West Virginia Water Science Center Lyme Disease Protection Program
(Prepared 4/9/2014)

The purpose of this plan is to specify the minimum Occupational Safety and Health Program (Program) requirements for medical programs relating to Lyme Disease and provided to Department of the Interior (Department or DOI) and U.S. Geological Survey (Bureau or USGS) personnel engaged in activities that may affect their health. Current guidance on Occupational Medicine Programs can be found in the Department of the Interior Occupational Medicine Program Handbook.

References.

A. 5 CFR 339, Medical Determinations Related to Employability.

B. 5 CFR 630.403, Subpart D, Sick Leave, Supporting Evidence.

C. 29 CFR 1910.20, Access to Employee Exposure and Medical Records.

D. Occupational Safety and Health Act (OSHA) 1970-Public Law 91-596 Section 19, Federal Agency Safety and Health Program.

E. Executive Order 12196, Occupational Safety and Health Programs for Federal Employees.

F. 29 CFR 1960, Basic Program Elements for Federal Employees, Occupational Safety and Health Programs.

G. 485 DM, DOI Occupational Medicine Program Handbook.

Definitions.

A. Lyme Disease (LD). An infectious, seasonal disease named after Lyme, Connecticut, where it was identified in 1975. A corkscrew-shaped spirochetal microorganism transmitted by a host tick is responsible for the disease.

B. LD Testing Protocols. At the present time, testing protocols consist of an Immunoglobulin "M" (IgM) titer. Other laboratory tests include the Indirect Fluorescent Antibody (IFA), Enzyme-Linked Immunosorbent Assay (ELISA), and Immunoglobulin G (IgG). These protocols may change with improved diagnostic methods.

C. Public Health Service. The Public Health Service (PHS) is an agency within the Department of Health and Human Services that provides occupational health services to Federal employees.

D. Frequent or Prolonged Exposure. Constant or regular exposure in tick-infested areas during LD season.

E. Activities Presenting Exposure Potential. Activities that consist of work that is performed in tick infested areas (defined below). For example, an employee who works outdoors and walks on paved paths without any contact with shrubs, long grasses, leaf litter, etc., does not perform an activity that presents an exposure potential, whereas an employee who walks through or handles long grasses, shrubs, etc., does.

F. LD Occupational Risk. Categories are defined as High, Moderate, or Low/No Disease Risk, when associated with specific work tasks that are likely to expose the employee to LD vectors.

(1) High Disease Risk. – West Virginia is in a low to moderate risk area with a rare incidence of reported infected ticks – but with an annual incidence of 4.4 cases of Lyme disease, abundant deer population, and wooded areas. Our employees may spend many hours in wooded areas with large deer populations, and so for the purpose of this plan, our field employees are considered to be at high risk for Lyme disease.

(a) Perform outdoor work in areas of high or moderate geographic risk during LD transmission season (transmission peaks from April through July, when ticks are in nymph stages and actively feeding.) and engage in field work activities in which they are exposed to tick infested areas (tall grass or wooded areas, brushy undergrowth, leaf litter).

(b) Employees will be provided LD training, awareness and preventive techniques, and related information.

(2) Moderate Disease Risk.

(a) Perform outdoor work in areas of high or moderate risk during LD transmission season and are exposed to tick-infested habitat, but exposures are neither frequent nor prolonged.

(b) Employees will be provided LD training and education on awareness, prevention, and related information.

(3) Low or No Job Disease Risk.

(a) Perform work in areas of high or moderate risk during LD transmission season *but* have minimal or no exposure to tick infested habitat and/or work in areas of low geographic risk during LD transmission season.

G. Tick infested areas. Areas generally regarded to contain ticks; brushy, grassy (longer grasses) wooded areas, leaf litter, shrubs, etc.

H. LD season. Generally regarded as April through August in most areas. Consult the state health department for more specific information as required.

Occupational Medicine Program – General Requirements.

A. The USGS will establish an occupational medicine program that provides uniform and consistent medical evaluations for personnel who require USGS funded medical services. Such programs should be consistent with the guidance provided in the DOI Occupational Medicine Program Handbook.

B. All health services obtained for USGS personnel should be under the direction of a licensed physician and nursing services provided by a licensed professional nurse, qualified in occupational medicine and nursing, as applicable. Organizational Management is authorized to contract with local medical service providers for occupational health services. The U.S. Public Health Service's Division of Federal Employee Occupational Health should also be considered as a potential supplier of medical services.

LD Protection Program Requirements. The following requirements shall apply to all USGS personnel, contractors, and volunteers whose duties require them to be exposed to potential and/or known environments where LD may be present. The USGS policy is to ensure implementation of a comprehensive LD Prevention and Testing Program to minimize occupational exposure, to provide for the early detection of LD, and to provide for treatment of LD in USGS personnel.

A. The USGS will develop and implement a Bureau LD education and awareness (prevention) program to reduce the risk of LD in all USGS employees, Job Corps members, Youth Conservation Corps (YCC), volunteers, USGS family members, visitors, and others.

B. All USGS employees should be provided information and training, including risk-reduction methods and the signs and symptoms of LD.

