Hepatitis B in Pregnant Persons & Perinatal Hepatitis B

Workgroup Leader: Kelly Gillespie, MPH
Background

• Infants infected with HBV via vertical transmission have a ~90% of lifelong infection UNLESS given timely immunoprophylaxis
  • HBIG & 1st dose of HBV vaccine at time of birth

• Prevention activities include:
  ➢ Identification of HBV+ pregnant persons
  ➢ Identification of infants exposed to HBV during gestation & delivery

Perinatal Hepatitis B Guidance Link:
https://www.cdc.gov/hepatitis/statistics/surveillanceguidance/HepatitisB.htm#section3.7.1
Uses of Surveillance Data

1. Identify HBV+ pregnant persons
2. Monitor screening recommendations among pregnant persons
3. Monitor incidence & prevalence of HBV among persons able to bear children
4. Assess frequency & causes of missed opportunities
5. Monitor & evaluate effectiveness of the Perinatal Hepatitis B Prevention Program (PHBPP)
Hepatitis B in a Pregnant Person
Identification of HBV+ Pregnant Persons

- **Electronic Reporting**
  - ELR / EHR automatically reported to disease surveillance system

- **Determine Pregnancy Status**
  - For known HBV+ persons able to bear children

- **Enhanced Surveillance**
  - Compare birth certificate data to HBV+ cases in surveillance system
How to Increase Identification of HBV+ Pregnant Persons

- Educate providers to screen during EACH pregnancy
  - Prenatal screening is a major source of identification
  - Enables coordination to ensure infant will receive timely immunoprophylaxis

- Test HBV DNA level during 3rd trimester for all HBV+ pregnant persons
  - Recommend treatment if HBV DNA level >200,000 IU/mL
How to Increase Identification of HBV+ Pregnant Persons

- Ensure delivery facilities have standing orders to determine HBsAg status upon admission & test/retest if:
  1. Person has signs of hepatitis
  2. Status is unknown
  3. Person has risk factors for HBV
Perinatal Hepatitis B
Case Ascertainment

Receipt of provider or other report of hepatitis B virus (HBV) infection in a person ≤24 months of age

Contact provider to obtain laboratory report(s) indicating HBV infection

Receipt of HBV laboratory report(s) in a person ≤24 months of age

One or more of the following*:
- Positive hepatitis B surface antigen performed between 1-24 months of age and at least 4 weeks after last dose of the Hep B vaccine
- Positive hepatitis B e antigen test performed between 9-24 months of age
- Detectable HBV DNA performed between 9-24 months of age

Investigate place of birth to determine if patient was born in the United States

US-born

Unknown place of birth

Not US-born

Assess if patient meets acute or chronic hepatitis B case definition

Positive HBsAg or HBV DNA

Assess if patient meets acute or chronic hepatitis B case definition

Positive HBsAg

Negative HBsAg

Investigate gestational parent’s HBV infection status

Unknown

Probable perinatal hepatitis B case

Confirmed perinatal hepatitis B case

Decision Point
Perinatal Hepatitis B Case Classification

Demographic Criteria
• 1-24 months of age AND
• Born in U.S.

Epidemiologic Linkage Criterion
• Born to HBV+ gestational parent

Laboratory Criteria*
• HBsAg+ at 1-24 months & >4 weeks from last dose of vaccine OR
• HBeAg+ at 9-24 months OR
• HBV DNA+ at 9-24 months

*HBsAg results at <1 month and HBeAg and HBV DNA results at <9 months should NOT be used for classification
Case Scenarios
Case Scenario #1

Health department receives HBV DNA+ lab for an 18-month-old child who recently immigrated to the US. Investigation identified the gestation parent has chronic HBV. Neither the child nor the parent were in the disease surveillance system.

Demographic
- 1-24 months of age
- **X** Born inside the US

Epi Link
- ✓ Birth to HBV+ gestational parent

Laboratory Criteria
- ✓ HBV DNA+ at 9-24 months of age

**NOT A CASE**
Child was not born inside the United States.
- Check to see if meets acute or chronic case definition.
Case Scenario #2

Health department receives HBsAg+ lab for a 2-month-old infant who was born at a local delivery facility to a known HBV+ birth parent. Investigation determined lab was drawn same day as a dose the HBV vaccine was given.

**Demographic**
- 1-24 months of age
- Born in the US

**Epi Link**
- Birth to HBV+ gestational parent

**Laboratory Criteria**
- HBsAg+ at 1-24 months of age
- 🚧 Test 4 weeks after last dose of vaccine

UNABLE TO DETERMINE STATUS
Tests <4 weeks after a dose of HBV vaccine, test could be a false positive
- ➢ Recommend child get retested >4 weeks after an HBV vaccine dose
Case Scenario #3

Health department receives post-vaccine serological testing (PVST) results for a 12-month-old child who was born at a local delivery facility to a known HBV+ birth parent. The results were:

- HBsAg-positive
- HBsAb-negative

**Demographic**
- 1-24 months of age
- Born in the US

**Epi Link**
- Birth to HBV+ gestational parent

**Laboratory Criteria**
- HBsAg+ at 1-24 months of age

**CONFIRMED CASE**
Patient meets all criteria for a confirmed case of perinatal hepatitis B
Case Investigation
### Investigation Elements

<table>
<thead>
<tr>
<th></th>
<th>Needed for Parent</th>
<th>Needed for Infant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographics</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Provider Information</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Delivery Information</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>HBV Lab Results</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Symptoms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HBV DNA level in 3rd trimester &amp; if medication was given</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vaccination</td>
<td></td>
<td>HBIG &amp; vaccine series</td>
</tr>
</tbody>
</table>
Investigation Prioritizations

• Initiate investigation during pregnancy or as soon as possible thereafter for any HBV+ pregnant person.

• Investigate & follow-up with HBV+ persons able to bear children and:
  • Unknown pregnancy status
  • Co-infected with HIV/HCV/STI
  • HBV DNA levels >200,000 IU/mL
Perinatal Hepatitis B Workgroup Members

Kelly Gillespie – Philadelphia Department of Public Health
Jessie Gunter – Colorado Department of Public Health & Environment
Lyndsey Kircher – Louisiana Office of Public Health
Lee Rose Peters – Oregon Health Authority
Brianna Sprague – Colorado Department of Public Health & Environment