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Erratum - Electronic Distribution of the Connecticut Epidemiologist Newsletter

In our last issue of the Connecticut Epidemiologist Newsletter, we requested that people interested in receiving the newsletter electronically should subscribe by sending an email message to imailsrv@list.state.ct.us with a MESSAGE BODY of "subscribe ct**eip**news Firstname Lastname".

This should have read:

...with a MESSAGE BODY of "subscribe ct**epi**news Firstname Lastname". (The 'p' and 'i' were transposed).

We apologize for any inconvenience and hope that, if you were unable to subscribe before, that you will try again. If you have any questions concerning this process, please contact Devon Eddy at (860) 509-7995.

Hepatitis B Post-vaccination Testing Recommendations for Health Care Personnel

The incidence of hepatitis B virus (HBV) infection in health care personnel (HCP) has decreased in recent years. It is estimated that, nationwide, there was a 90% decrease between 1985 and 1993 (1). Concomitant with this decrease has been an increase in vaccination of HCP against HBV and an increased awareness and use of universal precautions to prevent occupational exposure to bloodborne pathogens. In addition, HBV incidence in the general population has declined significantly in Connecticut and the United States (US) during the 1990's. Regardless of these trends, occupational exposure to HBV remains an important health issue for HCP (2).

Initial signs of infection with HBV can range from inapparent or minor symptoms (abdominal discomfort, anorexia, nausea and vomiting, arthralgias, or rash) to more serious symptoms including jaundice, to fulminating illness. The case-fatality rate is 1% among hospitalized cases. Most infected persons recover completely and are immune from subsequent infection. However, approximately 5-10% of infected adults become chronically infected and are at increased risk for developing chronic active hepatitis, cirrhosis, and primary hepatocellular carcinoma. It is estimated that 100-200 HCP died annually in the US during 1987-1997 as a consequence of chronic HBV infection (1). Chronically infected persons are also a lifelong source of infection.

Hepatitis B vaccination is recommended by both the Centers for Disease Control and Prevention (CDC) and the Occupational and Safety Health Act (OSHA) for HCP at risk for occupational exposure to bloodborne pathogens (1-5). In 1991, bloodborne pathogens regulations issued under the OSHA mandated employers, as part of a comprehensive plan to reduce occupational exposure to bloodborne pathogens, to make hepatitis B vaccine available to at-risk HCP.

Since 1997, post-vaccination testing for HCP with on-going risk of bloodborne pathogens exposure has also been recommended (1). Although the percentage of appropriately vaccinated persons who develop protective levels of hepatitis B surface antibody is high (=90% in adults and =95% in children), there are several characteristics associated with a statistically significant increased risk of non-response including smoking, obesity, and increased age (6). In addition, the level of HBsAb produced in response to the vaccine can decline over time. Up to 60% of persons who initially respond to the vaccine lose detectable antibodies by 12 years post-vaccination. Importantly, despite the loss of antibody, vaccine-induced immunity continues to prevent clinical disease or detectable viremic HBV infection (1, 3).

In this issue...

Recommendations for post-vaccination testing for HCP

- Post-vaccination testing for HBsAb is indicated for HCP who have blood or patient contact and are at ongoing risk for occupational exposures to bloodborne pathogens (1). A knowledge of antibody response aids in determining appropriate postexposure prophylaxis.

- Post-vaccination testing should be limited to the test for HBsAb, conducted 1-2 months after the third hepatitis B vaccine dose (1). If the vaccinated person has protective levels of HBsAb (=10mIU/mL blood), no further action is needed. There is currently no recommendation for additional post-vaccination testing beyond the initial test or for booster doses of vaccine.

- If the vaccinated person is negative for HBsAb 1-2 months after the third dose, the hepatitis vaccine series and the HBsAb test should be repeated according to the recommended schedule. Approximately 50% of non-responders will develop protective levels of HBsAb after three additional doses (2). No more than six doses of vaccine should be given.

- If a vaccinated person did not receive post-vaccination testing and subsequently becomes employed as a HCP, their vaccination dates should be documented to confirm the series was administered appropriately. If the series cannot be documented, the series should be repeated. The CDC does not recommend post-vaccination testing after 1-2 months after the third dose because of the difficulty in interpreting the results: a) If HBsAb is at protective levels, the HCP should be considered protected; b) if HBsAb is at unprotective levels, either there was vaccine non-response or the HBsAb antibody level waned as described above. If an employer determines that it is important to identify non-responders who are unprotected, for example, staff of hemodialysis centers, the employer may elect to offer a booster dose followed by an HBsAb test. For the majority of HCP, testing beyond 1-2 months is unnecessary because, in the event of a recognized exposure, HCP would be evaluated according to post-exposure protocol (4, 5).

