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MEMORANDUM

TO: Local Health Departments, IDPH Regional Health Offices, Birthing Hospitals and Centers, Perinatal Centers, Obstetric Healthcare Providers, and Pediatric Healthcare Providers

FROM: Office of Health Protection
Office of Women's Health and Family Services

DATE: April 17, 2017

SUBJECT: Perinatal Hepatitis B Prevention: Review of Program Components

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Hepatitis B virus (HBV) infection in pregnant women can be transmitted to the infant at birth and poses a serious health risk to the infant. Without immunoprophylaxis consisting of Hepatitis B immune globulin (HBIG) and Hepatitis B vaccination, an estimated 40% of infants born to HBV-infected mothers in the United States will develop chronic HBV infection. Approximately one-fourth of those infants will eventually die from chronic liver disease.

In 2015, providers reported 190 infants born to Hepatitis B surface antigen (HBsAg) positive women living in Illinois. The Illinois Department of Public Health (IDPH) Perinatal Hepatitis B Prevention Program, local health departments and other healthcare partners collaborate to implement guidelines from the Centers for Disease Control and Prevention (CDC) in an effort to prevent perinatal transmission of Hepatitis B. The purpose of this memo is to review the components of the program and the roles of public and private health care professionals in perinatal Hepatitis B prevention.

Role of Obstetrician/Prenatal Care Provider

Universal screening of pregnant women for Hepatitis B surface Antigen (HBsAg) during each pregnancy

- Illinois Control of Communicable Disease Code Section 690.451 states:
    - Pregnant women shall be tested for HBsAg during an early prenatal visit, or when they present to a hospital for delivery if prenatal serologic results are not available.
    - Pregnant women who are at high risk for hepatitis B infection (recent history of sexually transmitted disease, injection drug use, or other possible risks of hepatitis B infection) should be re-tested upon admission.
    - Health care providers shall refer pregnant women who are HBsAg positive within seven days after receipt of the test result to a local health authority for counseling and recommendations on testing and immunizing contacts.
- Illinois Control of Communicable Disease Code Section 690.200 requires:

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- Reporting of all HBsAg–positive laboratory results in pregnant women to the local health department perinatal hepatitis B case-management program to ensure that their infants receive timely post-exposure prophylaxis and follow-up
  - Verification of reporting of HBsAg positive results in pregnant women by the reference laboratory used; laboratories are required by to report all pregnant women with evidence of acute or chronic Hepatitis B infection and all positive results on any laboratory test indicative of and specific for detecting hepatitis B or hepatitis D infection
- A copy of the original laboratory report indicating the pregnant woman's HBsAg status should be provided to the hospital where delivery is planned and to the health care provider who will care for the newborn.
- Health care providers should refer HBsAg-positive women to a liver specialist for a medical evaluation and possible anti-viral therapy.
- Health care providers should provide education on prevention of Hepatitis B transmission to the patient. Topics should include hepatitis B vaccination for the infant and contacts, HBIG administration, and risk reduction strategies including condom use, avoidance of needle sharing, proper clean-up procedures for blood spills, covering open wounds, and avoiding other high risk behaviors for transmission.
- Routine prenatal care education for all pregnant women should include information regarding the rationale for and importance of newborn hepatitis B vaccination and immunoprophylaxis with HBIG.

Role of Delivery Hospitals/Birthing Centers

Labor & Delivery

- Upon admission, review the mother's HBsAg lab report.
- Only accept the original laboratory record of the HBsAg results, and do not rely on the handwritten prenatal record due to the possibility of transcription error or misunderstanding of the results or testing.
- Place a copy of the test result with the labor and delivery record and the infant's delivery record.
- Women admitted for delivery without documentation of HBsAg test results or with high risk behaviors (as discussed above) should have blood drawn and tested as soon as possible after admission.
- Alert the nursery if the mother is HBsAg positive, if the mother's HBsAg result is unknown, or if repeat HBsAg testing is indicated and has been ordered.

Nursery

- All infants born to HBsAg-positive women should receive:
  - Hepatitis B immune globulin (HBIG 0.5 mL) $\leq$12 hours of birth
  - Single-antigen hepatitis B vaccine $\leq$12 hours of birth
  - The hepatitis B vaccine and HBIG administered at different injection sites
- Document the date and time of administration of HBIG and Hepatitis B vaccine in the infant medical record. Ensure this information is included in Adverse Pregnancy Outcome Reporting System (APORS) reporting.
- For preterm infants weighing <2,000 grams who are born to a HBsAg positive mother, HBIG and the initial vaccine dose (birth dose) should be administered within 12 hours of birth, but this initial

vaccine dose will not be counted as part of the vaccine series because of the potentially reduced immunogenicity of hepatitis B vaccine in these infants. Additional doses of vaccine (for a total of four doses) should be administered beginning when the infant reaches age 1 month. Ensure parents receive education to explain this.

- For infants born to women with unknown HBsAg status:
  - Verify the HBsAg has been drawn on the mother, confirm the Nursery will be notified of the results, and monitor for laboratory results.
  - Administer the Hepatitis B vaccine within 12 hours of the infant's birth.
  - If the HBsAg result is positive, administer HBIG as soon as possible and within seven days of birth.

