Perinatal Hepatitis B Case Management 2014

Massachusetts Department of Public Health
Immunization Program
Outline

- Overview of hepatitis B disease burden
- Prevalence of perinatal transmission of hepatitis B in Massachusetts
- Current status of perinatal hepatitis B case management in Massachusetts
- Public Health Nursing’s role in hepatitis B prevention
Background on hepatitis B

- Hepatitis B is a liver disease caused by the hepatitis B virus (HBV).
- HBV is found in the blood and other body fluids of infected people (e.g., serum, semen, saliva, and vaginal secretions).
- An infant can acquire HBV from:
  - An infected mother (transmitted at birth)
  - A chronically infected member of the household
Worldwide Rates of Chronic Hepatitis B

Rates of Chronic Hepatitis B Infection
- High
- Moderate
- Low
Hepatitis B - United States, 1978-2009

- Decline among men who have sex with men
- Decline among IV drug users
- Hepatitis B vaccine licensed

* 2012 The Pink Book 12th Edition
Perinatal Hepatitis B and Hepatitis B Vaccine Requirements in MA

- 105 CMR 300.000 (1985) Requires all hepatitis B positive labs be reported to MDPH
- Perinatal Hepatitis B Program started in 1989
- In 1992 started universal vaccination of all children
- 105 CMR 130.627 (1993) Requires all pregnant women be tested for hepatitis B during each pregnancy
- Provides hepatitis B vaccine free of charge to birth hospitals and providers
Acute confirmed cases of HBV infection, 2002-2012*

*Data as of 8/29/13 and are subject to change
Source: MDPH Office of Integrated Surveillance and Informatics Services

+48 acute suspect cases in 2012=123 cases investigated
Confirmed and probable chronic cases of HBV infection, 2002-2012*

*Data as of 8/29/13 and are subject to change
Source: MDPH Office of Integrated Surveillance and Informatics Services
Confirmed and probable chronic cases of HBV infection in 2012: Demographics

- Average Age: 42 years
- Gender: 45% female, 55% male
- Majority of cases are A/PI
- Likely represents immigrants from HBV endemic countries

2012 reported confirmed and probable chronic HBV infections = 1,806

*Data as of 8/29/13 and are subject to change.
Source: MDPH Office of Integrated Surveillance and Informatics Services
Risk of developing chronic hepatitis B by age at infection

- Infant: 90%
- 1-5 years: 30%
- > 5 years: <5%
Modes of HBV Transmission in Early Childhood

- Vertical transmission from mother to infant
- Horizontal transmission from infected household contact to child

> Both modes of transmission can be prevented by vaccination of newborns!
Massachusetts Births

- 70,000+ births each year in MA
- 27.4% of mothers are non-us born, up from 20.8% in 2000*

Who are our HBsAg+ Moms?

- <1% of births are to HBsAg+ women
  - 80% non-us born API**
  - 9% Black Non-Hispanic**
  - 7% White Non-Hispanic**
  - 3% US born API**

* Source: MA Dept of Public Health, Bureau of Health Information, Statistics, Research, and Evaluation-2010 Births
* *2010 CDC Point Estimate for Massachusetts
Hepatitis B Perinatal Transmission*

- If mother positive for HBsAg and HBeAg
  - 70%-90% of infants infected
  - 90% of infected infants become chronically infected

- If positive for HBsAg only
  - 5%-20% of infants infected
  - 90% of infected infants become chronically infected

*in the absence of postexposure prophylaxis
MA Department of Public Health, Perinatal Hepatitis B Program transitioned from an Access based data management system to a web-based surveillance system, MAVEN, on 9/17/06

Case management is now done from the managers' individual desktop and shared with program management in “real time”
Methods of Identification

- Laboratories report HBsAg+ results to MAVEN, pregnancy status is determined
  - 100% of birthing hospital labs reporting via ELR
- Prenatal care providers report cases
- HBsAg+ women self report
- Hospitals report cases directly into MAVEN via Teleform
- Universal reporting mechanisms (birth certificate, newborn screening) detect cases retrospectively

New!
CDC Estimated vs. Reported MA Births to HBsAg+ Women

*Source of CDC’s HBsAg prevalence estimates: National Health and Nutrition Examination Survey, 1999-2006 & medical literature review
Timing of Hepatitis B Vaccine for Infants Born to HBsAg Positive Women

- HBIG and dose 1 within 24 hours
- Dose 2 at 1-2 months of age
- Dose 3 a minimum of 8 weeks after second dose, and at least 16 weeks after first dose and not before 24 weeks of age
Preterm Infants <2000 grams

- Birth dose and HBIG if mother HBsAg positive (within 12 hours of birth)
  - Repeat vaccine dose when reach 2000 grams

- Preterm infants who weigh less than 2,000 grams have a decreased response to vaccine administered before 1 month of age

- Delay first dose until chronologic age 1 month if mother HBsAg negative
So how are we doing????
Infants Born to HBsAg Positive Women in MA

- 99.5% 91% 81%

- HBIG and hepB dose 1 within 24 hours of birth. Nationally 92%
- HBIG and 3 doses of hepB by 8 months. Nationally 72%
- HBIG, 3 hepB by 8 mos and PVS by 18 months. Nationally 52%
How Public Health Nursing Can Help
Identification of Pregnant HBsAg Positive Woman

- Report to the Perinatal Program HBsAg positive pregnant woman in your community to MDPH Immunization Program at: (617) 983-6800
Local Public Health Institute of Massachusetts MAVEN Training

http://sph.bu.edu/otlt/LPHI/MAVEN/
Estimated vaccination coverage with Hep B Birth Dose* for children 19-35 months, Massachusetts vs. US, 2003 – 2012

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Birth Hospital Record Review, MA

- US Birth Dose Rate
- MA Birth Dose Rate
Household and Sexual Contacts to HBsAg Positive Pregnant Women in MA

- MAVEN
- Access Database

- Contacts to HBsAg positive women identified
- 1 or more doses of hepatitis B vaccine
Role of LBOH in the Perinatal Hepatitis B Program

- LBOH have access to Maven
- Perinatal Case Managers will notify LBOH via Maven of cases requiring contact investigation
- Pregnant women and their infants will be case managed and followed by the Regional Immunization Nurses or RIHP
- Contact investigation and vaccination will be followed by LBOH
- LBOH able to enter vaccination data and susceptibility information from contact investigation directly into Maven
Core Data Elements: Contacts

- Name
- Demographics
- Pre-vaccination test results, date
- Hepatitis B vaccine doses & dates
- Post-vaccination test results (household and sexual contacts)
Role of the MIIS
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- Data feed from Vital Records began January 1, 2012
- Provides MIIS users with access to infant and mother demographics, infant birth dose if administered at the hospital
- Gives users access to vaccine information on contacts
- Drawback: data availability in the MIIS dependent on when birth hospital sends to eVitals
  - Sometimes a delay in getting information, but overall has been very helpful for case management
Participation in the MIIS

- 2010 legislation requires all immunizing health care providers to report vaccine administration to the MIIS
- Registration for the MIIS considered a key component for pandemic preparedness – register ASAP if you haven’t already
- *New Roster Entry functionality coming this summer to help streamline data entry for flu clinics
- MIIS staff has a table here today, available to answer questions
Learn more about the MIIS

- Contact MIIS Resource Center: [www.contactmiis.info](http://www.contactmiis.info)
- MDPH Immunization Program: [www.mass.gov/dph/miis](http://www.mass.gov/dph/miis)
- Questions:
  - Email: miishelpdesk@state.ma.us
  - Phone: 617-983-4335
  - Fax: 617-983-4301
Thank you!!!