

# Putting Prevention into Practice

## *An Evidence-Based Approach*

### Screening for Hepatitis B Virus in Pregnant Women

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#### Case Study

A 33-year-old U.S.-born pregnant clinician comes to your office for a first prenatal visit. Her most recent menstrual period was six weeks ago, and she has been taking prenatal vitamins for the past eight weeks. She was pregnant once more than two years ago, and at the time she screened negative for the hepatitis B virus (HBV). She reports that she received an HBV vaccination one year ago during a work-related physical examination and that she does not smoke, drink alcohol, or use recreational drugs.

#### Case Study Questions

1. Based on the U.S. Preventive Services Task Force (USPSTF) recommendation statement, should you offer this patient HBV screening?
  - A. Yes, because she works in a high-risk environment (a health care field).
  - B. Yes, because this is a first prenatal visit.
  - C. No, because she had a prior negative hepatitis B surface antigen (HBsAg) test result during her first pregnancy.
  - D. No, because she received an HBV vaccination.
  - E. No, because she does not have any risk factors for HBV.

2. If you screened this patient, which one of the following tests should you order?

- A. HBsAg.
- B. Hepatitis B surface antibodies (HBsAb).
- C. Total hepatitis B core antibody (HBcAb).
- D. Immune globulin M (IgM) HBcAb.
- E. Hepatitis B e antigen (HBeAg).

3. If this patient screens positive for HBV, which of the following interventions substantially reduce the risk that her infant will acquire HBV infection?

- A. HBV vaccination for the mother.
- B. Hepatitis B immune globulin (HBIG) for the mother.
- C. HBV vaccination for the infant.
- D. HBIG for the infant.

Answers appear on the following page.

**See related** U.S. Preventive Services Task Force Recommendation Statement on page 112.

**This PPIP quiz** is based on the recommendations of the USPSTF. More information is available in the USPSTF Recommendation Statement and supporting documents on the USPSTF website (<https://www.uspreventiveservicestaskforce.org>). The practice recommendations in this activity are available at <https://www.uspreventiveservicestaskforce.org/Page/Document/RecommendationStatementFinal/hepatitis-b-virus-infection-in-pregnant-women-screening>.

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**CME** This clinical content conforms to AAFP criteria for continuing medical education (CME). See CME Quiz on page 79.

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## PUTTING PREVENTION INTO PRACTICE

### Answers

**1. The correct answer is B.** Based on the USPSTF recommendations, this patient should be offered HBV screening because it is her first prenatal visit.<sup>1</sup> Screening should be performed in each pregnancy, regardless of previous HBV vaccination or previous negative HBsAg test results.

**2. The correct answer is A.** Screening for maternal HBV infection is done through HBsAg serologic testing.<sup>1</sup> HBsAb results may be positive because of prior HBV infection or vaccination. Detection of total HBcAb and IgM-specific antibodies can be used to determine acute infection but not for screening purposes. HBeAg serology tests for infectivity but is not used for screening.

**3. The correct answers are C and D.** For infants born to mothers who test positive for HBsAg, current guidelines for case management include HBV vaccination and HBIG prophylaxis within 12 hours of birth, completing the vaccine series, and serologic testing for infection and immunity at nine to 12 months of age.<sup>2,3</sup> For infants born to mothers with unknown HBsAg status, current

guidelines for case management include HBV vaccination within 12 hours of birth, followed by HBIG prophylaxis. For HBV-positive mothers, case management during pregnancy includes HBV DNA viral load testing and referral to specialty care for counseling and medical management of HBV infection.

**The views expressed** in this work are those of the authors and do not reflect the official policy or position of Boston Medical Center, the U.S. Department of Health and Human Services, or the U.S. government.

### References

1. Davidson KW, Krist AH, Barry MJ, et al. Screening for hepatitis B virus infection in pregnant women: US Preventive Services Task Force reaffirmation recommendation statement. *JAMA*. 2019;322(4):349-354.
2. Henderson JT, Webber EM, Bean SI. Screening for hepatitis B virus infection in pregnant women: updated evidence report and systematic review for the US Preventive Services Task Force. *JAMA*. 2019;322(4):360-362.
3. 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(1):1-31. ■

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