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**HEALTH &  
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# Hepatitis 101

Perinatal Hepatitis B Prevention Program

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# Perinatal Transmission

- Hep B virus (HBV) infection in a pregnant woman poses serious risk to her infant at birth.
- Without postexposure immunoprophylaxis, approximately 40% of infants born to HBV-infected mothers in the United States will develop chronic HBV infection.
  - Approximately one-fourth of those infants infected, will eventually die from chronic liver disease.

Content source: [Division of Viral Hepatitis, National Center for HIV, Viral Hepatitis, STD, and TB Prevention](#)

# Perinatal Prevention

Perinatal HBV transmission can be prevented by identifying HBV-infected pregnant women and providing hepatitis B immune globulin and hepatitis B vaccine to their infants within 12 hours of birth.

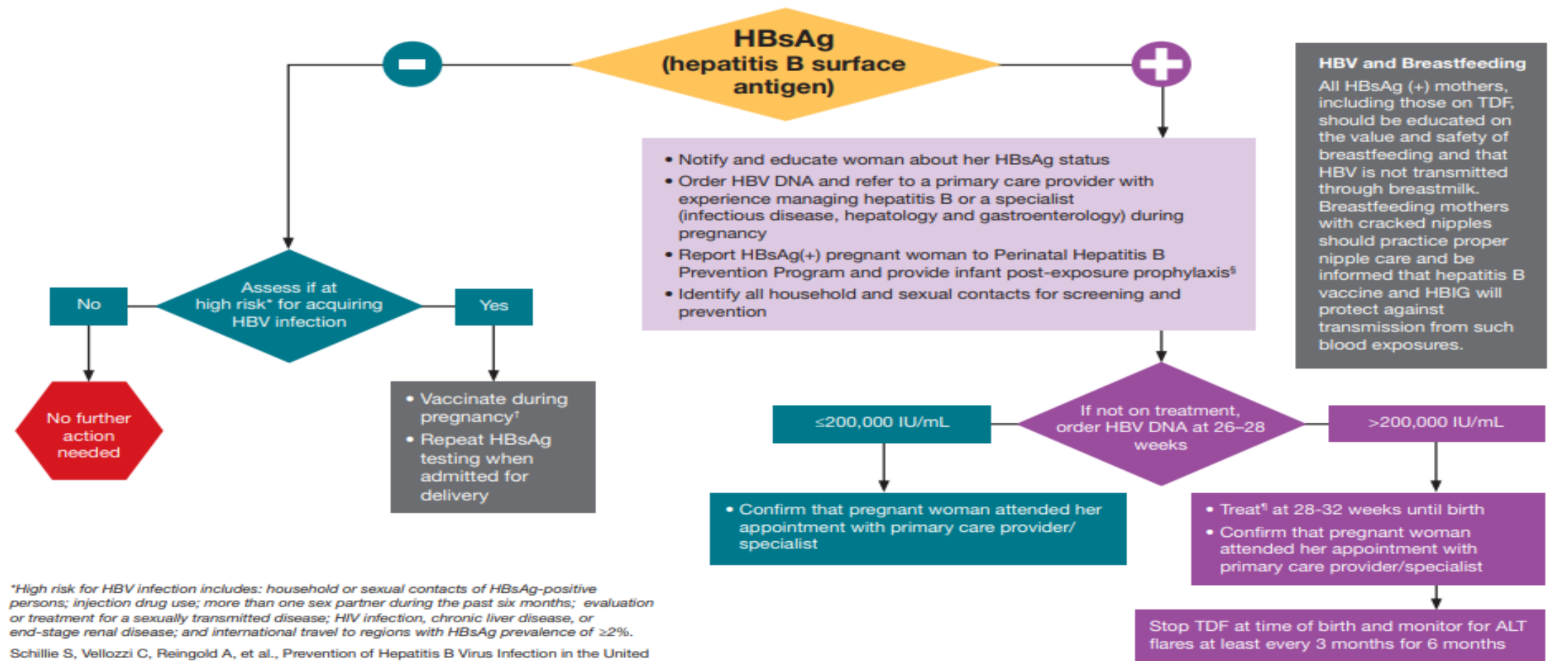
Completion of the hepatitis B vaccine series in a timely manner.

