

# Preventing Chronic Hepatitis B in Children

## Guidelines for Pediatric Providers

February 2024



### BACKGROUND

As many as 2.2 million Americans are chronically infected with hepatitis B virus (HBV), but up to 60% may be unaware of their infection.<sup>1</sup> Chronic HBV infection has a disproportionate impact on some populations, specifically Asians and Pacific Islanders (API), who have the highest rate of chronic hepatitis B in the United States.<sup>2</sup> HBV infection acquired via parent-to-child transmission at birth is associated with a 90% risk for chronic infection if post-exposure prophylaxis is not given.<sup>3</sup> In addition, 25-50% of children who are not infected at birth but are infected during early childhood by a household contact will progress to chronic infection.<sup>3</sup> Chronic HBV infection carries a 25% risk of death from liver failure or hepatocellular carcinoma (HCC).<sup>3</sup> Pediatric providers should be aware of at-risk children because chronic HBV infection in children is typically asymptomatic and blood tests for liver enzymes may be normal. Appropriate screening, postexposure prophylaxis and vaccination are the keys to prevention.

### OBTAINING MEDICAL HISTORY

- **Obstetric providers are mandated to test pregnant patients for hepatitis B surface antigen (HBsAg) and to report HBV infections to their local health department.**
- A copy of the laboratory report documenting the patient's HBsAg status should be available at the birth hospital, and prenatal HBsAg results should be reviewed at the time of the infant's birth.

### ENSURE POST-EXPOSURE PROPHYLAXIS AT BIRTH FOR AT-RISK INFANTS

- **For infants of HBsAg-positive birthing patients:** Administer hepatitis B vaccine and hepatitis B immune globulin (HBIG) within 12 hours of birth at different injection sites (e.g., separate limbs).
- **For infants of birthing patients whose HBsAg status is unknown:**
  - For infants weighing <2 kg – administer hepatitis B vaccine and HBIG within 12 hours of birth.
  - For infants weighing ≥2 kg – administer hepatitis B vaccine within 12 hours of birth. If the birthing patient is found to be HBsAg-positive, administer HBIG as soon as possible and no later than 7 days after birth; discharged infants should be recalled and given HBIG.
- **For infants of HBsAg-negative birthing parents:** Administer hepatitis B vaccine within 24 hours of birth to all infants weighing ≥2 kg. If the infant weighs <2kg at birth, administer hepatitis B vaccine at chronological age 1 month or hospital discharge (whichever is earlier, even if weight is still <2kg).
- **For additional information:** please visit the [CDC Perinatal Hepatitis B Prevention Program](#) or the [CDPH Perinatal Hepatitis B Prevention Program](#) websites.

<sup>1</sup> Schillie S, Vellozzi C, Reingold A, et al. Prevention of Hepatitis B Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices. *MMWR Recomm Rep* 2018;67(No. RR-1):1–31. DOI: <http://dx.doi.org/10.15585/mmwr.rr6701a1>

<sup>2</sup> Centers for Disease Control and Prevention. *Viral Hepatitis Surveillance Report – United States, 2019*. <https://www.cdc.gov/hepatitis/statistics/2019surveillance/index.htm>. Published May 2021.

<sup>3</sup> Centers for Disease Control and Prevention. *Epidemiology and Prevention of Vaccine-Preventable Diseases*. Hall E., Wodi A.P., Hamborsky J., et al., eds. 14th ed. Washington, D.C. Public Health Foundation, 2021.

