Texas Perinatal and Acute Hepatitis B Epidemiology Overview

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Outline

- PHBPP objectives
  - Overview
  - Progress
  - Summary
Six Main Objectives of the PHBPP

1. Identify ALL HBsAg positive pregnant women and their infants.
2. Identify and vaccinate susceptible household contacts ≤ 24 months of age; household contacts >24 months of age and sexual contacts are referred out.
3. Universal hepatitis B vaccine birth dose administration.
4. Assure administration of postexposure prophylaxis within 12 hours of birth to exposed infants.
5. Assure completion of hepatitis B vaccine series and Postvaccination Serologic Testing (PVST) of exposed infants.
6. Conduct active surveillance, quality assurance, outreach, and education to improve the PHBPP program.
ACIP Recommendations to Prevent PHB Transmission

Post-exposure prophylaxis with HBIG and hep B vaccine dose#1 w/in 12 hours of birth to all infants born to HBsAg-positive women

Completion of hepatitis B vaccine series & PVST

85%-95% effective in preventing perinatal HBV infection
All women should be screened prenatally and at delivery for HBsAg status

Pregnant woman tests HBsAg+

Mother enrolled in PHBPP

LHD/HSR ensure appropriate resources in place for infant prophylaxis
- Determine due date
- Ensures adequate measures in place with hospital/birthing facility to ensure HBIG/HBV 1 administered at birth

Infant Birth
PHBPP Follow-up of Infant

- **@Birth**
  - HBIG and HBV1 w/in 12 hours (but no later than 7 days)

- **@1-2 months old**
  - HBV2

- **@6 months old**
  - HBV3 (final dose should not be admin prior to 6 mos)

- **@9 months old**
  - PVST conducted
  - Screen for HBsAg (screen for disease) and anti-HBs (screen for adequate protection against disease)
Race of Mother’s Enrolled in PHBPP, 2014 vs 2015

2014
- Asian/Pacific Islander: 51%
- African American: 22%
- Hispanic: 8%
- Other: 14%
- Unknown: 0%

2015
- Asian/Pacific Islander: 53%
- African American: 26%
- Hispanic: 9%
- Other: 7%
- White: 5%
Mother’s Country of Birth, 2014

<table>
<thead>
<tr>
<th>Mother's Country of Birth</th>
<th>% of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIETNAM</td>
<td>24%</td>
</tr>
<tr>
<td>OTHER</td>
<td>22%</td>
</tr>
<tr>
<td>USA</td>
<td>17%</td>
</tr>
<tr>
<td>CHINA</td>
<td>12%</td>
</tr>
<tr>
<td>NIGERIA</td>
<td>6%</td>
</tr>
<tr>
<td>BURMA</td>
<td>3%</td>
</tr>
<tr>
<td>TAIWAN</td>
<td>3%</td>
</tr>
<tr>
<td>MEXICO</td>
<td>2%</td>
</tr>
<tr>
<td>INDIA</td>
<td>2%</td>
</tr>
<tr>
<td>CONGO</td>
<td>2%</td>
</tr>
<tr>
<td>PHILIPPINES</td>
<td>2%</td>
</tr>
<tr>
<td>KOREA</td>
<td>2%</td>
</tr>
<tr>
<td>CAMBODIA</td>
<td>1%</td>
</tr>
<tr>
<td>SOMALIA</td>
<td>1%</td>
</tr>
<tr>
<td>ETHIOPIA</td>
<td>1%</td>
</tr>
</tbody>
</table>
Mother’s Primary Spoken Language, 2014

- English: 78.6%
- Vietnamese: 6.3%
- Other: 3.7%
- Spanish: 3.7%
- Chinese: 3.4%
- French: 0.9%
- Arabic: 0.7%
- Korean: 0.6%
- Burmese: 0.5%
- Albanian: 0.4%
- Cambodian: 0.2%
- Farsi: 0.1%
- Latvian: 0.1%
- Russian: 0.1%
- Tagalog: 0.1%
- Unknown: 0.1%
- Urdu: 0.1%
PHBPP Progress in Meeting Key Program Objectives, 2011-2016*