Post vaccination serology testing to confirm immunity.



Prevent Hepatitis B

# Screening and Referral Algorithm for Hepatitis B Virus (HBV) Infection Among Pregnant Women



**HBV and Breastfeeding**  
All HBsAg (+) mothers, including those on TDF, should be educated on the value and safety of breastfeeding and that HBV is not transmitted through breastmilk. Breastfeeding mothers with cracked nipples should practice proper nipple care and be informed that hepatitis B vaccine and HBIG will protect against transmission from such blood exposures.

\*High risk for HBV infection includes: household or sexual contacts of HBsAg-positive persons; injection drug use; more than one sex partner during the past six months; evaluation or treatment for a sexually transmitted disease; HIV infection, chronic liver disease, or end-stage renal disease; and international travel to regions with HBsAg prevalence of  $\geq 2\%$ .  
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):1-34.  
Originally adapted with permission from the Hepatitis B Foundation, from Apuzzio et. al, 2012. <http://www.hepb.org/assets/Uploads/Final-OB-publications-The-Female-Patient.pdf>

†Vaccinate if not previously vaccinated with a complete hepatitis B vaccine series (refer to Schillie et. al. for more information).  
‡Hepatitis B vaccine birth dose and Hepatitis B immune globulin (HBIG) (refer to Schillie et. al. for more information).  
§Tenofovir disoproxil fumarate (TDF) should be used for the treatment of pregnant women.



U.S. Department of Health and Human Services  
Centers for Disease Control and Prevention

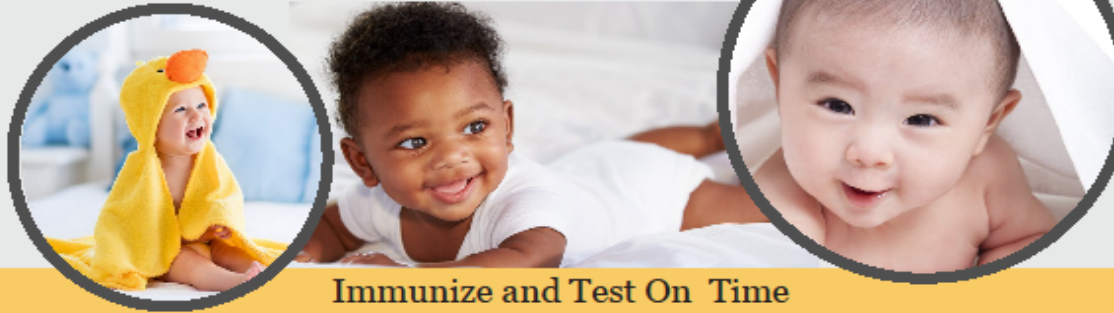


The American College of Obstetricians and Gynecologists  
WOMEN'S HEALTH CARE PHYSICIANS

[www.cdc.gov/hepatitis](http://www.cdc.gov/hepatitis)

Updated December 2021

## A Pediatric Guide: Caring for Infants Born to Hepatitis B Virus (HBV)-Infected Mothers



Immunize and Test On Time

Age	Single-antigen hepatitis B (hepB) vaccine (Energix-B® or Recombivax HB®)	Combination hepB vaccine (Pediarix®)
Birth <sup>1</sup> (within 12 hours)	Hepatitis B immune globulin (HBIG) <b>AND</b> hepB vaccine dose #1	Combination vaccine is not approved for the birth dose. See single-antigen guidance
1 -2 months <sup>2</sup>	HepB #2	HepB #2
4 months <sup>2</sup>	No vaccine needed	HepB #3
6 months	HepB #3	HepB #4
9-12 months <sup>4</sup>	Post-Vaccination Serologic Testing (PVST) Hepatitis B surface antigen (HBsAg) <b>AND</b> Hepatitis B surface antibody (anti-HBs)	PVST - HBsAg (CPT code: 87340) <b>AND</b> anti-HBs (CPT code: 86317)

1. HBIG should be administered within 12 hours of birth; however, it can be administered up to 7 days after birth if the mother's HBsAg laboratory result is unavailable at delivery.