### FOLLOW-UP OF INFANTS BORN TO HBSAG-POSITIVE BIRTHING PARENTS

- Contact the [local health department](#) to ensure that these infants are followed by their Perinatal Hepatitis B Prevention Program.
- **Make sure that the infant completes the hepatitis B vaccine series on schedule**
  - For additional information, please see the [current MMWR Recommendations](#).
- **Document vaccine administration and provide the Hepatitis B Vaccine Information Statement (VIS).**
  - Providers are required to enter all vaccine doses into the California Immunization Registry.
- **Educate HBsAg-positive parents that their test results** indicate that they have chronic HBV infection and that they should follow up with their primary care provider or a liver specialist.
- **Advise HBsAg-positive birthing parents that breastfeeding is safe** once their infant has received HBIG and hepatitis B vaccine at birth.
- **Ask about household contacts and siblings.** Refer close contacts and family members for HBV screening to determine if they are chronically infected with HBV or are unprotected against HBV infection and should be vaccinated.
- **Perform post-vaccination serologic testing**
  - HBsAg and anti-HBs testing should be performed 1-2 months after completion of the vaccine series, but not before 9 months of age.
  - If the vaccine series has been completed on schedule, testing should occur at 9-12 months of age. Testing performed at 13-18 months of age is still acceptable, but there may be a higher occurrence of falsely negative anti-HBs results.
  - Testing **should not** be performed before age 9 months to avoid detection of passive anti-HBs from HBIG administered at birth and to maximize the likelihood of detecting late HBV infection. If testing is done before age 9 months, it will need to be repeated.

### INTERPRETING POST-VACCINATION SEROLOGIC TESTING RESULTS

- HBsAg-negative and anti-HBs positive (anti-HBs $\geq$ 10 mIU/mL): These infants are not infected with hepatitis B and are immune to (protected against) future exposures. Results should be reported to the local health department
- HBsAg-negative and anti-HBs negative (anti-HBs <10 mIU/mL): These infants are not infected with hepatitis B but are not immune to (protected against) hepatitis B. Administer an additional dose of hepatitis B vaccine and repeat post vaccination serologic testing 1-2 months after that dose of vaccine is given. If the infant remains susceptible (HBsAg negative and anti-HBs <10 mIU/mL), administer the remaining two doses of the second three-dose vaccine series and retest 1-2 months after the third dose of vaccine has been given.
- HBsAg-positive and anti-HBs negative (anti-HBs <10 mIU/mL): These infants are infected with Hepatitis B. Ensure that HBsAg-positive infants are referred for appropriate medical follow-up and are reported to their local health department as perinatal hepatitis B cases.

### FOLLOW-UP OF INFANTS BORN TO BIRTHING PATIENTS WITH UNKNOWN HBSAG STATUS

- If it is not possible to determine the birthing parent's HBsAg status (e.g., when a parent or person with lawful custody safely surrenders an infant confidentially after birth), the vaccine series should be completed according to the recommended schedule for infants born to HBsAg-positive birthing parents.

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- These infants should also receive post-vaccination serologic testing at age 9–12 months according to the testing recommendations outlined for infants born to HBsAg-positive birthing parents.

### HEPATITIS B SCREENING: GENERAL GUIDELINES FOR ALL ADULTS

- **Beginning in 2023, CDC has recommended that all adults aged  $\geq 18$  years should receive HBV screening at least once during their lifetime.**
- The U.S. Preventive Services Task Force (USPSTF) recommends HBV screening for all persons at increased risk of HBV infection, including but not limited to:
  - Persons born in geographic areas with an [HBsAg prevalence of  \$\geq 2\%\$](#)  (such as Asia, Africa, the Pacific Islands, and parts of South America).
  - Persons born to immigrant parents from [very high prevalence areas \( \$\geq 8\%\$ \)](#) who did not receive the HBV vaccine series as infants.
  - Persons living in a household with a known HBsAg-positive person.
- Please refer to the complete [USPSTF HBV Screening Recommendations](#) for detailed guidance, including the complete list of groups at increased risk for HBV infection.

Starting in 2022, California also requires that adult patients receiving primary care services in any primary care setting to be offered a screening test for hepatitis B in accordance with [USPSTF recommendations](#), to the extent that the services are covered by the patient's insurance.

### MANAGEMENT OF CHILDREN WITH CHRONIC HEPATITIS B

- Perform a yearly physical exam on all children chronically infected with HBV (HBsAg remains positive after 6 months).
- Refer to a pediatric gastroenterologist for baseline tests and long-term monitoring.
- Treatment with antiviral medication may be initiated under guidance of a pediatric gastroenterologist.