

Hepatitis B

Summary

Hepatitis B is a contagious liver disease caused by the Hepatitis B Virus (HBV). It ranges in severity from a mild illness lasting a few weeks to a serious, lifelong illness that attacks the liver. Hepatitis B virus (HBV) causes acute, chronic, and perinatal hepatitis B.

Hepatitis B is transmitted when blood, semen, or another body fluid from a person infected with the HBV enters the body of someone who is not infected. Approximately 90-95% of adults infected with acute hepatitis B will clear their infection without treatment, while the remaining 5–10% will develop chronic hepatitis B. However, infants and children are significantly more likely to develop chronic hepatitis B.

Agent

Hepatitis B Virus (HBV) is an enveloped DNA virus. The main component of the viral particle is an outer envelope protein containing surface antigen (HBsAg) and an inner nucleocapsid consisting of core antigen (anti-HBc). HBV can survive outside of the body at least seven days.

Transmission

Reservoir:

Humans. HBV has also been transmitted experimentally to chimpanzees.

Mode of transmission:

HBV is transmitted through activities that involve percutaneous (i.e., puncture through the skin) or mucosal contact with infectious blood or body fluids (e.g., semen). More commonly, a person can get HBV infection through:

- Birth to an HBV-infected mother
- Sexual contact with a person infected with HBV
- Shared use of needles, syringes, or other drug-preparation equipment
- Direct contact with blood or open sores of a person with hepatitis B
- Needle stick injuries in health care settings

Less commonly, a person can also get Hepatitis B virus infection through:

- Shared personal care items, such as razors or toothbrushes
- Receipt of tattoos in non-professional settings
- Receipt of long-term hemodialysis

Period of communicability:

All people who are positive for HBsAg and/or HBV DNA are potentially infectious. The infectivity of chronically infected individuals varies from high (HBeAg-positive, HBV-DNA above 10^5 copies/ml) to modest (anti-HBe-positive).

Clinical Disease

Incubation period:

Average of 12-13 weeks after exposure; range 2 to 6 months.

Illness:

Acute infection ranges from asymptomatic or mild disease to severe and rapidly progressing hepatitis. Symptoms include fever, fatigue, loss of appetite, nausea, vomiting, abdominal pain, dark urine, clay-colored stool, joint pain, and jaundice. Symptoms typically last for several weeks but can persist for up to 6 months. Most chronic Hepatitis B infections remain asymptomatic until the onset of cirrhosis or end-stage liver disease.

Diagnosis

Clinical Criteria:

Acute and Chronic Hepatitis B:

In the absence of a more likely, alternative diagnosis, acute onset or new detection of at least one of the following

- (a) Jaundice OR
- (b) Peak elevated total bilirubin level ≥ 3.0 mg/dl OR
- (c) Peak elevated serum alanine aminotransferase (ALT) level >200 IU/L

Perinatal Hepatitis B:

Perinatal HBV infection in a child ≤ 24 months of age may range from asymptomatic to severe and rapidly progressing hepatitis.

Treatment

For acute infections, no medication is available; treatment is supportive.

For chronic infections, there are several antiviral and immune modulator medications to slow viral replication, improve immune responses, and limit liver damage. Persons with chronic HBV infection require linkage to care with regular monitoring to prevent liver damage and/or hepatocellular carcinoma.

Surveillance

Laboratory criteria:

Acute Hepatitis B:

Confirmed:

Tier 1

- Detection of HBsAg AND detection of IgM anti-HBc, OR
- Detection of HBeAg AND detection of IgM anti-HBc, OR
- Detection of HBV DNA AND detection of IgM anti-HBc, OR
- Detection of HBsAg, HBeAg, or HBV DNA within 12 months (365 days) of a negative HBsAg test result (i.e., HBsAg seroconversion)

Tier 2

- Detection of HBV surface antigen (HBsAg) AND IgM antibody to HBV core antigen (IgM anti-HBc) test not done or result not available, OR
- Detection of HBV DNA AND IgM anti-HBc test not done or result not available

Probable:

- Detection of IgM anti-HBc, AND
- Negative or test not done for HBsAg, HBV DNA, or HBeAg

Chronic Hepatitis B:

Confirmed:

- Detection of HBsAg in two clinical specimens taken ≥ 6 months apart, OR
- Detection of HBeAg in two clinical specimens taken ≥ 6 months apart, OR
- Detection of [HBsAg OR HBeAg] AND total anti-HBc, OR
- Detection of HBsAg AND HBeAg, OR
- Detection of HBV DNA

Probable:

- Detection of [HBsAg OR HBeAg] AND IgM anti-HBc test negative, not done, or result not available.

Perinatal Hepatitis B:

- Positive HBsAg test (only if at least 4 weeks after last dose of Hep B vaccine) OR
- Positive HBeAg test OR
- Detection of HBV DNA

Case Definition:

Confirmed Acute Hepatitis B:

- Meets Tier 1 confirmatory laboratory evidence of acute HBV infection, OR
- Meets clinical criteria AND Tier 2 confirmatory laboratory evidence of acute HBV infection

Probable Acute Hepatitis B:

- Meets clinical criteria **AND** probable laboratory evidence of acute HBV infection

Confirmed Chronic Hepatitis B:

- Meets confirmatory laboratory evidence of chronic HBV infection

Probable Chronic Hepatitis B:

- Meets probable laboratory evidence of chronic HBV infection

Probable Perinatal Hepatitis B:

Child born in the U.S. who is

- Positive for HBsAg at ≥ 1 month of age and ≤ 24 months of age OR
- Positive for HBeAg or HBV DNA at ≥ 9 months of age and ≤ 24 months of age AND
- Epidemiologic Linkage: Unknown

Confirmed Perinatal Hepatitis B:

Child born in the U.S. who is

- Positive for HBsAg at ≥ 1 month of age and ≤ 24 months of age OR
- Positive for HBeAg or HBV DNA at ≥ 9 months of age and ≤ 24 months of age AND
- Epidemiologic Linkage: Born to an HBV-infected mother

Reporting:

Report all suspected or confirmed cases of Hepatitis B within 24 hours to the New Mexico Department of Health (NMDOH) at 1-833-796-8773. Required information includes: patient's name, age, sex, race, ethnicity, home address, home phone number, occupation, and health care provider. Information should also be entered into NM-EDSS per established procedures.