2. Low birth weight infants (less than 2,000 grams or 4.4lbs.) should receive 4 doses of hepB vaccine. The schedule is HBIG & single-antigen hepB vaccine within 12 hours of birth, hepB vaccine at 1 month, 2 months, and 6 months of age.

3. The Pediarix® schedule is HBIG & single-antigen hepB vaccine within 12 hours of birth, followed by Pediarix® doses at 2, 4 and 6 months of age.

4. Blood for the PVST should not be collected before 9 months of age **AND** must be drawn a minimum of 30 days after final hepB vaccine dose, if the infant is completing the hepB vaccine series after the recommended intervals.

### PVST Laboratory Interpretations

	Immune to HBV No additional hepB doses needed	Susceptible to HBV Additional hepB dose(s) needed	Infected with HBV Report results to LHD/PHBPP
Test	<b>HBsAg</b> <b>anti-HBs</b>	<b>HBsAg</b> <b>anti-HBs</b>	<b>HBsAg</b> <b>anti-HBs</b>
Result	<b>Negative</b> <b>Positive</b>	<b>Negative</b> <b>Negative</b>	<b>Positive</b> <b>Negative</b>

Report all PVST results to MODHSS/PHBPP



For more information, visit our Perinatal Hepatitis B Prevention Program (PHBPP) website at:  
[www.health.mo.gov/living/healthcondiseases/communicable/hepatitisb/perinatal.php](http://www.health.mo.gov/living/healthcondiseases/communicable/hepatitisb/perinatal.php)

This document was adapted from the Michigan Department of Health and Human Services. Rev 06/2022

# Common Questions About Perinatal Hepatitis B

**What is hepatitis B?** Hepatitis B is an infectious liver disease caused by the hepatitis B virus (HBV). HBV attacks the liver and can lead to cirrhosis, liver cancer and premature death.

**How is HBV transmitted?** HBV is transmitted through contact with infectious blood or body fluids. HBV can be transmitted from an infected mother to her newborn during pregnancy.

**When is an infant at high-risk for HBV infection?** Infants born to mothers who are hepatitis B surface antigen (HBsAg) positive are considered high-risk.

**How can HBV infection be prevented at birth?** Administering hepatitis B immune globulin (HBIG) and the first dose of hepatitis B vaccine (hepB) within 24 hours of birth is 85%-95% effective in preventing perinatal HBV infection.

**Is there a specific immunization schedule that needs to be followed for HBV-exposed infants?** Yes. HBIG and hepB (birth dose) should be administered within 12 hours of birth. HepB dose two should be administered at 1-2 months of age and the third dose should be administered at 6 months of age. After the birth dose, infants receiving Pediarix® should receive doses at 2, 4 and 6 months of age.

**What if my practice identifies a HBV-exposed newborn that did not receive HBIG before hospital discharge?** Administering HBIG within 12 hours of birth is recommended; however, it can be administered up to 7 days after birth. The infant should be referred urgently to the Mother/Baby department of the delivery hospital for immediate administration of HBIG. If more than 7 days have passed, it may be too late to administer HBIG. It is extremely important to ensure that the hepB birth dose was given, especially if HBIG was not given, and strictly adhere to recommended intervals for the hepB completion.

**My patient was born to a HBV-infected mother and weighed less than 2,000 grams (4.4 lbs) at birth. Why does this infant need 4 doses of hepB?** The immune response to hepB is less reliable to newborns weighing less than 2,000 grams. HBV-exposed infants must receive HBIG and hepB within 12 hours of birth. The hepB birth dose should not be counted as part of the series and the infant should receive three additional doses beginning at 1 month of age, followed by a third dose 1-2 months after the second and a fourth dose at 6 months of age. Infants receiving Pediarix® should receive HBIG and the single-antigen birth dose followed by Pediarix® doses at 2, 4 and 6 months of age.