*Data is provisional as of 7/12/16
Progress in Meeting NHANES PE, No. of Identified Births to HBsAg+ Women, 2012-2016*

- Previous NHANES Target: 1,503
- NHANES Target: 1,483

Year:
- 2012: 548 cases
- 2013: 562 cases
- 2014: 632 cases
- 2015*: 626 cases
- 2016*: 243 cases

*Data is provisional as of 7/12/16
Progress in Completing HBIG and HBV1 w/in 1 Calendar Day of Birth, 2013-2016*

<table>
<thead>
<tr>
<th>Year</th>
<th>Percent of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>95.6%</td>
</tr>
<tr>
<td>2014</td>
<td>97.6%</td>
</tr>
<tr>
<td>2015*</td>
<td>98.4%</td>
</tr>
<tr>
<td>2016*</td>
<td>95.8%</td>
</tr>
</tbody>
</table>

National average=96%

*Data is provisional as of 7/12/16
Progress in Timely Completion of HBIG and HBV1 w/in 1 Calendar Day of Birth and Completed a 3-dose HBV Series by 8 months of Age

National average=77%

Year | Percent of Cases with Timely Completion
--- | ---
2013 | 73%
2014 | 73%
2015* | 64%
2016* | 0%

*Data is provisional as of 7/12/16
Percent of Infants Receiving HBIG/HBV1 On Time by DSHS Health Service Region, 2014

National average: 96%

% of Infant Cases

<table>
<thead>
<tr>
<th>Year</th>
<th>HSR 1</th>
<th>HSR 2/3</th>
<th>HSR 4/5</th>
<th>HSR 6/5*</th>
<th>HSR 7</th>
<th>HSR 8*</th>
<th>HSR 9/10</th>
<th>HSR 11</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>92.9%</td>
<td>98.4%</td>
<td>94.7%</td>
<td>97.5%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>94.7%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

*Excluding City of Houston and City of San Antonio
Percent of Infants Receiving HBV3 On Time by DSHS Health Service Region, 2014

- HSR 1: 84.6%
- HSR 2/3: 73.6%
- HSR 4/5: 61.1%
- HSR 6/5*: 73.1%
- HSR 7: 90.7%
- HSR 8*: 80.0%
- HSR 9/10: 61.1%
- HSR 11: 38.9%

*Excluding City of Houston and City of San Antonio
Percent of Infants Receiving PVST On Time
by DSHS Health Service Region, 2014

% of Infant Cases

Year

HSR 1
HSR 2/3
HSR 4/5
HSR 6/5*
HSR 7
HSR 8*
HSR 9/10
HSR 11

23.1%
22.8%
16.7%
21.8%
38.4%
0.0%
16.7%
5.6%

*Excluding City of Houston and City of San Antonio
No. of Infants who Contracted Hepatitis B Perinatally in Texas, 2003-2016*

*Data is provisional as of 7/12/16
Perinatal Hepatitis B Summary

• Need more collaboration with other stakeholders to ensure awareness of PHBPP
• Successes
• Challenges
Acute Hepatitis B: Content Overview

- Recent trends in acute hepatitis B
- Overview of acute hepatitis B surveillance processes and how they impact perinatal case management
- Describe recent trends in the incidence of perinatal hepatitis B
- Perinatal hepatitis B case management
Reported Cases of Acute Hepatitis B in Texas, 1990-2015

- Universal infant vaccination
- Universal adolescent vaccination
- Texas hepatitis B school vaccine requirement
## Overview of Acute Hepatitis B Cases, 2011-2015

