Section: Medical Exposure Control Plan – Information Fact Sheets
Subject: HEPATITIS-B
Section #: 383.05
Issue Date: March 21, 2011
Revision Date:
Approved By: Michael Lozano, Jr., M.D., HCFR Medical Director

1. Identification
    a. Acute viral hepatitis is a common, worldwide disease that has different causes; each type shares clinical, biochemical, and morphologic features. Liver infections caused by non-hepatitis viruses (e.g., Epstein-Barr virus, yellow fever virus, and cytomegalovirus) generally are not termed acute viral hepatitis. At least 5 specific viruses appear to be responsible.
    b. HBV is the second most common cause of acute viral hepatitis. Prior unrecognized infection is common but is much less widespread than with HAV. HBV is often transmitted parenterally, typically by contaminated blood or blood products. Routine screening of donor blood for hepatitis B surface antigen (HBsAg) has nearly eliminated the previously common post transfusion transmission, but transmission through needles shared by drug users remains common. Risk of HBV is increased for patients in renal dialysis and oncology units and for hospital personnel in contact with blood. The virus may be spread through contact with other body fluids (e.g., between sex partners, both heterosexual and homosexual; in closed institutions, such as mental health institutions and prisons), but infectivity is far lower than for HAV, and the means of transmission is often unknown. The role of insect bites in transmission is unclear. Many cases of acute hepatitis B occur sporadically without a known source.
    c. HBV, for unknown reasons, is sometimes associated with several primarily extrahepatic disorders, including polyarteritis nodosa and other connective tissue diseases, membranous glomerulonephritis, and essential mixed cryoglobulinemia. The pathogenic role of HBV in these disorders is unclear, but autoimmune mechanisms are suggested.
    d. Chronic HBV infection is found in 0.5% of adults in North America. HBV may be the cause of 80% of hepatocellular carcinomas worldwide. Diagnosis is confirmed with serologic tests that include:
        i. Hepatitis surface antigen (HBsAg) and antibody to HBsAg.
        ii. Hepatitis B core antigen (HBcAg) and antibody to HBcAg.
        iii. Hepatitis B e antigen (HBeAg) and antibody to HBeAg.
    e. HBsAg can be detected in the serum from several weeks before onset of symptoms, and is present for a variable period after onset. The presence of anti-HBc in the serum indicates HBV infectivity.

2. Infectious Agents
    a. HBV is the most thoroughly characterized and complex hepatitis virus. The infective particle consists of a viral core plus an outer surface coat. The core contains circular double-stranded DNA and DNA polymerase, and it replicates within the nuclei of infected hepatocytes. A surface coat is added in the cytoplasm and, for unknown reasons, is produced in great excess. HBV, a hepadnavirus, is partially double stranded DNA virus. There are currently four (4) different subtypes of HBV. There is no difference in clinical management, vaccine protection, or clinical presentation in the four (4) subtypes.

3. Susceptibility
    a. Susceptibility is general. The disease is usually milder in children and infants than adults. Protective immunity follows infection if antibody to HBsAg develops and HBsAg is negative.

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4. Mode of Transmission
    a. HBsAg has been found in virtually all body secretions and excretions. The only body fluids that have been shown to be infectious are blood, saliva, semen, and vaginal fluids.

5. Incubation Period
    a. Usually 45 to 180 days. The average is 60 to 90 days. The HBsAg can show up as early as two (2) weeks from exposure to as long as 6 to 9 months. The incubation period is related to the mode of exposure and viral load.

6. Period of Communicability
    a. All persons who are HBsAg positive are potentially infectious.

7. Isolation
    a. Universal precautions should be utilized. Prevent exposure to blood and blood product exposure to percutaneous and permucosal routes.

8. Exposure Management
    a. Determination of a blood exposure should be reported. The source patient can be screened for HBV and HIV at the time of blood exposure. The member will then be screened for baseline HBsAg antigens and HBV immunity.

9. Vaccination
    a. HBV vaccine / Engerix - B / Recombivax - HB

10. References
    a. Professional Guide to Diseases, Sixth Edition 1998, Springhouse Corp., Springhouse, Penn.
    b. Control of Communicable Diseases Manual, Sixteenth Edition 1995, American Public Health Assoc., Washington, D.C.
    c. Communicable Disease Information, Seattle – King County Department of Public Health web site, www.metroke.gov/health/prevent/hepa.htm
    d. Infectious Diseases, Armstrong & Cohen, Mosby 1999, Volumes 1 & 2.