
 - ◆ Die within 1-2 days if cannot feed
 - ◆ No disease transmission
- Most common in preschoolers and elementary age
- Mode of spread
 - ◆ Most common: head-to-head contact
 - ◆ Uncommon: contaminated items (hats, combs)
- Estimated 6-12 million infestations/yr in US children

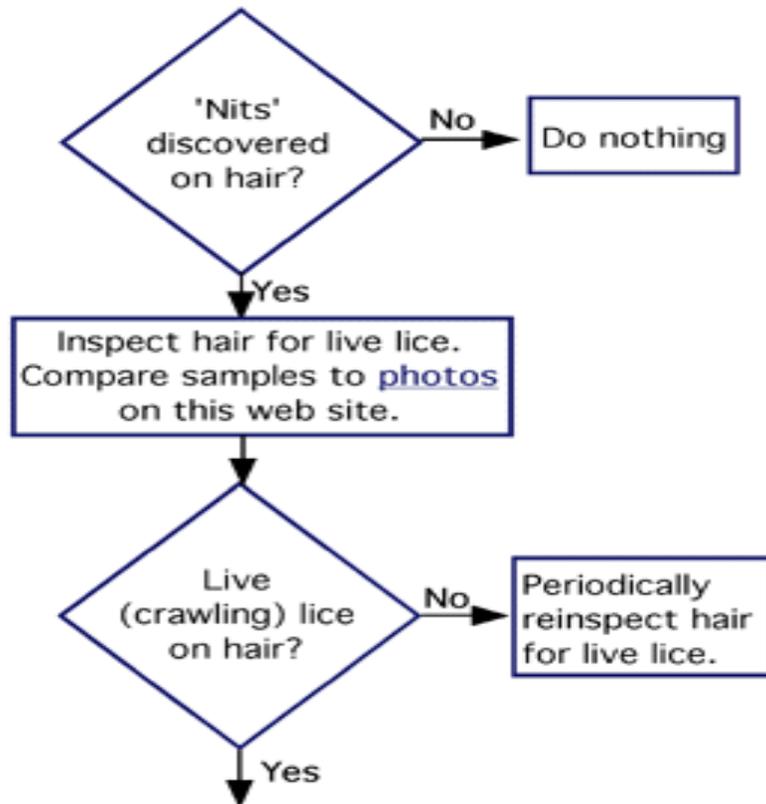
Head Lice in Schools

- ◆ No specific DPH policies for control exist
- ◆ General guidance:
 - ◆ Harvard school of public health website
 - www.hsph.harvard.edu/headlice.html

Scheme for managing presumed head louse infestations in schools



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<http://www.hsph.harvard.edu/headlice.html>



RECOMMENDED RESPONSES ✓

Notify parent/guardian at the end of the day of the suspected infestation.
Provide information on the biology of head lice and methods to eliminate infestations.

UNJUSTIFIED RESPONSES ✗

Exclusion or quarantine.
Notification of classmates' parents.
Mass screenings.
Insecticide treatments to school environment.
Reporting case to youth/social services.
Bagging of clothes.
Restricted use of headphones or athletic gear (helmets).

Head Lice in Schools

- ◆ No specific DPH policies for control exist
- ◆ General guidance:
 - ◆ Harvard school of public health website
 - www.hsph.harvard.edu/headlice.html
- ◆ Policies related to head lice control established at local level (e.g. board of education)
 - ◆ Age group
 - ◆ Number of cases

Conclusions

- Surveillance data necessary to:
 - ◆ Establish baseline level of disease
 - ◆ Identify increase in level of disease
 - ◆ Evaluate control measures
- Initial outbreak response includes:
 - ◆ Verifying the diagnosis
 - ◆ Characterizing person, place, time

Questions/Comments

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