

EPI Update for Friday, September 16, 2005

Center For Acute Disease Epidemiology

Iowa Department of Public Health

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Pertussis Update

The Iowa Department of Public Health continues to monitor pertussis activity across the state. It has been noted that there has been an increasing number of cases in infants younger than six months of age. We would like to bring your attention to the Centers for Disease Control and Prevention's updated summary of oral macrolide (erythromycin, clarithromycin, azithromycin) treatment and prophylaxis for pertussis by age group (http://www.idph.state.ia.us/adper/common/pdf/immunization/pertussis_table.pdf).

Because some texts are only updated every several years (Red Book, Vaccine Preventable Disease Manual), not all the information currently available is the same. The table of medications for pertussis represents the most current recommendation for pertussis treatment/prophylaxis.

One of the important changes on the table is that for infants less than one month of age. The preferred drug is azithromycin 10mg/kg/day in a single daily dose for five days.

Clinical studies have demonstrated that azithromycin has microbiologic effectiveness comparable with erythromycin for treatment of pertussis. Azithromycin has fewer and milder adverse events, achieves higher tissue concentration, has improved patient compliance, has fewer daily doses, and the treatment course is shorter. Limited data from small clinical trials are available that confirm the microbiologic effectiveness of this agent in infants less than six months of age with pertussis, who are likely to be partially or unimmunized and whose colonization is more likely to be prolonged compared with older, previously immunized individuals with pertussis. These studies report a decrease in adverse events with no increased risk of infantile hypertrophic pyloric stenosis (IHPS) in infants < 1 months of age that received azithromycin.

For prophylaxis, the benefits of administering a macrolide should be weighed according to the risk of disease and complications versus the potential adverse effects of the drug. Because of severe and sometimes fatal pertussis-related complications in infants under six months of age, postexposure prophylaxis should be given. All infants <1 month of age who receives any macrolide should be monitored for the development of IHPS.

Antimicrobial treatment should be initiated as soon as pertussis is suspected in a patient. Initiating treatment \geq three weeks after cough onset has limited benefit to the patient or contacts. However, treatment is recommended up to six weeks after cough onset in high-risk cases and prophylaxis should be considered for high-risk contacts up to six weeks after exposure (infants less than 12 months of age are considered high-risk cases or contacts).

TMP-SMZ may be used as an alternative agent in patients who are allergic to macrolides, who cannot tolerate macrolides or who are infected, rarely, with a macrolide-resistant strain of *Bordetella pertussis*. The recommended dose in children is trimethoprim eight mg/kg/day, sulfamethoxazole 40 mg/kg/day in two divided doses for 14 days. For adults, the recommended dose is trimethoprim 320 mg/day, sulfamethoxazole 1600 mg/day in two divided doses for 14 days. Because of the risk of kernicterus, TMP-SMZ should not be given to pregnant women, nursing mothers, premature neonates or infants < two months of age.

Update on Lyme Disease in Iowa

Although Lyme disease is mostly localized in the northeastern, mid-Atlantic and upper north central states, it also occurs in several counties in northwestern California and in some parts of Iowa. In 2002, there were 23,763 cases of Lyme disease reported to the Centers for Disease Control and Prevention (CDC) ([MMWR 52\(31\):741-750](#)). Of these cases, 95 percent were from the states of Connecticut, Delaware, Rhode Island, Maine, Maryland, Massachusetts, Minnesota, New Jersey, New Hampshire, New York, Pennsylvania and Wisconsin.

During 2004, 49 cases of Lyme disease were reported in Iowa; of these, 35 (71 percent) occurred in eastern Iowa counties. Iowa's Lyme disease cases for 2005 so far total 57 cases, with 44 cases reported from eastern Iowa counties (77 percent). From ongoing tick surveillance from ISU Entomology, the human cases of Lyme disease correlate with where deer ticks predominantly live in our state – eastern Iowa. Historically, the percentage of deer ticks in Iowa estimated to be infected with the organism that causes Lyme disease (*Borrelia burgdorferi*) has remained at approximately eight to 10 percent.