**What is post-vaccination serologic testing (PVST) and why is it necessary?** PVST is recommended for infants and children born to HBV-infected mothers. Serologic testing confirms whether the child has developed immunity or has been infected with HBV. The PVST should include HBsAg and anti-HBs only. Testing should occur between 9 and 12 months of age.

**Why must providers wait until the infant is 9 months of age to collect the PVST?** Labs collected before 9 months of age can provide inaccurate anti-HBs results by detecting the antibody from the HBIG administered at birth and not actual response to the hepB vaccine. Also, for infants who receive HBIG at birth but still develop HBV infection, there can be a prolonged incubation period. Waiting until 9 months of age can maximize detection of late HBV infection.

**Can collection of the PVST be delayed until the infant is older?** After primary immunization with hepB, anti-HBs concentrations decline rapidly within the first year. This decline may result in a negative/non-reactive anti-HBs result, making it difficult to determine if this child has waned immunity or if there was vaccine failure, which may lead to unnecessary revaccination. For this reason, providers are encouraged to test at 9-12 months of age (or 1-2 months after the final dose of the hepB series, if doses were delayed).

**What if my patient's HBsAg and anti-HBs results are negative after completing the hepB series?** The child should receive one additional dose of hepB vaccine and be retested 1-2 months later. If anti-HBs positive, nothing further, child is protected from HBV. If anti-HBs negative, give two additional doses (1 & 6 months later) and retest the infant 1-2 months after the completion of the second hepB vaccine series. If immunity is still not present after six doses, counsel the child's parents or guardian on risk reduction strategies for vaccine non-responders.

**What if my patient is infected with HBV?** HBV infection is a reportable condition in Missouri. Report the HBsAg positive result to the Missouri Department of Health and Senior Services (MODHSS), Bureau of Reportable Disease Informatics (BRDI), or to the local health department within 7 days of diagnosis. Refer the child to a pediatric specialist for further evaluation. The child's family and caretakers should be educated about avoiding blood exposure.

**My HBV-exposed patient has other siblings that I care for in my practice. Do they need follow-up?** Yes. Household contacts including other siblings should be tested and vaccinated against HBV, if found to be susceptible.

**What if the infant was adopted or the mother's HBsAg status is unknown?** Verify the child's immunization history beginning at birth. Administer any missing hepB doses, followed by PVST at 9-12 months of age



For more information, visit the MODHSS PHBPP website at:  
[www.health.mo.gov/perinatal.php](http://www.health.mo.gov/perinatal.php)



Initially, case management contacts the pregnant female to let her know that she will be followed, to give Hepatitis B information and education as needed, and to offer hepatitis B testing and vaccine to household or sexual contacts.

Case management follows the pregnant female to verify that the infant receives HBIG (Hepatitis B Immunoglobulin - a solution of antibodies that help prevent infection) and the hepatitis B vaccine birth dose within 12 hours of birth. Case management then continues to follow the infant to make sure they receive the rest of the Hepatitis B vaccine series in the correct time frame; followed up by Post Vaccine Serology Testing (PVST), this is to insure that the infant is immune.



## LPHA GUIDELINES

- All labs indicating possible Hep B virus (HBV) infection in a female ages 11-47 are to be investigated to determine pregnancy status.
  - Contact the provider who ordered the test.
  - Contact the client directly.
  - If not pregnant, update Websurv indicating status, and you are finished.
  - If client is pregnant, enrollment in case management is required. Update Websurv with status and notify PHB program manager at DHSS with positive pregnancy status.

# LPHA GUIDELINES FOR CASE MANAGEMENT

- Complete page one of the [PHB-29](#) form for case management and email or fax it to the PHB program manager. Phone provider and client, **so the form can be completed**, to include:
  - Mother's full name and date of birth.
  - Mother's address and phone number.
  - Estimated due date.
  - OB/Gyn's name, address and phone number.
  - Delivering hospital's name, address and phone number.
  - Mother's insurance type. (Private, Medicaid, Military, Unk)
    - The PHB program manager will add the pregnancy condition to Websurv once this form is received.

