

Perinatal Hepatitis B Prevention

"Transmission of hepatitis B virus from mother to infant during the perinatal period represents one of the most efficient modes of hepatitis B infection and often leads to severe long-term sequelae."

MMWR June 10, 1988 / 37(22); 341-6,351

Introduction

Identifying HBsAg-positive pregnant women helps prevent transmission of the hepatitis B virus (HBV) to their infants. While 16,000 to 18,000 children in the U.S. are born to mothers infected with hepatitis B every year, 95 percent of the infections are preventable through appropriate maternal screening and infant care. (Healthy People 2010, Section 14-2, Immunization and Infectious Diseases). Infants born to HBsAg-positive women have a 70 to 90 percent chance of becoming infected if left untreated, and 85 to 90 percent of those infected will subsequently become chronic carriers. Up to 25 percent of infants infected perinatally will die of chronic liver disease as adults. Hepatitis B immune globulin (HBIG) and hepatitis B vaccine administered to newborns within 24 hours of birth, followed by two subsequent doses of hepatitis B vaccine at one and six months of age can prevent more than 90 percent of perinatal hepatitis B infections.¹

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Latest Updates and Best Practices in Perinatal Hepatitis B Prevention

Updated Recommendations of the Advisory Committee on Immunization Practices (ACIP)

The ACIP has issued updated recommendations for the prevention of hepatitis B virus infection:

- Universal hepatitis B vaccination within 24 hours of birth for medically stable infants weighing ≥ 2000 grams
- Testing HBsAg-positive pregnant women for hepatitis B virus deoxyribonucleic acid (HBV DNA)
- Post-vaccination serologic testing for infants whose mother's HBsAg status remains unknown indefinitely (e.g., When a parent or person with lawful custody surrenders an infant confidentially shortly after birth)
- Single-dose revaccination for infants born to HBsAg-positive women not responding to the initial vaccine series
- Vaccination for persons with chronic liver disease
- Removal of permissive language for delaying the birth dose until after hospital discharge³

Testing HBsAg-Positive Pregnant Women for HBV DNA to Identify Infants at Greatest Risk

This new strategy further reduces HBV transmission and guides the use of maternal antiviral therapy. Published evidence indicates that maternal antiviral therapy during pregnancy further reduces perinatal HBV transmission; hence the American Association for the Study of Liver Diseases suggests antiviral therapy when maternal HBV DNA is $\geq 200,000$ IU/mL.²

Addition of a New Hepatitis B Vaccine to the Existing Vaccine Options

The FDA recently approved a new hepatitis B vaccine—Heplisav-B (recombinant, adjuvanted)—for the prevention of infection caused by all known subtypes of hepatitis B virus in adults aged ≥18 years.² Heplisav-B is in addition to the two existing single-antigen vaccines recommended in the U.S. for the vaccination of persons starting at birth—Engerix-B (GSK) and Recombivax HB (Merck)—and two combination vaccines: Pediarix (GSK), which is used for the vaccination of persons aged six weeks to six years, and Twinrix (GSK), which is used for the vaccination of persons aged ≥18 years.³

Extend Comprehensive Pregnancy Care to the “Fourth Trimester” for Better Postpartum Care

According to the American College of Obstetricians and Gynecologists (ACOG), comprehensive pregnancy care should extend into the “fourth trimester” of pregnancy and include ongoing communication between new mothers and their obstetric care providers during the first three months after birth. ACOG stresses that better care for women’s physical and mental health after giving birth may help reduce maternal morbidity and mortality. Under the revised opinion, appropriate postpartum care is considered a process versus a singular event.

Currently, as many as 40 percent of women who have given birth do not attend a postpartum visit, and attendance rates are lower among populations with limited resources, which ACOG notes contributes to health disparities. Given the urgent need to reduce maternal morbidity and mortality, this Committee Opinion has been revised to reinforce the importance of the “fourth trimester” and to propose a new paradigm for post-partum care.⁴

Increased HAV Vaccination Needed

Efforts are needed to improve HAV (hepatitis A vaccine) vaccination rates in patients infected with HBV and HCV. Hepatitis A vaccinations in adults in the United States remain poor and increased vaccination of patients with chronic viral hepatitis is needed, according to a commentary published in *Gastroenterology*.⁵

Current recommendations by the ACIP for patients with chronic liver disease include immunization with hepatitis A vaccine.⁶

Reporting Hepatitis B

The Ohio Administrative Code OAC 3701-3-02 mandates that all positive findings of Class B reportable diseases are reported to the local health department where the client resides. Tracking for infants and contacts is important to stop transmission of hepatitis B. Women who are hepatitis B-positive also need to be reported for every pregnancy, regardless of prior reporting.

