

# Discrepant Hepatitis B surface antigen (HBsAg) lab results during pregnancy: recommended next steps

**Purpose: A guide for determining management of infants born to a pregnant person with an initial confirmed HBsAg positive result followed by a negative result during the same pregnancy\***

Example: HBsAg positive (1<sup>st</sup> trimester)→HBsAg negative (3<sup>rd</sup> trimester)

## KEY POINTS:

- All positive HBsAg results in pregnancy should be followed by a Nucleic Acid Test (NAT) for Hepatitis B Virus (HBV) DNA ([ACIP](#))
  - » Detection of HBV DNA indicates current HBV infection during pregnancy<sup>†</sup>
  - » Additional tests for total anti-HBc, IgM anti-HBc and anti-HBs will help establish diagnosis<sup>§</sup>
- If a definitive diagnosis of HBV infection is not yet established at the time of delivery, the infant should be given hepatitis B vaccine within 12 hours of birth while additional labs are pending
  - » Infants weighing < 2000g should also receive hepatitis B immune globulin (HBIG) within 12 hours of birth if diagnosis cannot be established
  - » If testing confirms diagnosis of HBV infection, infants weighing ≥ 2000g should be given HBIG within 7 days of birth
  - » If a definitive diagnosis cannot be established (e.g., person refuses additional testing), consider managing conservatively and administering HBIG within 7 days of birth
- Refer all HBsAg positive pregnant persons to the Perinatal Hepatitis B Prevention Program (PHBPP) [coordinator](#) for case management of mother and infant.

\* For pregnant persons never treated or diagnosed with chronic hepatitis B

† Pregnant person should be referred to Perinatal Hepatitis B Prevention Program (PHBPP) and the infant should receive hepatitis B vaccine and hepatitis B immune globulin within 12 hours of birth.

§ If additional tests are not drawn and HBV infection cannot be ruled out, manage as if it is an HBV infection, i.e., refer to PHBPP, give the infant hepatitis B vaccine and HBIG within 12 hours of birth.



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## Table. Interpretation of HBV markers of infection following discrepant HBsAg lab results during pregnancy

**HBsAg results:** First HBsAg positive and second HBsAg negative in same pregnancy

Additional Tests*	Results of additional testing <sup>†</sup>	Interpretation	Action
<b>HBV DNA</b> <b>Total anti-HBc</b> <b>IgM anti-HBc</b> <b>Anti-HBs</b>	Detected Positive Positive Positive	Resolving acute infection <sup>§</sup>	<ul style="list-style-type: none"> <li>Refer to PHBPP</li> <li><b>Infant needs post-exposure prophylaxis<sup>¶</sup></b></li> </ul>
<b>HBV DNA</b> <b>Total anti-HBc</b> <b>IgM anti-HBc</b> <b>Anti-HBs</b>	Not detected Positive Negative Negative	False positive HBsAg** (first test) with a history of HBV infection cleared prior to pregnancy OR False negative HBsAg (second test) possible mutant <sup>††</sup>	<ul style="list-style-type: none"> <li>Refer to PHBPP</li> <li><b>Infant needs post-exposure prophylaxis<sup>§§</sup></b></li> </ul>
<b>HBV DNA</b> <b>Total anti-HBc</b> <b>IgM anti-HBc</b> <b>Anti-HBs</b>	Detected Positive Negative Negative	Occult infection	<ul style="list-style-type: none"> <li>Refer to PHBPP</li> <li><b>Infant needs post-exposure prophylaxis</b></li> </ul>
<b>HBV DNA</b> <b>Total anti-HBc</b> <b>IgM anti-HBc</b> <b>Anti-HBs</b>	Detected Positive Positive Negative	Chronic HBV infection with false negative HBsAg (possible mutant <sup>††</sup> )	<ul style="list-style-type: none"> <li>Refer to PHBPP</li> <li><b>Infant needs post-exposure prophylaxis</b></li> </ul>
<b>HBV DNA</b> <b>Total anti-HBc</b> <b>IgM anti-HBc</b> <b>Anti-HBs</b>	Not detected Positive Negative Positive	False positive HBsAg** (first test) with a history of HBV infection cleared prior to pregnancy OR resolved acute infection during pregnancy	<ul style="list-style-type: none"> <li>Refer to PHBPP</li> <li><b>Infant needs post-exposure prophylaxis<sup>§§</sup></b></li> </ul>
<b>HBV DNA</b> <b>Total anti-HBc</b> <b>IgM anti-HBc</b> <b>Anti-HBs</b>	Not detected Negative Negative Negative	False positive HBsAg** (first test) and potentially susceptible <sup>¶¶</sup>	<ul style="list-style-type: none"> <li>Do not refer to PHBPP</li> <li><b>Vaccinate infant per routine guidelines</b></li> </ul>
<b>HBV DNA</b> <b>Total anti-HBc</b> <b>IgM anti-HBc</b> <b>Anti-HBs</b>	Not detected Negative Negative Positive	False positive HBsAg** (first test) and potentially vaccinated	<ul style="list-style-type: none"> <li>Do not refer to PHBPP</li> <li><b>Vaccinate infant per routine guidelines</b></li> </ul>

