

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 (Pediatrix [®])
Birth¹ (within 12 hours)	Hepatitis B immune globulin (HBIG) AND hepB vaccine dose #1	Combination vaccine is not approved for the birth dose. See single-antigen guidance
1 -2 months²	HepB #2	HepB #2
4 months³	No vaccine needed	HepB #3
6 months	HepB #3	HepB #4
9-12 months⁴	Post-Vaccination Serologic Testing (PVST) Hepatitis B surface antigen (HBsAg) AND Hepatitis B surface antibody (anti-HBs)	PVST - HBsAg AND anti-HBs

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 Pediatrix[®] schedule is HBIG & single-antigen hepB vaccine within 12 hours of birth, followed by Pediatrix[®] 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 doses needed



Infected with HBV
Report results to LHD/PHBPP

Test	HBsAg	anti-HBs	HBsAg	anti-HBs	HBsAg	anti-HBs
Result	Negative	Positive	Negative	Negative	Positive	Negative

Report all PVST results to MDHHS/PHBPP

For more information, visit our Perinatal Hepatitis B Prevention Program (PHBPP) website at: www.michigan.gov/hepatitisB

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 Michigan. Report the HBsAg positive result to the Michigan Department of Health and Human Services (MDHHS), Michigan Disease Surveillance System (MDSS), 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.

All immunizations must be reported to the MDHHS Michigan Care Improvement Registry (MCIR) within 72 hours of vaccine administration.



For more information, visit the MDHHS PHBPP website at: www.michigan.gov/hepatitisb