A person's chances of being infected with the Lyme disease organism is usually less than three percent. Research has shown that an infected deer tick must be attached for more than 24 hours (typically 48 to 72 hours) to transmit the organism. Additionally, the nymph stage of deer ticks (pre-adults) is more likely to transmit the organism than adult deer ticks. Because feeding nymphs are rarely noticed due to their small size, they are more likely to feed for at least 48 to 72 hours. **Approximately 75 percent of people with confirmed Lyme disease did not find a tick on them, nor do they recall having been bitten by a tick.**

Diagnosis of Lyme disease should be made after evaluation of a patient's clinical presentation and risk for exposure to infected ticks, and, if indicated, by the use of validated laboratory tests. The Food and Drug Administration has approved 70 serologic assays in the United States that healthcare providers can use to aid in the diagnosis of

Lyme disease. Initial testing for a person who may have Lyme disease should be performed by an enzyme immunoassay (EIA) or immunofluorescent assay (IFA). Positive or equivocal EIA or IFA test results should be tested further by using a standardized Western immunoblot assay. **Specimens negative by a sensitive EIA or IFA do not need further testing.** CDC guidance on diagnostic testing for Lyme disease is available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5405a6.htm>. Under most circumstances, treating a person who has only had a tick bite is **NOT** recommended. The Infectious Disease Society of America (IDSA) **does not** recommend giving antibiotics just because someone has been bitten by a tick. In addition, IDSA **does not** recommend testing deer ticks for *Borrelia burgdorferi*, except as a research tool. Treatment by a medical provider should not be based on the results of testing deer ticks, but **rather on evaluation of the patient.** The recommendation by CDC, IDSA and IDPH for persons who find ticks attached to them is to watch for fever or a rash at the site of attachment for 30 days. If these symptoms occur, they should see their medical provider to be assessed for Lyme disease or one of the other diseases that can be transmitted by ticks (for example, human granulocytic ehrlichiosis, Rocky Mountain spotted fever or babesiosis).

For the IDSA's guidelines on treatment of Lyme disease, please go to:

<http://www.journals.uchicago.edu/CID/journal/issues/v31nS1/000342/000342.web.pdf>

CDC homepage for Lyme disease:

<http://www.cdc.gov/ncidod/dvbid/lyme/index.htm>.

For information about cases of Lyme disease in the United States from 2001 to 2002:

<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5317a4.htm>.

Departing Message from Dr. Aileen Buckler, Deputy State Epidemiologist

Friday, Sept. 16 will be my last day at the Iowa Department of Public Health. As some of you may know, my husband's father has bladder cancer. Although he was diagnosed a couple of years ago, this spring, and particularly this summer, he has had a lot of complications and is not doing well. My husband and I have made the decision that we need to move back to Virginia so we can be more available to help and also so that our children can have the opportunity to get to know their grandfather while they still can.

I am grateful for all the help that I received from everyone when I moved here, not only with finding my place in CADE, but also in Iowa. I appreciate the patience everyone had with me the first few months, and I feel like I have really grown in my abilities as an epidemiologist through working with everyone at the state and local levels. I was only here for a little over a year and did not get to meet everyone in the field, but all of the interactions I have had with those at the local health departments and in the medical community through the fall EPI Updates, outbreak investigations and all the other interesting diseases we have worked on have been rewarding. I could tell that everyone I worked with really cared about what they were doing to help Iowa become a healthier place. I have learned so much here and hope I will be able to use all the knowledge I

gained in a future public health position. (For now I will be a stay-at-home mom to my two- and four-year-old.) Thanks, good luck and keep up the great work! Aileen.