\* Additional tests should be done on either the same day or after the second HBsAg negative result

<sup>†</sup> If additional tests are not drawn and HBV infection cannot be ruled out, manage as if it is an HBV infection, i.e., refer to PHBPP, give the infant hepatitis B vaccine and HBIG within 12 hours of birth.

<sup>§</sup> HBV exposure early in pregnancy

<sup>¶</sup> Post-exposure prophylaxis: administer HBIG and hepatitis B vaccine to the infant within 12 hours of birth

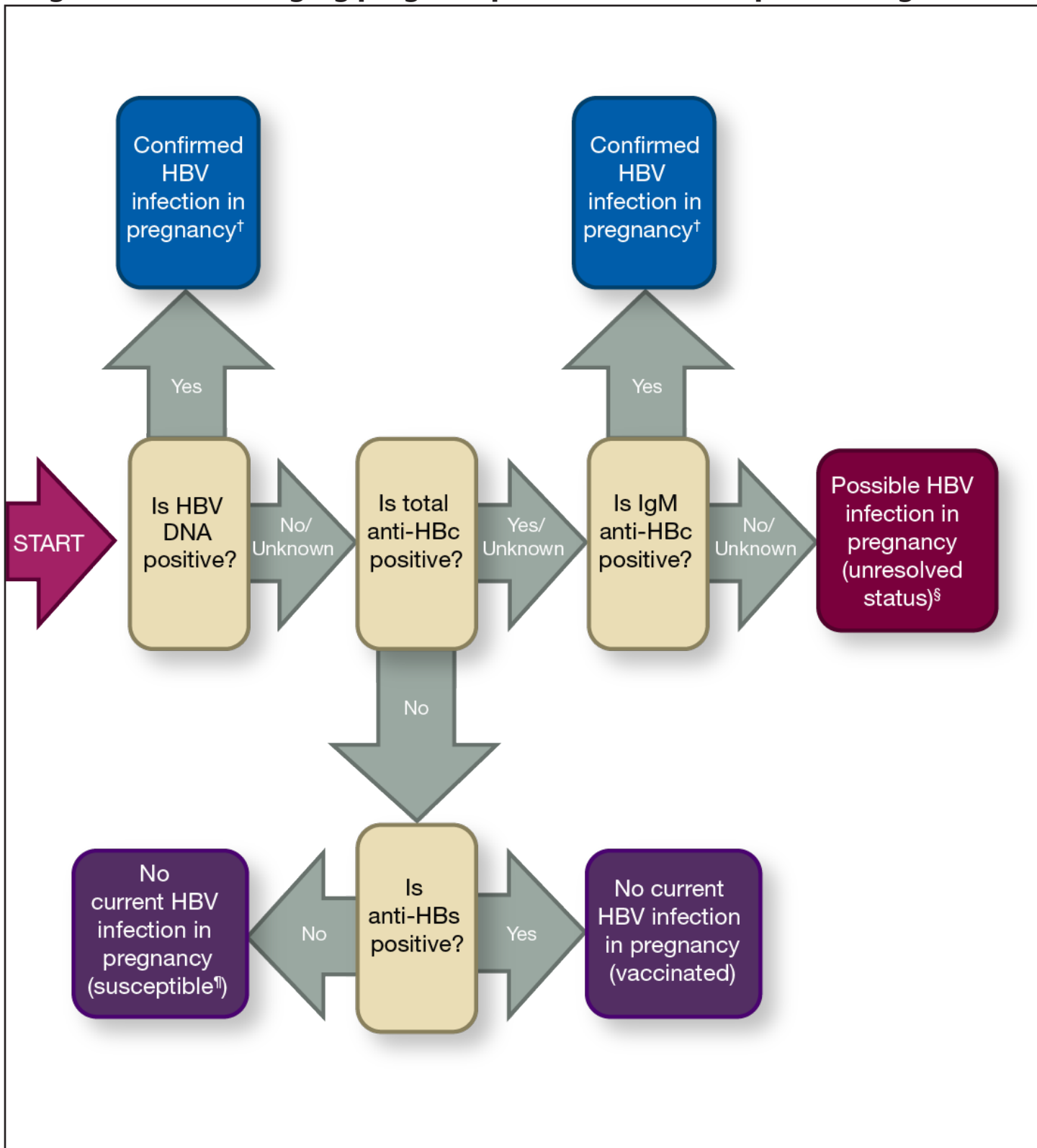
\*\* False positive HBsAg can occur within 30 days of receiving hepatitis B vaccine

