Hepatitis B Birth Dose: Policies, Progress & Strategies

Amy Warner, MPH, Program Manager
Kathy Gaines, RN, MPH, Nurse Consultant
Briana Sprague, Case Manager
Perinatal Hepatitis B Prevention Unit
Viral Hepatitis Program
Colorado Department of Public Health and Environment
Objectives

- Understand the epidemiology of hepatitis B in Colorado
- Identify who to screen for hepatitis B
- Understand the progress toward universal vaccination
- Identify 2-3 services provided by Perinatal Hepatitis B Prevention Case Management
Hepatitis B Virus
Acute vs. Chronic

• Acute (new infection)
  – HBsAg+ (Hepatitis B Surface Antigen)
  – HBcIgm +

• Chronic (enduring infection)
  – HBsAg +
  – HBcIgm –

• Also HBeAg, HBcAb,

• anti-HBs
About Hepatitis B Infection

• Spread by:
  – Sexual
  – Parenteral
  – Perinatal
Reported Cases of Hepatitis B, Colorado

Source: Colorado Electronic Disease Reporting System

Viral Hepatitis Program
http://www.hepatitiscolorado.info

ph: 303-692-2780
fax: 303-759-5257
Reported Cases of Hepatitis B by Race, Colorado 2008-2012
Hepatitis B Complications

- Fulminant hepatitis
- Hospitalization
- Cirrhosis
- Hepatocellular carcinoma
- Death

# deaths reported by year

<table>
<thead>
<tr>
<th>Year</th>
<th>Reported Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>27</td>
</tr>
<tr>
<td>2009</td>
<td>31</td>
</tr>
<tr>
<td>2010</td>
<td>20</td>
</tr>
<tr>
<td>2011</td>
<td>26</td>
</tr>
<tr>
<td>2012</td>
<td>24</td>
</tr>
</tbody>
</table>

*Colorado Death Certificate
Who is at Risk?

**Behaviors**
- Household contacts
- Sexual contacts
- Men who have sex with men
- Persons with >1 sex partner or with an STI

**Place or Condition**
- People born in endemic countries
- Persons with HIV
- Children born to infected mothers

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FIGURE 3. Geographic distribution of chronic hepatitis B virus (HBV) infection — worldwide, 2006*

* For multiple countries, estimates of prevalence of hepatitis B surface antigen (HBsAg), a marker of chronic HBV infection, are based on limited data and might not reflect current prevalence in countries that have implemented childhood hepatitis B vaccination. In addition, HBsAg prevalence might vary within countries by subpopulation and locality.

http://healthteamworks-media.precis5.com/9246444d94f081e3549803b928260f56
An Immigrant Story of Hepatitis B

- http://www.youtube.com/watch?v=xiS4GH2ntyQ&list=PLXIvWapxrktK84PPBTalp412nVUqkaQry&index=8

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Goal: Eliminate the spread of hepatitis B

- Universal birth dose of hepatitis B vaccine
- School entry requirements for hepatitis B
- Catch-up vaccination for adolescents and adults
- Investigate acute cases and immunize contacts
- Link chronic cases to care (including pregnant women)
Hepatitis B Vaccine Birth Dose

- Protects infants born to mothers that aren’t identified perinatally.
- Protects infants at risk for infection after the perinatal period.
- Associated with higher rates of on-time completion of hepatitis B vaccine series.
- Some studies show an association with improved completion rates for all other infant vaccines.

MMWR 2005:54:8-9
Universal Birth Dose in Colorado

Review birthing hospital hepatitis B policies and procedures
## Policies on Hepatitis B: 56 Colorado Delivery Hospitals

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did the hospital have a policy?</td>
<td>53</td>
<td>3</td>
</tr>
<tr>
<td>Did the policy ensure maternal HBsAg testing prenatally or at the time of admission</td>
<td>42</td>
<td>14</td>
</tr>
<tr>
<td>Did the hospital test all moms with unknown HBsAg status?</td>
<td>47</td>
<td>9</td>
</tr>
<tr>
<td>Did the hospital test moms with a known risk during pregnancy?</td>
<td>11</td>
<td>45</td>
</tr>
<tr>
<td>Was patient education about the transmission of Hepatitis B done with mom?</td>
<td>24</td>
<td>32</td>
</tr>
</tbody>
</table>

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### Policies on Hepatitis B: 56 Colorado Delivery Hospitals

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<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did the hospital offer hepatitis B vaccine to all newborns before leaving the hospital</td>
<td>22</td>
<td>34</td>
</tr>
<tr>
<td>Was HBIG administered to infant if mom is HBsAg positive?</td>
<td>51</td>
<td>5</td>
</tr>
<tr>
<td>Was Hepatitis B vaccine administered to infant if mom is HBsAg positive?</td>
<td>51</td>
<td>5</td>
</tr>
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<td>36</td>
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</table>
Universal Birth Dose in Colorado

How to implement it?

• 13 Colorado hospitals had 90% birth dose rate and birth dose policy

• 11 agreed to answer a 16 question assessment of strategies employed to achieve a high HBV birth dose rate
Universal Birth Dose in Colorado

Standing orders were used by all of the hospitals with 90% or better HBV birth dose rates.

A structured workflow enhanced the success of a universal hepatitis B vaccine initiative
Universal Birth Dose in Colorado

- CDPHE efforts to help hospitals achieve 90% Hepatitis B vaccination rate
  - Staff education
    - MD champions presentations; presentations to RN groups
  - Networking
    - Exhibiting at conferences, abstracts, posters & presence at meetings
  - Repeat the message over and over
  - Provide resources
    - Perinatal CD education, print and web materials
Welcome!

