



# HEPATITIS, TYPE B, PERINATAL

(See also HEPATITIS, TYPE B).

1. **Agent:** Hepatitis B virus (HBV).
2. **Identification:** California law (*Health and Safety Code*, Sections 125080–125100) requires that all prenatal patients be screened for hepatitis B surface antigen (HBsAg). Women with unknown HBsAg status at delivery should be tested at time of hospital admission. If a pregnant woman is screened once during her pregnancy and is shown to be HBsAg-negative, but she develops a hepatitis-like illness or has new risk factors for hepatitis B, she should be screened again prior to delivery.
  - a. **Symptoms:** While acute cases of hepatitis B can occur in the prenatal period, most HBsAg-positive prenatal patients will be asymptomatic chronic carriers and identified by their laboratory test only. Infants infected are generally asymptomatic.
  - b. **Differential Diagnosis:** Other viral, chemical, and other causes of hepatitis.
  - c. **Diagnosis:** Positive HBsAg test. Maternal anti-HBc will be present in the infant's blood and does not indicate maternal-infant transmission.
3. **Incubation:** From 45-180 days.
4. **Reservoir:** Human.
5. **Source:** For infants, primarily maternal blood or body fluids.
6. **Transmission:** By parenteral inoculation or mucosal membrane exposure of infant to maternal blood or body fluid. Exposure usually occurs during the birth process, since the hepatitis B virus does not cross the placental barrier intact. Vaginal or caesarean deliveries have similar transmission risk.
7. **Communicability:** Maternal blood or body fluids are potentially infectious. Unless infected in utero, infants are usually non-infectious at birth since they will be incubating the disease.
8. **Specific Treatment:** Treatment for chronic hepatitis B infection is available for some patients who meet clinical criteria. Prevention of maternal-infant transmission through timely immunization of infant with HBIG and vaccine is to be stressed.
  - a. Infants of HBsAg-positive mothers: Intramuscular injection (IM) of hepatitis B immune globulin (HBIG) to be given within 12 hours of birth. Effectiveness of HBIG more than 7 days after birth exposure is unknown; delay will compromise effectiveness. Hepatitis B vaccine should be given (IM) at same time as HBIG at a different site; subsequent vaccine doses should be administered according to Advisory Committee on Immunization Practices vaccination recommendations.

For premature infants weighing less 2,000 grams, the initial hepatitis B vaccine dose should not be counted towards completion of the hepatitis B series and three additional doses of hepatitis B vaccine should be administered beginning when the infant is age 1 month.

Infants who have completed the hepatitis B vaccine series at age 6-8 months should be serologically screened for HBsAg and anti-HBs 3-9 months after completion of the series. If the series is completed at an older age due to a delayed schedule, the optimal testing time is 1-2 months after the final dose of hepatitis B vaccine.
  - b. Infants born with unknown maternal HBsAg status: Maternal HBsAg testing must be done promptly. If results are not available, initiate treatment with the first dose of hepatitis B vaccine within 12 hours of birth. HBIG administration is dependent on maternal HBsAg status and should be administered ASAP and within 7 days of birth if maternal status found to be HBsAg positive. Premature infants weighing less than 2,000 grams whose mother's HBsAg status is unknown should receive both hepatitis B vaccine and HBIG within 12 hours of birth unless mother's HBsAg test



result is available within 12 hours. Subsequent vaccine doses should be administered according to Advisory Committee on Immunization Practices vaccination recommendations.

## REPORTING PROCEDURES

### 1. **Reportable.** (Title 17, Section 2500, *California Code of Regulations*).

- a. The Perinatal Hepatitis B Prevention Unit (PHBPU) of the Immunization Program will case manage infants born to HBsAg positive mothers, as well as sexual and household contacts of the women.
- b. Appropriate testing and hepatitis B vaccination will be arranged through private and public providers.

### 2. **Report Form:**

- a. PHBPU staff will complete the **CONFIDENTIAL HBsAg+ CASE/HOUSEHOLD MANAGEMENT REPORT (IMM 313)**.
- b. PHBPU staff will complete the Perinatal Hepatitis B Reporting forms (Viral Hepatitis Report Form page 1 and Perinatal Hepatitis B Virus Infection Reporting form page 5) for HBsAg positive infants ages >1-24 months of age who are born in the United States to HBsAg positive mothers. All such cases must be entered in VCMR as perinatal hepatitis B virus infections; appropriate investigation form must be submitted to California State Department Immunization Branch.
- c. If the mother is identified as an acute case of hepatitis B, then additional follow up as described in the Hepatitis B section will be conducted by the health district.