Definitions

Occupational exposure: "Reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties" (1, 4).

Health-care personnel (HCP): " … Persons (e.g., employees, students, contractors, clinicians, public-safety workers, or volunteers) whose activities involve contact with patients or with blood or other body fluids from patients in a health-care, laboratory, or public-safety setting. The potential of exposure exists for blood and body fluid exposure to other workers, and the same principles of exposure management could be applied to other settings" (2).

For further information

The Morbidity and Mortality Weekly Report articles shown in the list of references include additional information about the management of occupational exposure to bloodborne pathogens (HBV, hepatitis C virus, human immunodeficiency virus) and vaccination recommendations for HCP. These documents and other information are available at www.cdc.gov or www.osha.gov.

References

1. CDC. Immunization of health-care workers. MMWR. 1997. 46:No. RR-18.
2. CDC. Updated US Public Health Service guidelines for the management of occupational exposures to HBV, HCV, and HIV and recommendations for postexposure prophylaxis. MMWR. 2001. 50:No. RR-11.
3. CDC. Hepatitis B: A comprehensive strategy for eliminating transmission in the United States through universal childhood vaccination: Recommendations of the Immunization Practices Advisory Committee (ACIP). 1991. 40:No. RR-13.
4. Department of Labor. Occupational Safety and Health Administration. 29 CFR Part 1910.1030.Occupational exposure to bloodborne pathogens; final rule. Federal Register 1991; 56:64004-182
5. Bloodborne pathogens: the standard. Federal Register 1991; 60:64175-82.
6. Roome A, S Walsh, M Cartter, J Hadler. Hepatitis B vaccine responsiveness in Connecticut public safety personnel. JAMA. 270:2931-34.

New Staff

Hepatitis C coordinator and development of a viral hepatitis prevention plan

The Department of Public Health (DPH), Infectious Disease Division, recently received funding from the Centers for Disease Control and Prevention to hire a hepatitis C coordinator. A second grant, from the Council of State and Territorial Epidemiologists, has also been awarded and provides funding to develop a statewide viral hepatitis prevention plan (hepatitis A, B, C).

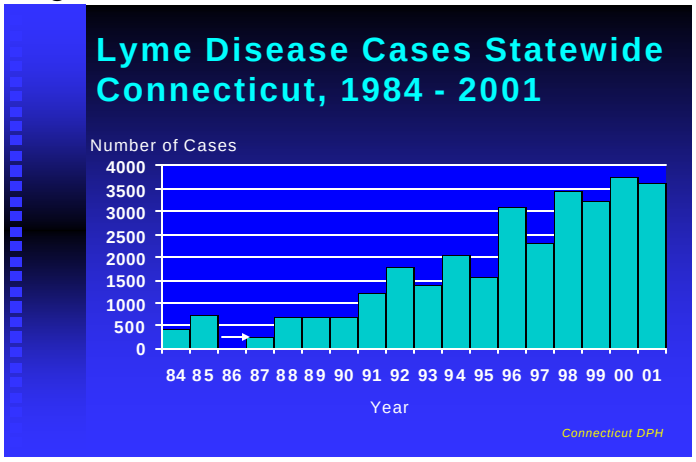
Andrea Poirot, RN, MPH has been hired to fill the Hepatitis C Coordinator position. In addition to overseeing the development of the viral hepatitis plan, she will be facilitating the integration of viral hepatitis prevention recommendations into existing public health infrastructure, working with local health departments, and serving as the agency's contact for hepatitis C and bloodborne pathogens issues. She can be reached at (860) 509-7900.

Lyme Disease - Connecticut, 2001

Lyme disease (LD) is the most commonly reported vector-borne disease in the United States (1). The Centers for Disease Control and Prevention (CDC) established national surveillance in 1982.

The Connecticut Department of Public Health (DPH) has conducted surveillance for LD since 1984, although the disease did not become officially reportable until July 1987 (Figure 1).