This program has been designed to educate hospital labor and delivery staff and nursery staff on perinatal hepatitis B prevention. It is a short (about 20 minute) program designed to cover the following topics related to perinatal hepatitis B prevention:

- The liver and hepatitis
- Risk factors and mode of transmission for hepatitis B
- Symptoms of hepatitis B infection
- Hepatitis B burden in the US and in Colorado
- Testing for hepatitis B in pregnant women
- Vaccination of newborns to prevent hepatitis B infection
- Post vaccination testing
- Hepatitis B and the healthcare worker
- Helpful resources

Please click the next button at the top right-hand side of the page to continue.
Hospitals that are succeeding


– Hepatitis B: What hospitals need to do to protect newborns

– Assisted and encouraged Colorado hospitals with application to honor roll

– Two hospital applications in process
Colorado’s Progress toward universal vaccination

% Infants Receiving the Birth Dose In Colorado

Year

Percentage

2008 2009 2010 2011 2012

71%

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Routine Vaccination in Colorado

• School Entry
  – Routine vaccination of previously unvaccinated children & teens
  – Kindergarten/school entry
    • 2012-2013  94.3 (CI 91.3-96.5)

• Teens
  – Vaccinate in settings that provide health-care services to teens
    • HBV  96.4% total (CI +/-2.1) (Colorado)
Number of Acute Cases Reported Since School Entry Requirement Implemented 1997-2012

Number of Acute Cases Reported Since School Entry Requirement Implemented

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Routine Adult Vaccination

- At risk for sexual exposure
- Injection drug users
- Household contacts of persons with chronic HBV infection
- Developmentally disabled persons in long-term care facilities
- Persons at risk for occupational exposure to HBV infection
- Hemodialysis patients
- Persons with chronic liver disease
- Travelers to HBV-endemic regions
- HIV-positive persons
Goal: limit the progression of liver disease caused by HBV

• What are the counseling messages?
• Who needs medical follow-up?
Counseling Messages for the Chronically Infected

• Vaccinate sexual contacts
• Don’t share toothbrushes or razors
• Cover open cuts, scratches
• Clean blood spills with detergent or bleach
• DO NOT DONATE BLOOD, ORGANS, SPERM
Counseling Messages for the Chronically Infected

• Can participate in all activities including contact sports
• Should not be excluded from daycare, school, or work
• Should not be isolated from other children
• Can share food, utensils or a kiss
• Breastfeeding?
Medical Follow-up

• Initial evaluation including thorough history and physical
  – Risk factors (coinfection? Alcohol use? Family history?)
  – Laboratory tests to assess liver disease and coinfections with HCV, HDV or HIV
  – Vaccination for hepatitis A

• Begin treatment or continue monitoring at 3-12 month intervals
Medical Follow-up: Pregnant Women

• Capitalize on period of insurance
• Minimize risk to infant:
  – Treatment is available during pregnancy for women with a specific clinical profile.
• Link women to ongoing care
Perinatal Case Management Overview

• Prevent the spread of hepatitis B
• Provide hepatitis B education in a variety of languages
• Provide screening
• Assist susceptible contacts get vaccinated
• Provide case management for infants
• Provide clinical staff training around hepatitis B

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Identification of Perinatal Cases

• HBsAg screening as part of a pregnant woman’s prenatal panel

• Hospital screening of a woman at time of delivery if status is unknown
Prenatal Testing

• All pregnant women should be tested routinely for hepatitis B surface antigen during an early prenatal visit (e.g. first trimester) in each pregnancy, even if they have been previously vaccinated or tested.

MMWR 2005:54:13

Who: Prenatal and obstetrical care providers, hospitals
Perinatal Hepatitis B Transmission
In the absence of post exposure prophylaxis*

• If mother is positive for HBsAg and HBeAg
  – 70-90% of infants become infected
  – 90% of infected infants become chronic carriers

• If mother is positive for HBsAg only
  – <10% of infants infected
  – 90% of infected infants become chronic carriers

*MMWR 2005:54:5
Ensuring Baby get Prophylaxis at Birth

- Mother’s prenatal labs transmitted to the delivery hospital
- Case Manager confirms pregnancy
- Case Manager faxes letters to the delivery hospital
Perinatal Case Management goes on…

• Anticipated Pediatrician

• Recommended hepatitis B vaccine schedule

• Post vaccination testing
Post Vaccine Testing for the Baby

Should be completed between 9-18 months of age and the recommended tests to order are:

- Hepatitis B surface antigen (HBsAg) – this test will tell us if the baby became infected despite immunoprophylaxis

- Hepatitis B surface antibody (HBsAb or anti-HBs) – this test will tell us if the baby developed immunity from hepatitis B vaccination

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Why is Post-vaccination Testing Important?

• Identifies those infants who are not protected

• Identifies the infants that have became chronically infected
Case Outcomes
Infants born in 2012

- 170 infants case managed/year
- 98% of infants received HBIG and dose 1 within 12 hours of birth
- 88% correctly vaccinated by 12 months of age (90% by 15 months)
- 85% receive post-vaccination testing by 18 months of age
Resources for Providers

Quick Reference

For Care of Infants born to Hepatitis B Infected Mothers

Prevent Hepatitis B

Viral Hepatitis Program
http://www.hepatitiscolorado.info
QUESTIONS???

Thank you!
Amy Warner, MPH, Program Manager
303-692-2763
amy.warner@state.co.us

Kathy Gaines, RN, MPH, Nurse Consultant
303-692-2619
kathy.gaines@state.co.us

Briana Sprague, Case Manager
303-692-2761
briana.sprague@state.co.us