C. USGS organizations in high or moderate geographic risk areas (see the CDC map at http://www.cdc.gov/ncidod/dvbid/tickmap.htm. [LD Vectors Map, U.S.]), will establish employee listings, based upon job risk (work tasks) to assess employee training, education, prevention, and vaccination requirements.

D. USGS organizations within specified Centers for Disease Control (CDC) "Lyme Disease geographic risk areas (high, moderate, or low)" will offer personnel LD educational information and teach preventive measures. At a minimum, the education and training program content shall include items 1-9 below, for high and moderate job risk

employees. Training may be modified to provide employee awareness training for other job hazard risk categories, visitors, and others as appropriate, to include:

(1) An explanation of LD and other vector-borne diseases.

(2) Signs and symptoms of LD. After being bitten by an infected tick, a small red rash develops in the skin. The rash commonly called Erythema Chronicum Migrans (ECM) is surrounded by faint rings and usually appears during the first 4 weeks. Sometimes the rash takes the appearance of blotchy or reddish area. In addition, in some individuals the rash may never appear. LD occurs in three distinct stages based on a chronological relationship to the original tick bite. However, it should be pointed out that there may be overlapping of stages and not all individuals may exhibit each phase. For example, an infected individual may progress directly from the first stage to the third stage, while in another, the third stage may constitute the first sign of the disease.

(a) First Stage. This is characterized by the presence of ECM, an expanding circular skin rash often accompanied by fatigue, fever, general malaise, enlarged lymph glands, muscle or joint pains, sore throat, cough, inflammation of the eyes, and even swelling of the genital organs in men. The ECM usually fades after 3-4 weeks but may recur for up to 1 year or more and often is accompanied by other clinical symptoms and signs such as muscle or joint pains. During this stage, laboratory tests may reveal an elevated antibody titer.

(b) Second Stage. After the initial tick bite, 1 to 4 months, the individual manifests symptoms and signs of nervous system involvement such as loss of control of one or both sides of the face and/or meningitis; heart problems such as dysfunction of the chambers of the heart; and migratory pain of muscle, joints, tendons, and bones, resulting in arthritis.

(c) Third Stage: This stage (arthritic stage) is characterized by recurrent attacks of arthritis. Within 2 months to 2 years after the onset of the disease, many individuals develop frank arthritis. The usual pattern is intermittent attacks of arthritis in the joints especially in the knees, elbows, ankles, wrists, hip, and jaw. The arthritis usually lasts for several months with symptom-free intervals. The arthritic stage may take years to resolve particularly if left untreated. CAUTION: If flu-like symptoms are developed after being bitten by a tick or after being in a tick infested area, consult a physician immediately. Timely diagnosis and treatment are very important in the prognosis of the disease. Immediate medical assistance should also be obtained if during the process of removing the tick, some of its embedded parts (usually the mouth) remain under the skin.

(3) Prevention of LD (includes avoidance of tick habitat, use of protective clothing and insect repellants, and self-inspections for ticks). Contracting LD represents a significant health risk. The determination of potential exposure to significant health risk rests with the individual and individual's supervisor and should be based on the guidance from local health officials before making occupational health decisions. Personnel shall take

precautions to minimize the chances of being bitten by ticks as the best defense against LD. The following precautions are recommended:

(a) Avoid tick habitats if possible by staying in the middle of trails to avoid ticks in overhanging grass and brush.

(b) Wear proper clothing including a hat, tucked-in shirt with snug collar and cuffs, long pants tucked into socks, and good shoes. Wear light-colored clothing so that dark colored ticks can be easily spotted and picked off.

(c) Use tick/insect repellents containing DEET or metheprim and apply to shoes, socks, cuffs, and pant legs. Deer ticks attach to feet and legs and then climb up.

(d) Inspect clothes for ticks often while in tick habitats. While in the field, have a companion inspect your back.

(e) Monitor yourself and your partner immediately after coming inside. Inspect clothes, head, and body. Have a companion check your back or use a mirror. Shower and wash clothes as soon as possible.

(4) Risks of contracting LD.

(5) Identification of ticks that cause disease.

(6) Tick removal procedures. After tick removal, report all tick bites as a safety incident in SMIS.

(7) Diagnostic procedures for LD.

(8) Life cycle of the tick as it relates to LD transmission.

E. Identify personnel at risk for LD based upon occupational exposure to LD vectors, vector (tick) habitat sites, and work tasks.

F. Provide mandatory training to personnel at high or moderate job risk of LD.

G. Detection. Early detection of LD is extremely important. The effects of LD can be minimized through prompt medical treatment. Personnel required to work in areas where LD-carrying ticks are present should be provided appropriate medical evaluation. The type of tests and their frequency should be determined by the Regional Medical Consultant of the PHS or a locally recognized Occupational Health Physician (OHP). A suggested letter for requesting medical monitoring is shown in Appendix 24-3, USGS Example of Medical Services Request.