Birth dose of Hepatitis B Vaccine

- Administer the first dose of the hepatitis B vaccine to all infants according to the Advisory Committee on Immunization Practices (ACIP) recommendations. The 2017 ACIP recommendations have been revised to reflect that the birth dose of monovalent hepatitis B vaccine should be administered all medically stable infants weighing ≥ 2000 grams within 24 hours of birth.
- Preterm infants weighing fewer than 2000 grams born to HBsAg-negative mothers should receive the first dose of hepatitis B vaccine one month after birth or at hospital discharge.
- Educate staff and parents on the importance of the hepatitis B vaccine.
- Hospital policy should address standing orders for the hepatitis B vaccine birth dose, provision of the vaccine information statement (VIS), and parental education and consent.
- Consider enrollment in the federally funded Vaccines for Children (VFC) program to obtain free hepatitis B vaccine for administration of the birth dose to newborns who are eligible (i.e., Medicaid Title 19 eligible, American Indian or Alaska Native, or uninsured). Information on enrolling in the VFC program is available at the following link: http://www.dph.illinois.gov/topics-services/prevention-wellness/immunization/vfc-program.
- Consider routine documentation of vaccine doses in the Illinois immunization registry, I-CARE. Contact I-CARE at Dph.icare@illinois.gov or 217-785-1455 for more information on how this can be done through an import from the electronic medical record.

Role of Pediatric Care Providers

Newborn Admission

- Support implementation of a hospital policy for routine vaccination with hepatitis B vaccine to all newborns prior to discharge from the newborn nursery, as recommended by the ACIP, the American Academy of Pediatrics, the American Academy of Family Physicians, and the American College of Obstetricians and Gynecologists.
- Verify administration of hepatitis B vaccine and HBIG within 12 hours of birth for all infants born to HBsAg-positive women.
- Provide education to parents on hepatitis B disease, risk of perinatal transmission to infant, and the importance of completing the hepatitis B vaccination series and obtaining post-vaccination serologic evidence of immunity.

Pediatric Care

- The hepatitis B vaccine series should be completed according to the recommended schedule for infants born to HBsAg-positive mothers. The final dose in the hepatitis B vaccine series should not be administered before age 24 weeks (164 days).
- **Post-vaccination serologic testing** (PVST) of infants born to HBsAg-positive mothers should be performed at nine-18 months of age and within one to two months of completing the vaccine series.
  - PVST should never be done before nine months of age. This minimizes the likelihood of detecting passively transferred anti-HBs from HBIG and maximizes the likelihood of detecting late HBsAg-positive infections.
  - Following vaccination, HBsAg remains present in the blood for two to three weeks. Anti-HBs should be detectable within one month of receiving the vaccine. For this reason, when post-serologic testing is indicated, it should be performed one to two months following completion of the vaccine series but no sooner than nine months of age.
  - CDC recommends PVST include two HBV serologic tests: HBsAg (CPT: 87340) and Anti-HBs, quantitative (CPT: 86317) and/or qualitative (CPT: 86706)
  - The test should allow determination of protective level of anti-HBs (i.e. ≥10 mIU/mL) so please verify the laboratory test used provides this determination.
  - HBsAg-negative infants with anti-HBs levels ≥10 mIU/mL are considered protected.
  - HBsAg-negative infants with anti-HBs levels <10 mIU/mL should be revaccinated with a second three-dose series and retested one to two months after the final dose of vaccine.
- Infants who are HBsAg positive should receive appropriate medical follow-up.
- Provide documentation of vaccination and results of PVST to the local health department on all infants born to HBsAg-positive mothers.
- Consider enrollment in the federally funded Vaccines for Children (VFC) program to obtain free vaccine for administration of hepatitis B and other vaccines for infants and children who are eligible (i.e., Medicaid eligible, American Indian or Alaska Native, or uninsured).
- Consider routine documentation of vaccine doses in the Illinois Immunization registry, I-CARE. Contact I-CARE at Dph.icare@illinois.gov or 217-785-1455 for more information on how this can be done through an import from the electronic medical record.

Role of the Local Health Department

Case management of HBsAg-positive mothers and their infants

- Review all HBsAg-positive laboratory results in women of child-bearing age and determine pregnancy status.
- Collaborate with health care providers, delivery hospitals, laboratories, and families in your jurisdiction to ensure identification of HBsAg-positive mothers, treatment of infants at birth, timely completion of hepatitis B vaccination, timely and appropriate post-vaccination serologic testing, identification and referral of household contacts, and appropriate education to patients.
- Complete documentation of case management of mothers and infants in I-NEDSS.
- Provide follow-up education as needed to health care partners on reporting and appropriate immunoprophylaxis, vaccination, and testing.

If you have questions about anything in the memorandum, please contact your local health department or the IDPH communicable diseases section at 217-782-2016.

References:

1. Centers for Disease Control and Prevention. Hepatitis B Vaccination Recommendations for Infants, Children, and Adolescents. MMWR 2005;54(RR-16)
2. Centers for Disease Control and Prevention. Viral Hepatitis – Hepatitis B Information, perinatal Transmission. Available at https://www.cdc.gov/hepatitis/hbv/perinatalxmtn.htm .
3. Local Health Departments in Illinois: http://www.dph.illinois.gov/sites/default/files/publications/local%20health%20department%20directory%201.pdf