HACCP Overview

Hazard Analysis and Critical Control Point, or HACCP (pronounced “hassip”) is a systematic approach to ensuring food safety through the application of a set of principles targeted at preventing hazards in a particular setting that could result in foodborne illness. HACCP involves seven principles:

- **Analyze hazards.** Potential hazards associated with a food and measures to control those hazards are identified. The hazard could be biological, such as a microbe; chemical, such as a toxin; or physical, such as ground glass or metal fragments.
- **Identify critical control points.** These are points in a food's production – from its raw state, through processing and shipping, to consumption by the consumer – at which the potential hazard can be controlled or eliminated. Examples are cooking, cooling, packaging and metal detection.
- **Establish preventive measures with critical limits for each control point.** For a cooked food, for example, this might include setting the minimum cooking temperature and time required to ensure the elimination of any harmful microbes.
- **Establish procedures to monitor the critical control points.** Such procedures might include determining how and by whom cooking time and temperature should be monitored and documented.
- **Establish corrective actions to be taken when monitoring shows that a critical limit has not been met** – for example, reprocessing or disposing of food if the minimum cooking temperature is not met.
- **Establish procedures to verify that the system is working properly** – for example, testing time-and-temperature recording devices to verify that a cooking unit is working properly.
- **Establish effective record keeping to document the HACCP system.** This would include records of hazards and their control methods, the monitoring of safety requirements and action taken to correct potential problems. Each of these principles must be backed by sound scientific knowledge: for example, published microbiological studies on time and temperature factors for controlling foodborne pathogens.

HACCP provides a scientific approach to identifying and preventing hazards from contaminating food. HACCP is applied in a large number of food manufacturing settings allowing government oversight through the review of records. This review enables investigators to see how well a firm is complying with food safety laws over a period of time, rather than at a particular instant during an onsite inspection. HACCP places the responsibility for ensuring food safety appropriately on the food manufacturer or distributor. A HACCP-based inspection process has become the focus of compliance inspections of retail facilities and its principles are utilized in the investigation of foodborne outbreaks to identify errors in food handling processes that may have resulted in contamination.

To learn more about HACCP visit: <http://vm.cfsan.fda.gov/~lrd/haccp.html> or http://www.fsis.usda.gov/Science/hazard_analysis_&_pathogen_reduction/index.asp.

Influenza Surveillance Assistance Needed

Attention school nurses, long-term care facilities and childcare centers!!! We need your help with influenza surveillance this season!

CADE is currently seeking volunteers from **schools, long term care facilities and childcare centers** to track the number of attendees and absences/ill residents throughout the influenza season. Participants will be asked to report every week through an online survey. Entering information into the survey takes only a few minutes. Reporting the number of absences/ill due to influenza-like illness is optional. If you do not have Internet access, you will be able to report by phone.

The data received will be used to determine the level and locations of influenza activity throughout the state. Influenza surveillance data also helps to determine vaccine efficacy and where disease prevention measures should be focused.

For your efforts, the program epidemiologist will work to provide you with templates of educational materials for your facility and monthly, custom reports of activity in your facility. **To request more information or volunteer for the program, contact Meghan Harris at mharris@idph.state.ia.us or 515-281-7134.**

Protect Iowa Health Education Campaign

The Iowa Department of Public Health has developed a public education campaign, *Protect Iowa Health*, to encourage Iowans to prepare for public health emergencies. To obtain a copy of the guidebook call 1-866-339-7906, log onto www.protectiowahealth.org for a pdf. version or contact your local public health agency. Guidebooks are also available at county ISU Extension offices, Hy-Vee stores, participating U.S. Cellular stores and Casey's General stores. The guidebook is currently available in English and Spanish.

Meeting Announcement and Training Opportunities

The brochure for the fall *Epidemiology Updates* is now online at the Iowa Department of Public Health's website at:

http://www.idph.state.ia.us/common/pdf/conferences/disease_prevention_fall.pdf.

8th Annual Iowa HIV/AIDS Conference - October 11-12, 2005, the conference brochure is available at:

<http://www.trainingresources.org/displayconvention.cfm?conventionnbr=1472>.

Have a healthy and happy week!
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