<table>
<thead>
<tr>
<th></th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case count</td>
<td>204</td>
<td>170</td>
<td>142</td>
<td>122</td>
<td>159</td>
</tr>
<tr>
<td>Female</td>
<td>76 (37%)</td>
<td>49 (29%)</td>
<td>54 (38%)</td>
<td>44 (36%)</td>
<td>46 (29%)</td>
</tr>
<tr>
<td>Hospitalized</td>
<td>62 (30%)</td>
<td>60 (35%)</td>
<td>68 (48%)</td>
<td>74 (61%)</td>
<td>80 (50%)</td>
</tr>
<tr>
<td>Vaccinated</td>
<td>2 (1%)</td>
<td>4 (2%)</td>
<td>4 (3%)</td>
<td>6 (5%)</td>
<td>8 (5%)</td>
</tr>
<tr>
<td>Pregnant</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>
Acute Hepatitis B Cases by Age Group, 2011-2015
Acute Hepatitis B Cases by County, 2011-2015
### Risk Factors among Acute Hepatitis B Cases, 2011-2015*

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Known contact w/ hep B pt</td>
<td>11 (5%)</td>
<td>3 (2%)</td>
<td>9 (6%)</td>
<td>8 (7%)</td>
<td>16 (10%)</td>
</tr>
<tr>
<td>Recent healthcare</td>
<td>32 (16%)</td>
<td>16 (9%)</td>
<td>19 (13%)</td>
<td>25 (20%)</td>
<td>24 (15%)</td>
</tr>
<tr>
<td>Drug use, jail, tattoo/piercing</td>
<td>23 (11%)</td>
<td>11 (6%)</td>
<td>18 (13%)</td>
<td>21 (15%)</td>
<td>34 (21%)</td>
</tr>
<tr>
<td>&gt;1 sex partner</td>
<td>21 (10%)</td>
<td>12 (7%)</td>
<td>17 (12%)</td>
<td>13 (11%)</td>
<td>19 (12%)</td>
</tr>
</tbody>
</table>

*Patients may report more than one risk factor. High percentage of missing data.
Acute Hepatitis B Case Definition

• Hepatitis B IgM antibody or surface antigen positive positive AND
• Not known to be chronically infected AND
  – Acute onset of symptoms (fatigue, diarrhea, nausea, vomiting, abdominal pain, headache, malaise) OR
  – Jaundice OR
  – Elevated liver function tests (ALT > 100 IU/L)

OR

• Documentation of conversion from a negative sAg result to a positive HBV marker (DNA, genotype, sAg, or IgM)
Challenges with Acute Hepatitis B Surveillance

Overcounting Cases
- Chronic carriers in liver failure: symptomatic, elevated LFTs
- Chronic carriers may not know or disclose status to public health
- No prior lab results known to public health, so chronic status not identified

Undercounting Cases
- Asymptomatic infection
- Underreporting by providers
- Cases may not seek medical care
- Serial testing unlikely, so conversions not captured
- High volume of lab results for follow up
Volume of Electronically Reported Lab Results

2014
• 80,324 hepatitis B lab results
  – 16,987 surface antigen
  – 2,777 IgM antibody

2015
• 103,344 hepatitis B lab results
  – 20,442 surface antigen
  – 5,100 IgM antibody

*Based on specimen collection date. Not unique patients.
### sAg Results Perinatal Case Management

<table>
<thead>
<tr>
<th></th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Surface Antigen Results</strong></td>
<td>16,987</td>
<td>20,442</td>
</tr>
<tr>
<td><strong>Females</strong></td>
<td>8,138 (48%)</td>
<td>9,583 (47%)</td>
</tr>
<tr>
<td><strong>Females, age 13-55</strong></td>
<td>6,139 (36%)</td>
<td>6,983 (34%)</td>
</tr>
<tr>
<td><strong>Pregnancy noted on lab result</strong></td>
<td>310 (5%)</td>
<td>302 (4%)</td>
</tr>
<tr>
<td><strong>Total number of labs needing f/u to determine pregnancy</strong></td>
<td>5,829 (34%)</td>
<td>6,681 (33%)</td>
</tr>
</tbody>
</table>
Summary

• Acute hepatitis B decreasing, possibly reaching a plateau
• Increasing volume of hepatitis lab results make identifying pregnant women with hepatitis B challenging
• Integration between hepatitis B surveillance and perinatal prevention program has increased identification of moms to enroll
Thank you

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Thank you!