# CASE MANAGEMENT GUIDELINES (CONTINUED)

- When you contact the client please educate them on Hep B and what case management entails. There are letters online for your use. There is a brochure in the warehouse that you can order to keep on hand to send the client. [Newborn Health | Health & Senior Services \(mo.gov\)](#)
- When you contact the OB/Gyn provider, please remind them that the positive HBsAg status must be sent to the delivering hospital, for them to prepare to treat the infant at birth.
- When you contact the pediatrician's office, please educate them on the requirements needed for infants born to Hep B positive women. There are letters and educational information online. [Perinatal Hepatitis B Case Management | Hepatitis B | Health & Senior Services \(mo.gov\)](#)

## CASE MANAGEMENT GUIDELINES (CONTINUED)

- Approximately 4-6 weeks prior to delivery, you will contact the designated delivery hospital to make them aware of the upcoming birth.
- On the estimated delivery date, contact the hospital to see if the client delivered.
  - Request birth information for the PHB-29. Complete page 2, infant page. Submit updated form to PHB program manager.
    - Remember to get date and time that HBIG and Hep B #1 were administered.
      - PHB program manager will update Websurv and ShowMeVax (SMV).

# CASE MANAGEMENT GUIDELINES (CONTINUED)

- Follow infants to ensure completion of Hep B vaccine series.
  - Contact infant provider and parents to ensure Hep B #2 completed at 1-2 months of age and Hep B #3 at 6 months of age.
    - Update PHB-29 after each vaccination and submit to PHB program manager, who will update Websurv and SMV.

To protect your baby from hepatitis B, your baby needs to have at:

Date completed:

Birth (within 12 hours)

hep B vaccine and HBIG

1-2 months of age

hep B vaccine #2

6 months of age

hep B vaccine #3

# CASE MANAGEMENT GUIDELINES (CONTINUED)

- After infants complete their vaccination series it's time for Post Vaccine Serology Testing (PVST). Ideally at 9 months of age.
- PVST consists of both HBsAg and HBsAb lab tests.
  - Be sure to give the provider the CPT Codes for the labs.
    - HBsAg: 87340 (positive = infected).
    - HBsAb: 86317 for the quantitative test (preferred).
      - Must be  $\geq 10$  mIU/mL for immunity.
    - HBsAb: 86706 for the qualitative test.
      - Positive equals immunity.
- When results are received, update PHB-29 and submit to the PHB program manager for case closure.

# CASE MANAGEMENT GUIDELINES

(CONTINUED)

- In a perfect world, case management is completed at 9 months of age. However, if vaccination is not completed within timeframe, it throws off PVST timeframe. A few things to remember:
  - Continue working with parents and providers to finish vaccination series.
  - PVST can be completed 4-6 weeks after last vaccine; infant must be at least 9 months of age! (due to half life of HBIG).
  - Continue working with parents and provider to complete PVST until child is 2 years of age and ages out of program.

# Resources

- [Perinatal Hepatitis B Case Management | Hepatitis B | Health & Senior Services \(mo.gov\)](https://health.mo.gov/living/healthcondiseases/communicable/hepatitisb/casemanagement.php)
- [Hepatitis B | Health & Senior Services \(mo.gov\)](https://health.mo.gov/living/healthcondiseases/communicable/hepatitisb/)
- [Perinatal Transmission of Hepatitis B virus | CDC](https://www.cdc.gov/hepatitis/hbv/perinatalxmtn.htm)
- [Division of Viral Hepatitis | CDC](https://www.cdc.gov/hepatitis/index.htm)
- [Immunization Action Coalition \(IAC\): Vaccine Information for Health Care Professionals \(immunize.org\)](https://www.immunize.org/)
- [Newborn Health | Health & Senior Services \(mo.gov\)](https://health.mo.gov/living/families/genetics/newbornhealth/orderform.php)





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# QUESTIONS?



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