**To report or
update a case,
please call IDRS:
(614) 525-8888**

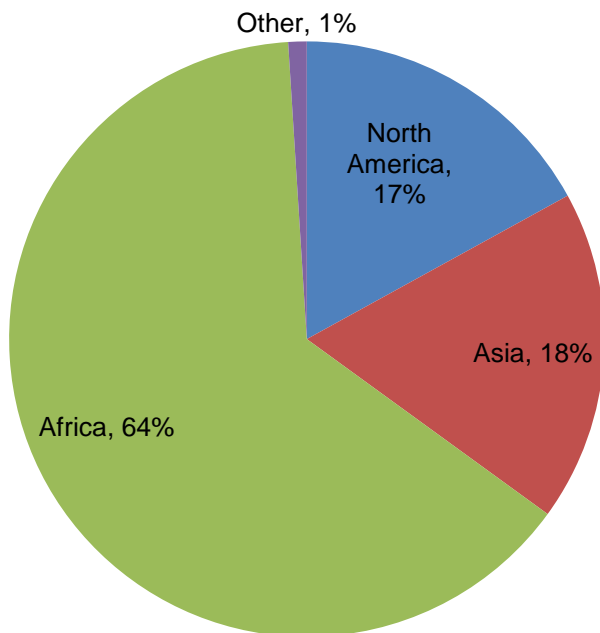
Important Reporting Considerations:

- As an infectious disease and a Class B reportable disease, public health is exempt from HIPAA requirements for patient consent [per HIPAA 164.512 (2) (b) (1) (i) and (2) (d) (iv)].
- It is the responsibility of the health care provider and laboratories to report cases of infectious disease to the local health department (OCA 3701-3). In Franklin County, you may report to the Infectious Disease Reporting System (IDRS) at 614-525-8888 or www.idrsinfo.org.
- The CDC recommends that laboratories that report electronically clearly indicate pregnancy status (when available) on all HBsAg-positive test results reported. The CDC further recommends ordering clinicians to:
 1. Select a test designated as “prenatal” or indicate prenatal/obstetric panel when ordering an HBsAg screening test for a pregnant woman.
 2. Inform the laboratory of a woman’s pregnancy status.
 3. Include any and all ICD-9/10 diagnosis codes indicating current or recent pregnancy when ordering HBsAg tests. Complete guidance is available at <http://www.cdc.gov/hepatitis/hbv/>.

Incidence of Perinatal Hepatitis B in Franklin County

Region of Birth, PHBPP Clients in Franklin County, 2017

From local health department (Columbus Public Health) data



Educational Opportunities

Nurses who work with individuals at high risk for hepatitis B infection or their babies can now take an online, self-study course on perinatal hepatitis B prevention for 1.03 nursing continuing education (CE) contact hours. Interested learners can access the course at Columbus Public Health's CE website: <http://cphsystems.org/ce/>.

The Goal of the Study:

- To enable nurses to develop a comprehensive plan of care for the mother and/or baby to prevent the transmission of perinatal hepatitis B.

The Objectives of the Study:

- Describe hepatitis B disease processes and risk factors for infection.
- Identify strategies for the protection of the baby born to a hepatitis B-positive mother.

Columbus Public Health is an approved provider of continuing nursing education by the Ohio Nurses Association, an accredited approver by the American Nurses Credentialing Center's Commission on Accreditation. (OBN-001-91) (OH -075, 6/1/2019)

Hepatitis B "is the most prevalent chronic infectious disease in the world, a common cause of morbidity and mortality worldwide, and a major health problem in the United States ...One mode of transmission of HBV is perinatal transmission."

— NY state PHBPP program manual

References

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3. "Prevention of Hepatitis B Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices." Shillie, Sarah, Vellozzi, Claudia, et al MMWR Recomm Rep. 2018; 67(RR-1):1-31.
4. "ACOG Stresses 'Fourth Trimester' for Better Postpartum Care." Medscape, Diana Phillips, April 27, 2018. <https://www.acog.org/Clinical-Guidance-and-Publications/Committee-Opinions/Committee-on-Obstetric-Practice/Optimizing-Postpartum-Care>
5. "Need for increasing hepatitis A virus vaccination among patients infected with hepatitis B virus and hepatitis C virus." Moorman, AC, Xing, J, Nelson, NP Gastroenterology, 2018;1-3. Doi:10.1053
6. "Increased HAV Vaccination Needed in Patients With Chronic HBV, HCV Infections." Infectious Disease Advisor, Schad, Virginia, May 30, 2018. <https://www.infectiousdiseaseadvisor.com/hepatitis-advisor/hepatitis-a-vaccination-lacking-in-patients-with-chronic-hbv-infection/article/769063/>

Additional Resources

- CDC Perinatal Hepatitis B Transmission – <https://www.cdc.gov/hepatitis/hbv/perinatalexmtn.htm>
- Immunization Action Coalition, Hepatitis B Birth Dose – <http://www.immunize.org/birthdose/>
- A comprehensive immunization strategy to eliminate transmission of hepatitis B virus infection in the United States: recommendations of the Advisory Committee on Immunization Practices (ACIP) part 1: immunization of infants, children and adolescents. Mast, EE, Margolis, HS, et al MMWR Recomm Rep. 2006; 54(RR- 16):1-31. – <https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5516a1.htm>

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