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Perinatal Hepatitis B Prevention

Overview

Based on the success of past endeavors of hepatitis B disease reduction among both children and adults (new hepatitis B infections have declined from approximately 260,000 in the 1980s to an estimated 43,000 new infections in 2007), the Centers for Disease Control and Prevention (CDC) seeks to eliminate hepatitis B virus (HBV) transmission in the United States. However, this goal cannot be reached without assistance from the immunization grantees, especially the perinatal hepatitis B prevention coordinators.

The perinatal hepatitis B prevention program began in 1990 as part of the Vaccine and Immunization Amendments (P.L. 101-502), because Congress recognized the need to foster efforts to prevent perinatal HBV transmission and made resources available to develop and implement programs. Since 1991, CDC has annually awarded funds to support perinatal hepatitis B prevention programs among the 64 immunization grantees. These programs have made great strides in the prevention of hepatitis B transmission from infected mothers to infants, but gaps remain in the identification of hepatitis B surface antigen (HBsAg)-positive pregnant women and their infants and in the case management of the infants and household and sexual contacts.

Several sources of data should be used to evaluate the progress of perinatal hepatitis B prevention programs, such as CDC's expected births to HBsAg-positive women, NIS birth dose coverage data, and grantee specific perinatal hepatitis B program data. The identification of areas for improvement in perinatal hepatitis B prevention programs will help us reach the Healthy People 2020 goal: to reduce the estimated number of perinatal infections by 20% from 799 (in 2007) to 400.

Managing a Hepatitis B Prevention Program: A Guide to Life as a Program Coordinator is a guide that has been developed and updated by CDC. Additional guidance on how to run an effective perinatal hepatitis B prevention program can be found in this guide.

References

- CDC. [A comprehensive immunization strategy to eliminate transmission of hepatitis B virus infection in the United State: recommendations of the Advisory Committee on Immunization Practices \(ACIP\)](#), Part 1: Immunization of Infants, Children, and Adolescents, MMWR 2005; 54(RR-16).
- *Managing a Hepatitis B Prevention Program: A Guide to Life as a Program Coordinator* <http://www.cdc.gov/hepatitis/Partners/PeriHepBCoord.htm#> (Under CDC Resources)
- Immunization Action Coalition's Hepatitis B Birth Dose Website: <http://www.immunize.org/birthdose/>
- NIS birth dose data, <http://www.cdc.gov/hepatitis/Partners/PeriHepBCoord.htm#> (under Scientific Resources/Recommendations)
- Division of Viral Hepatitis' Perinatal Hepatitis B Coordinator webpage <http://www.cdc.gov/hepatitis/Partners/PeriHepBCoord.htm#>

- Vaccines for Children Program Operations Guide:
<http://www.cdc.gov/vaccines/programs/vfc/operations-guide.htm#>

Program Goals

5.1 Establish a mechanism to identify all HBsAg-positive pregnant women.

Required objectives

Maintain protocol

5.1a. Maintain a protocol for perinatal hepatitis B prevention based on the recommendations in the 2005 Advisory Committee on Immunization Practices (ACIP) hepatitis B statement, which includes information about the perinatal hepatitis B prevention program, the procedures for reporting HBsAg-positive pregnant women and their infants to the health department, and a description of how the health department will provide support for the management of infants born to HBsAg-positive women. Disseminate the protocol to local health departments, prenatal care providers, obstetrical care providers, neonatal care providers, pediatric care providers, family practitioners, delivery hospitals, and laboratories annually through some media (mailing, information in health department newsletter, inclusion on health department website, etc.).

Performance measure: Review, update and disseminate protocol annually.

Allowable funding source: 317 FA Operations

Educate providers and hospitals

5.1b. Educate prenatal care providers to routinely screen pregnant women for HBsAg status during each pregnancy, implement procedures for documenting HBsAg screening results in prenatal care records, and forward original laboratory results to the delivery hospital. Educate delivery hospitals to verify prenatal HBsAg test results of pregnant women (as indicated in ACIP statement) on admission for delivery and test women with unknown HBsAg status and those with high-risk behaviors.

Performance measure: Prenatal care providers are educated.

Allowable funding source: 317 FA Operations

Performance measure: Delivery hospitals are educated.

Allowable funding source: 317 FA Operations

Recommended objectives

5.1c. Support and assist in the drafting of laws or regulations that require prenatal care providers and birthing hospitals to ensure HBsAg status of all pregnant women is known during each pregnancy, if such laws or regulations do not exist.