### 3. **Epidemiologic Data:**

The majority of women identified as HBsAg-positive as part of their routine prenatal laboratory work-up will be hepatitis B carriers. Epidemiologic data should be obtained to evaluate risk of transmission to infant and sexual and household contacts.

- a. Estimated delivery date and anticipated hospital of delivery.
- b. Anticipated provider of pediatric care.
- c. Line listing of contacts (sexual and/or household) to be evaluated for susceptibility and need for vaccination.
- d. Obtain laboratory tests:
  - i. Household contact(s) testing for susceptibility (HBsAg, anti-HBs, anti-HBc).
  - ii. Infant post-vaccination testing for vaccine response (anti-HBs and HBsAg).

## CONTROL OF CASE, CONTACTS & CARRIERS

Investigate infant immediately to ensure receipt of HBIG and HBV vaccine.

**CASE:** No restrictions. Follow-up of newborn is public health priority. Without appropriate protection, up to 90% of newborns will be infected; if infected, 90% become carriers.

Infants who have completed the hepatitis B vaccine series at age 6-8 months should be serologically screened for HBsAg and anti-HBs 3-9 months after completion of the series to determine the success of immunoprophylaxis, and, in the case of failure, to identify HBV carriers or infants who may require revaccination. If the series is completed at an older age due to a delayed schedule, the optimal testing time is 1-2 months after the final dose of hepatitis B vaccine. Report infant cases of hepatitis B as perinatal hepatitis B virus infection

**CONTACTS:** Investigate remaining contacts within 2 weeks: persons exposed to blood or body fluid of an infected person, regular sexual partners, and long-term household contacts to a carrier of hepatitis B. "Long-term" contacts are defined as individuals with anticipated continuous household exposure for greater than one year (often limited to nuclear family only). Report new cases of hepatitis B as chronic unless symptoms and LFTs suggest acute episode.

1. No restrictions.



2. Regular sexual partners are at increased risk. Laboratory testing (HBsAg, anti-HBs, anti-HBc) should be obtained to evaluate susceptibility. If susceptible, hepatitis B vaccine should be administered to the contact.
3. Long-term household contacts of all ages are at increased risk. History of HBV vaccination or serologic screening (HBsAg, anti-HBs, anti-HBc) should be obtained on all contacts, including children, to evaluate susceptibility. If susceptible, hepatitis B vaccine should be administered to the contact.
4. Regular sexual partners and long-term household contacts that firmly refuse screening for susceptibility should be vaccinated without screening.
5. Vaccine dosage depends on the age and vaccine manufacturer. Refer to the vaccine package insert or B-71 ("Recommendations for Use and Storage of Common Immunobiologics and Other Prophylactic Agents").

#### PREVENTION-EDUCATION

1. Instruct HBsAg-positive prenatal patient on the need for her newborn to be protected against hepatitis B by immunoprophylaxis (hepatitis B vaccine and HBIG) given at birth and followed by subsequent doses of hepatitis B vaccine.
2. Advise infected women on the need to be evaluated for possible liver disease.
3. Instruct HBsAg-positive patient on the sanitary disposal of blood and other body secretions. Advise the patient that sharing articles contaminated with blood (e.g., needles, syringes, razors, and toothbrushes) may transmit the disease.
4. Advise the patient that all sexual partners are at increased risk of infection; condoms may reduce their risk. Regular sexual contacts should be evaluated for susceptibility and vaccinated if susceptible.
5. Advise that long-term household contacts are at increased risk of infection. Contacts should

be evaluated for susceptibility and vaccinated if susceptible.

6. Breast-feeding is not contraindicated for infants undergoing hepatitis vaccination.
7. Hepatitis B vaccine is a routine childhood immunization with the series beginning with the birth dose.
8. Advise that a history of any viral hepatitis excludes participation in blood donor programs, under current State regulations.

#### DIAGNOSTIC PROCEDURES

Clinical and epidemiological history required to aid laboratory in test(s) selection.

#### Serology:

**Container:** Serum separator tube (SST, a red-gray top vacutainer tube).

**Laboratory Form:** Electronic online request linked to the Public Health Laboratory.

#### Examination Requested:

1. For perinatal patients: The online request must clearly state prenatal specimen. The test to be performed: HBsAg.
2. For sexual or household contacts: The online request must clearly state "Hepatitis B Contact - Perinatal." The test to be performed on contacts: anti-HBc, anti-HBs and HBsAg.
3. For post-vaccination of infants: The online request must clearly state: "Hepatitis B Post-vaccination of infant". The tests to be performed are anti-HBs and HBsAg.

**Material:** Whole clotted blood.

**Amount:** 5-7 ml.

**Storage:** Refrigerate.