Case Investigation:

- 1) When 2 or more cases occur in association with some common exposure, search for additional cases. Create a contact listing and follow-up with the listed contacts.
- 2) Provide education on avoiding further exposures and to ensure proper medical care is obtained and precautions taken if symptoms develop.
 - a. If cases are related to a health care facility, institute strict aseptic techniques. If a plasma derivative such as antihemophilic factor, fibrinogen, pooled plasma or thrombin is implicated, withdraw the lot from use and trace all recipients of the same lot in a search for additional cases.
- 3) Children born to HBV-infected mothers should be tested, as follows:
 - a. HBsAg at 1 month of age or greater, or
 - b. HBeAg or HBV DNA at 9 months to 24 months of age
- 4) For additional guidance on persons for whom HBV testing is recommended, refer to the CDC's Clinical Testing and Diagnosis for Hepatitis B webpage (<https://www.cdc.gov/hepatitis-b/hcp/diagnosis-testing/index.html>)
- 5) Report the final disposition of each contact investigated.

Control Measures

1. Case management

- 1.1. Isolation: universal precautions to prevent exposure to blood and body fluids.

- 1.2. Concurrent disinfection: Of equipment contaminated with blood or infectious body fluids.
- 1.3. Quarantine: Not applicable. Persons should not be excluded from childcare centers.
- 1.4. Prophylaxis: Not applicable.
2. Contact management
 - 2.1. Prophylaxis: Immunization of contacts with hepatitis B vaccine as soon as possible or within 24 hours. In some circumstances, hepatitis B immune globulin (HBIG) can be administered in addition.

Further guidance on post-exposure prophylaxis Hepatitis B can be found at https://www.cdc.gov/hepatitis-b/hcp/clinical-care/?CDC_AAref_Val=https://www.cdc.gov/hepatitis/hbv/pep.html

3. Prevention
 - 3.1. Prevent perinatal HBV transmission by screening all pregnant women for HBsAg and providing immune-prophylaxis to infants of HBV-infected women;
 - 3.2. Routine immunization:
 - 3.2.1. All infants;
 - 3.2.2. All previously unvaccinated children aged less than 19 years old
 - 3.2.3. All previously unvaccinated adults aged 19-60 years old
 - 3.2.4. All previously unvaccinated adults 60 years and older who have hepatitis B risk factors
 - 3.2.5. Adults 60 years and older without known hepatitis B risk factors may also be vaccinated

More information on Hepatitis B vaccination can be found at <https://www.cdc.gov/hepatitis-b/hcp/vaccine-administration/index.html>

4. Outbreak
 - 4.1. Outbreak Definition: The occurrence of ≥ 2 acute cases of Hepatitis B in association with a common exposure is considered an outbreak.
 - 4.2. Notify the NMDOH immediately at 1-833-796-8773.
 - 4.3. Further guidance on investigating Hepatitis B outbreak cases that are suspected to be related to healthcare delivery can be found at: www.cdc.gov/hepatitis/Outbreaks/index.html

References

American Academy of Pediatrics. (2024). Hepatitis B. In: Kimberlin DW et al eds. *Red Book: Report of the Committee on Infectious Disease*, 33rd ed. Itasca, IL: American Academy of Pediatrics.

Centers for Disease Control and Prevention. (2025, January 31). *Clinical care of hepatitis B*. Centers for Disease Control and Prevention. https://www.cdc.gov/hepatitis-b/hcp/clinical-care/?CDC_AAref_Val=https%3A%2F%2Fwww.cdc.gov%2Fhepatitis%2Fhbv%2Fpep.html

Centers for Disease Control and Prevention. (2024, February 28). *Hepatitis B, acute and chronic 2024 case definition*. Centers for Disease Control and Prevention. <https://ndc.services.cdc.gov/case-definitions/hepatitis-b-acute-and-chronic-2024/>

Centers for Disease Control and Prevention. (2025b, January 31). *Hepatitis B vaccine administration*. Centers for Disease Control and Prevention. <https://www.cdc.gov/hepatitis-b/hcp/vaccine-administration/index.html>

Centers for Disease Control and Prevention. (2024b, February 29). *Viral Hepatitis Surveillance and Case Management*. Centers for Disease Control and Prevention. [Viral Hepatitis Surveillance and Case Management | Viral Hepatitis | CDC](#)

Hepatitis B Foundation | Baruch S. Blumberg Institute. (n.d.). *Transmission of hepatitis B*. Hepatitis B Foundation. <https://www.hepb.org/prevention-and-diagnosis/transmission/>

Heymann, D., ed., *Control of Communicable Diseases Manual*, 21st edition. Washington, DC, American Public Health Association, 2022.

See Hepatitis B Fact Sheets ([English](#)) ([Spanish](#)).