- 5.1d. Support and assist in the drafting of laws or regulations that require prenatal care providers, laboratories, and hospitals to report HBsAg-positive pregnant women to the health department, if such laws or regulations do not exist.
- 5.1e. Work with state surveillance staff to identify potential HBsAg-positive pregnant women from a chronic hepatitis B registry.

5.2 Conduct case management of all identified infants born to HBsAg-positive women and case manage all household and sexual contacts of HBsAg-positive pregnant women.

Required objectives

Case management of infants

- 5.2a. Use case management to help assure that infants born to HBsAg-positive mothers:
 - a. receive hepatitis B vaccine and HBIG within 12 hours of birth
 - b. complete their hepatitis B vaccine series by 6-8 months of age if the infant is receiving single antigen or Pediarix vaccine and by 15 months of age if the infant is receiving the Comvax vaccine series.
 - c. receive post-vaccination serologic testing by 9-15 months of age if the infant received single antigen or Pediarix vaccine and by 18 months of age if the infant received the Comvax vaccine series.

Performance measure: Percent of infants who receive hepatitis B vaccine and HBIG within 12 hours of birth.

Target: 90%

Allowable funding source: 317 FA Operations

Performance measure: Percent of infants who complete their vaccination series on schedule.

Target: 90%

Allowable funding source: 317 FA Operations

Performance measure: Percent of infants who complete their post-vaccination testing.

Target: 90%

Allowable funding source: 317 FA Operations

Complete case reporting

- 5.2b. Work with state surveillance staff to ensure complete perinatal case reporting (when infants test HBsAg-positive) to CDC via NNDSS.

Performance Measure: All HBsAg-positive lab results for infants are reported to CDC via NNDSS.

Target: 100%

Allowable funding source: 317 FA Operations

Identify and manage contacts

- 5.2c. Identify household contacts and sexual partners of HBsAg-positive pregnant women, determine susceptibility, and ensure they receive the hepatitis B vaccine series, if susceptible.

Performance Measure: Percentage of identified household and sexual contacts for which susceptibility status is determined

Allowable funding source: 317 FA Operations

Performance Measure: Percentage of susceptible household and sexual contacts that complete the three-dose hepatitis B vaccine series

Allowable funding source: 317 FA Operations

Recommended objectives

- 5.2d. Develop and maintain a database for tracking perinatal hepatitis B cases.
- 5.2e. Work with other maternal child health programs [e.g., perinatal human immunodeficiency virus (HIV) prevention program, newborn metabolic screening, early hearing detection, Women, Infants, and Children (WIC) program, etc.] to integrate program assessments and improve provision of complete services to pregnant women and mothers.

5.3 Evaluate completeness of identification of HBsAg-positive pregnant women, birth dose administration, hospital policies, and appropriate care of infants born to HBsAg-positive and unknown status mothers.

Required objectives

Hospital medical record reviews

- 5.3a. Conduct medical record reviews at hospitals that deliver at least 90% of the jurisdiction's birth cohort during the current 5 year grant cycle. Hospitals that have delivered infants of HBsAg-positive women or hospitals in areas with high HBsAg prevalence rates should be prioritized (see the Guide to Life for more details on selecting sample sizes for hospital reviews). Assess maternal and infant hospital medical records for:
- the presence of maternal HBsAg test results (including the test date)
 - administration of hepatitis B vaccine and HBIG within 12 hours of birth to infants born to HBsAg-positive women
 - administration of hepatitis B vaccine within 12 hours of birth to infants born to HBsAg-unknown status women
 - administration of a dose of hepatitis B vaccine to all infants prior to hospital discharge

Performance measure: Percentage of maternal records with documented HBsAg results for the current pregnancy

Target: 100%

Allowable funding source: 317 FA Operations

Performance measure: Percentage of infants born to women with HBsAg-positive status that receive appropriate prophylaxis within 12 hours of birth

Target: 100%

Allowable funding source: 317 FA Operations

Performance measure: Percentage of infants born to women with HBsAg-unknown status that receive appropriate prophylaxis within 12 hours of birth

Target: 100%

Allowable funding source: 317 FA Operations

Performance measure: Percentage of all infants that receive hepatitis B vaccine prior to hospital discharge

Target: 100%

Allowable funding source: 317 FA Operations

Hospital policies/orders

- 5.3b. Conduct a hospital policy survey during the five-year grant cycle to assess whether delivery hospitals have developed written policies and pre-printed orders for:
- a. review of maternal records for HBsAg results and testing for HBsAg when appropriate
 - b. administration of post-exposure prophylaxis to infants born to HBsAg-positive status women within 12 hours of birth
 - c. administration of post-exposure prophylaxis to infants born to HBsAg-unknown status women within 12 hours of birth
 - d. administration of a dose of hepatitis B vaccine to all newborns prior to hospital discharge