H. Seasonal/Temporary Duty Personnel. Seasonal and temporary duty assigned employees (i.e., summer students and volunteers) in geographic areas of high or moderate

LD risk, must be evaluated for inclusion into the program during the disease transmission season. Factors to consider include the frequency and duration of potential exposure to tick-infested habitat and other criteria considered for permanent duty employees in these areas. Training for these employees will include LD awareness and risk reduction measures. These employees should seek prompt diagnosis and treatment by health care providers if signs or symptoms of LD develop despite job risk category.

I. LD Testing and Payment. The method of payment for required LD testing shall be determined by organizational management. If a positive diagnosis of LD is attributed to occupational exposure, payment of any additional medical costs will be governed by the provisions of the Federal Employees Compensation Act (FECA). The burden of proof in establishing the work relatedness of the exposure and subsequent disease shall be the responsibility of the employee, per FECA/Office of Workers' Compensation Program (OWCP) regulations. Medical costs for treatment incurred by the employee for nonoccupationally related cases of LD will be the responsibility of the employee.

Responsibilities.

A. Bureau Safety Manager/Industrial Hygienist.

(1) Provides Bureau-wide oversight and direction for the LD program.

(2) Maintains liaison with and providing program summary data to the Regional Safety Manager.

(3) Conducts reviews of the USGS, Regional Headquarters, and regional science program LD programs, as applicable.

B. Regional Safety Manager.

(1) Provides region-wide program direction and oversight for the administration of an appropriate LD Protection Program, serving as the focal point for program development and implementation and providing technical advice to Regional Safety Officers and Collateral Duty Safety Program Coordinators.

(2) Assists Regional Headquarters and science programs in developing Interagency Agreements (IAG's) with appropriate contractors for the provision of medical monitoring requirements and services. A suggested scope of work is provided in Appendix 24-1, USGS Sample Scope of Work for Medical Services Provider.

(3) Evaluates effectiveness of Regional Headquarter and science program LD program and makes recommendations for improvement as part of the Program.

C. Regional Safety Officers.

(1) Oversee the administration of an appropriate LD program for regional science program field locations.

(2) Serve as the focal point for the implementation of the regional science LD program and provide technical advice to field level Collateral Duty Safety Program Coordinators (CDSPC's) and management.

(3) Assist regional field location CDSPC's in developing Interagency Agreements (IAG's) with appropriate contractors for the provision of medical monitoring requirements and services. A suggested scope of work is provided in Appendix 24-1, USGS Sample Scope of Work for Medical Services Provider. Regional field-level organizations are encouraged to use Public Health Service Offices for such services although local laboratory services may be used when it is cost effective.

D. Collateral Duty Safety Program Coordinators (CDSPC's).

(1) Assist organizational management and supervisors in implementation of the LD program and training and education component.

(2) Provide assistance and guidance to organizational managers and supervisors and coordinate with medical care providers, Regional Safety Officer or Manager, and Public Health Service Consultants as necessary to determine employee risk.

E. Organizational Managers and Supervisors.

(1) Inform personnel/volunteers instruction and education on all aspects of LD program.

(2) Identify personal protective clothing and equipment (i.e., gloves, insect repellants, and tick removal instruments) to prevent or reduce the job hazard of tick vector disease transmission. Personnel will use protective clothing and equipment provided.

(3) Determine if personnel in the organization are at risk of LD. The CDC map located at http://www.cdc.gov/ncidod/dvbid/lime/tickmap.htm illustrates established and reported distribution of LD vectors by county in the United States. This map should be used to assist in the determination of personnel risk.

(4) Work in the high or moderate geographic risk areas must be as identified by the CDC, or appropriate state, county, or local health agencies. State health departments having local advisory jurisdiction over LD and illness should be contacted regarding concern of additional geographical regions or risk areas not defined or generalized (counties, etc.) in the CDC map. Addition of geographical areas by local USGS organizational sites not currently identified by the CDC must be based on this consultation.

(5) Maintain personnel education and awareness training records, risk categories, vaccination consent forms and immunization records in the Personnel Medical Records

File in accordance with the Privacy Act and other applicable regulations. These records must be transferred at the same time as Official Personnel Files, when a change of duty station occurs. Contact the servicing Human Resources Office for assistance.

(6) Provide personnel medical records to personnel and to others with written consent of the employee upon request, in accordance with 29 CFR1910.1020.

F. Personnel.

(1) Participate in all required training programs.

(2) Report all tick bites in SMIS promptly as a safety incident.

(3) Seek prompt diagnosis and treatment by health care providers if signs or symptoms of LD develop despite job risk category.

Additional Resources.

A. Centers for Disease Control (CDC) and Prevention. Prevention of LD through active Immunization: recommendations for the Use of Lyme Disease Vaccine, Recommendations of the Advisory Committee on Immunization Practices (ACIP). Morbidity and Mortality Weekly Report (MMWR); 1999:8 (RR07): 1-7 (June 4, 1999).

B. Point Paper recommendations for LD Risk Management in the National Park Service, by Commander George H. Vaughan, Jr., Southeast Region Public Health Service Consultant, June 1999.

C. http://www.cdc.gov/ncidod/dvbid/lyme_QA.htm(LD questions/answers information).

D. OSHA Hazard Information Bulletin on LD (HIB 00-4-20), http://www.osha-slc.gov/dts/hib/hib_data/hib20000420.pdf

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