Figure 1:



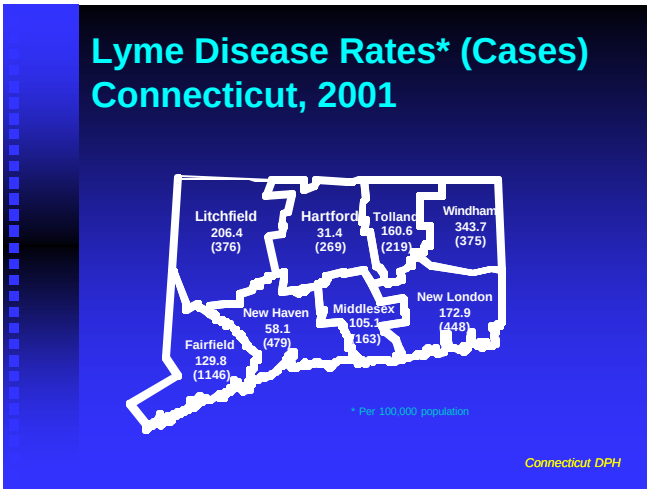
Of 10,818 LD reports received by the DPH in 2001, 3,597 (33%) met the national surveillance case definition (2). Of these, 2,220 (62%) were reports of erythema migrans (EM) only, 210 (6%) were reports of EM and a systemic manifestation of LD, and 1,167 (32%) had one or more systemic manifestations and a positive serologic test for antibody to *Borrelia burgdorferi*.

Of the 1,167 systemic LD cases, arthritic symptoms occurred in 820 (70%), neurologic manifestations occurred in 375 (32%), and cardiac complications occurred in 19 (2%). Cases may have had multiple LD symptoms.

The remaining 7,221 reports either did not meet the surveillance case definition (37%) or had no clinical information (30%).

In 2001, Connecticut had the highest reported rate of LD of any state (105.6 cases per 100,000 population). Windham County had the highest rate of LD with 343.7 cases per 100,000 population. In contrast, Hartford County had only 31.4 cases per 100,000 population, the lowest county rate in the state (Figure 2) .

Figure 2:



Of cases with known onset dates, 74% occurred during the months of June, July, and August. Children <10 years of age had the highest age specific incidence (142.9 cases per 100,000 population). The lowest rate occurred in those aged 20 through 29 years (55.5 cases per 100,000 population).

Editorial Note

In 1992, the DPH received funding from the CDC to enhance LD surveillance and education. The cooperative agreement was expanded to include LD prevention methods in 1998. Funding has been provided for a dedicated LD surveillance coordinator for the last decade.

Active LD surveillance was established in several communities in 1992: a 12-town area around Lyme and Litchfield County. In 1994, active surveillance was expanded to include the counties of Windham and Tolland. The towns of Weston and Westport were added to active surveillance in 1998 and the towns of Groton and Ledyard were added in 2001.

Prevention initiatives are currently operating in three local health districts: Ledge Light Health District, Torrington Area Health District, and Westport Weston Health District.

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The prevention sites will focus on tick reduction, LD prevention, and education. Through the use of integrated applications of methods to reduce tick abundance, promotion of personal protective practices, and education leading to early disease detection and treatment, tick-borne illnesses should be prevented (3).

Physicians in these areas are asked to assist the local health districts in their efforts to determine the true incidence of LD in their communities by agreeing to participate in active surveillance. Any physician in these health districts interested in participating in this important endeavor should contact the appropriate health district and ask to speak with the LD prevention coordinator.

The timely reporting of LD cases with clinical information is critical to the success of our ongoing efforts to assess the impact of this vector-borne disease. If reporting forms are needed, please contact the Epidemiology Program at (860) 509-7994 and request form PD23.

If you have questions concerning reporting of LD cases or the incidence of LD in your area of Connecticut, please contact Starr-Hope Ertel at (860) 509-7994.

Connecticut LD incidence rates by town and county can be found on the DPH Web site at: *www.dph.state.ct.us/BCH/infectiousdise/tickborne/lyme.htm.*

References

1. Lyme disease – United States, 1987 and 1988. *MMWR* 1989;38:668-72.
2. CDC. Case definition for infectious conditions under public health surveillance. MMWR 1997;46(No.RR-10):20-1.
3. Hayes EB, Maupin GO, Mount GA, Piesman J. Assessing the prevention effectiveness of local Lyme disease control. J Public Health Manag Pract 1999;5:84-92.