Performance measure: Percentage of delivery hospitals with policies and pre-printed orders for review of maternal records for HBsAg results and testing for HBsAg when appropriate

Target: 100%

Allowable funding source: 317 FA Operations

Performance measure: Percentage of delivery hospitals with policies and pre-printed orders for administration of post-exposure prophylaxis to infants born to HBsAg-positive women within 12 hours of birth

Target: 100%

Allowable funding source: 317 FA Operations

Performance measure: Percentage of delivery hospitals with policies and pre-printed orders for administration of post-exposure prophylaxis to infants born to HBsAg-unknown women within 12 hours of birth

Target: 100%

Allowable funding source: 317 FA Operations

Performance measure: Percentage of delivery hospitals with policies and pre-printed orders for administration of a dose of hepatitis B vaccine to all newborns prior to hospital discharge

Target: 85% (HP2020 goal)

Allowable funding source: 317 FA Operations

Completeness of reporting

- 5.3c. Increase completeness of reporting of HBsAg-positive pregnant women to the health department by prenatal care providers, delivery hospitals, and laboratories (refer to Guide to Life)

Performance measure: Percent change in completeness of reporting from prior year

Allowable funding source: 317 FA Operations

Monitor birth dose coverage

- 5.3d. Monitor the administration of a universal birth dose of hepatitis B vaccine by reviewing one of the following: annual NIS rates, universal birth dose administration rates from routine hospital record reviews, and/or analyzing the birth dose data in an immunization information system (IIS).

Performance measure: Percentage of ALL newborns receiving a birth dose of hepatitis B vaccine

Target: 90% (HP2020 Goal)

Allowable funding source: 317 FA Operations

Recommended objectives

- 5.3e. Maintain a listing of all laboratories that perform prenatal HBsAg testing (including delivery hospital laboratories) and confirm that positive HBsAg test results are being reported to the health department by these laboratories.
- 5.3f. Conduct reporting assessments at laboratories that collectively report at least 90% of all HBsAg-positive results to the health department (see “Sample Laboratory Site Visit Report” at <http://www.cdc.gov/hepatitis/Partners/PeriHepBCoord.htm>) during the current grant cycle (2008-2012). Be sure to include some hospital laboratories that run HBsAg assays in-house. Assessments may be accomplished by partnering with routine communicable disease laboratory reviews.

Performance measure: Percent of HBsAg-positive results reported to the health department by the laboratory

Allowable funding source: 317 FA Operations

5.4 Additional Recommended Objectives

- 5.4a. Work to establish a universal reporting mechanism (e.g., newborn metabolic screening card, electronic birth certificate, IIS) for HBsAg test results of pregnant women (indicating negative, positive, and unknown status and the test date) for all births for those states without such mechanisms.

Performance Measure: Efforts made to establish a universal reporting mechanism.

Allowable funding source: 317 FA Operations

- 5.4b. For states with a universal reporting mechanism, work to ensure the mechanism includes the date of the HBsAg test result.

Performance Measure: Efforts made to include the date of the HBsAg test result on the reporting mechanism.

Allowable funding source: 317 FA Operations

- 5.4c. Educate delivery hospitals on the universal hepatitis B birth dose recommendation and address barriers to implementing birth dose policies in delivery hospitals.

Performance Measure: Education and technical assistance provided to delivery hospitals about the universal hepatitis B birth dose recommendation.

Allowable funding source: 317 FA Operations

- 5.4d. Encourage delivery hospitals to enroll in the Vaccines for Children (VFC) program to obtain hepatitis B vaccine at no cost for VFC-eligible children.

Performance measure: Percentage of delivery hospitals enrolled in the VFC program.

Allowable funding source: 317 FA Operations

- 5.4e. Educate prenatal care providers about the need to perform hepatitis B risk assessment of all prenatal patients and fully vaccinate women at risk.

Performance measure: Periodically remind providers about the need to perform hepatitis B risk assessment of prenatal patients and fully vaccinate women at risk

Allowable funding source: 317 FA Operations

- 5.4f. Educate HBsAg-positive mothers and prenatal care providers about the appropriate follow-up and medical management of the mother (see 2005 ACIP statement, section “Prevention of Perinatal HBV Infection and Management of Pregnant Women”).

Performance measure: Provide appropriate materials to providers

Allowable funding source: 317 FA Operations

This document can be found on the CDC website at:

<http://www.cdc.gov/vaccines/vacgen/policies/ipom/downloads/chp-05-perinatal-hepb-508.pdf>