<sup>††</sup> Mutant HBV that is not detected on second HBsAg test. Some mutant HBV isolates may be undetectable by HBsAg assays that have not yet incorporated these mutants in their assay systems. FDA-approved Abbott ARCHITECT HBsAg assay and Siemens Centaur HBsAg II assays can detect most commonly occurring HBV mutants

<sup>§§</sup> Cannot rule out HBV exposure during pregnancy

<sup>¶¶</sup> Susceptible persons should be vaccinated according to [ACIP recommendations](#)

## Algorithm for managing pregnant persons with discrepant HBsAg results\*



\* For persons never treated or diagnosed with chronic hepatitis B, with an initial confirmed HBsAg positive result followed by a negative result in the same pregnancy.

† Administer Hepatitis B immune globulin (HBIG) and Hepatitis B vaccine to infant within 12 hours of birth and refer to Perinatal Hepatitis B Prevention Program (PHBPP)

§ Infants born to pregnant persons with unresolved HBV infection status should be treated as born to an unknown HBsAg status pregnant person with Hepatitis B vaccine within 12 hours of birth for infants weighing  $\geq 2000g$  and Hepatitis B vaccine and HBIG within 12 hours of birth for infants weighing  $< 2000g$ .

° Perform additional testing in pregnant person at the time of delivery. If results are consistent with true infection, refer to PHBPP.

¶ Susceptible persons should be vaccinated according to [ACIP recommendations](#)

## References:

- [Interpretation of Hepatitis B Serologic Test Results](#)
- [Prevention of Hepatitis B Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices \(cdc.gov\)](#)
- [Universal Hepatitis B Vaccination in Adults Aged 19–59 Years: Updated Recommendations of the Advisory Committee on Immunization Practices – United States, 2022 | MMWR \(cdc.gov\)](#)
- [Management of Infants Born to Women with Hepatitis B Virus Infection for Pediatricians \(cdc.gov\)](#)
- [Screening and Referral Algorithm for Hepatitis B Virus \(HBV\) Infection Among Pregnant Women \(cdc.gov\)](#)
- [Hepatitis B Management: Guidance for the Primary Care Provider - HBV Primary Care Workgroup - Hepatitis B Online \(uw.edu\)](#)
- [Update on Prevention, Diagnosis, and Treatment of Chronic Hepatitis B: AASLD 2018 Hepatitis B Guidance](#)
- [Discrepant Hepatitis B Surface Antigen Results in Pregnant Women Screened to Identify Hepatitis B Virus Infection](#)