

Low Levels of Hepatitis B Knowledge and Practice Among Perinatal Nurses

Chrissy Cheung, MPH

Perinatal Research Coordinator
Asian Liver Center at Stanford University

Hepatitis B Prevention Coordinator
Santa Clara County Public Health Department



HEP
M&MS.ORG

Learning Objectives



1. To identify and understand the risks and risk factors of chronic hepatitis B infection and the importance of newborn immunization
2. To understand current levels of hepatitis B knowledge and preventive practices among perinatal nurses in Santa Clara County, California
3. To identify ways to partner with public health departments and hospitals in addressing gaps in knowledge and prevention

Hepatitis B is One of the Most Neglected Global Epidemics

- **240** million worldwide have chronic (life-long) HBV infection (*compare with 33 million living with HIV*)^{1,2}
- Without appropriate treatment or monitoring, **1 in 4 person** with chronic HBV will die of liver cancer, cirrhosis or liver failure
- HBV takes a **700,000 to 1 million** lives a year^{1,2}
- **60-80%** of primary liver cancer (Hepatocellular carcinoma)



1 CDC. Available at: www.cdc.gov/ncidod/diseases/hepatitis/b/faqb.htm

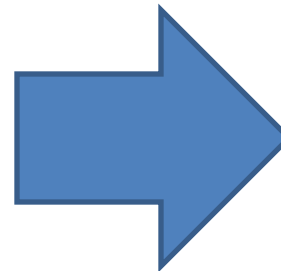
2.WHO. Available at: www.who.int/csr/disease/hepatitis/en/

Chronic HBV Infection: A Silent Killer Among Asians and Pacific Islanders

- **1 in 10** foreign born Asian and Pacific Islanders (API) are chronically infected (compared with *1 in 1000* Caucasians)
- **2 out of 3** API tested positive are not aware they are infected
- Most people with chronic HBV infection have no symptoms, even early liver cancer often has no symptoms



75% of those who die of chronic HBV acquired their infection before age 10, **40%** acquired it at birth



**Perinatal
prevention
is key!**

GAP: Poor case identification

Identified and Expected Births to HBsAg-Positive Mothers, US, 1993-2003



GAP: Poor ACIP compliance

- Of infants born to **HBsAg+ women**, 38% did not receive HBV birth dose/HBIG in 12 hours
- Of infants born to **women of unknown status**, 48% not vaccinated at 12 hours and 20% still not vaccinated by discharge
- Of infants born to **HBsAg- women**, only 69% vaccinated by discharge
- U.S. National birth dose immunization rate:
 - **D1 63%, D3 71%** (CDC 2012)



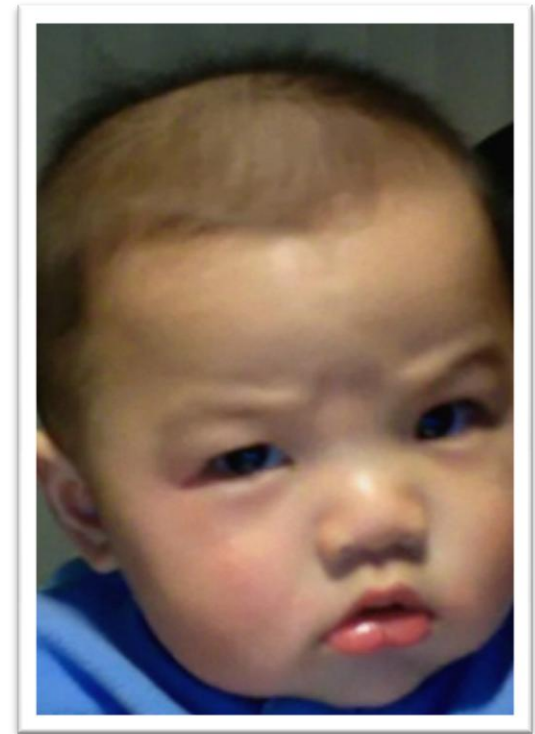
GAP: Poor ACIP compliance

- No lab copy of test results
 - 87.2% cases missing lab copy
- Clinicians misinterpret and mis-transcribe test results
 - Of 27 women with documented POSITIVE HBsAg test result, in 15 cases the maternal test result was different or missing in the infant chart –
medical error rate of >50%



CONSEQUENCES

- **800-1,600** infants are likely to be infected each year compared with fewer than **30** infants born to HIV positive women
- HBsAg+ women not identified for case management
- HBsAg+ pregnant women are not referred to appropriate medical management
- Identification, screening, and management of household contacts still lacking



STUDY OBJECTIVE

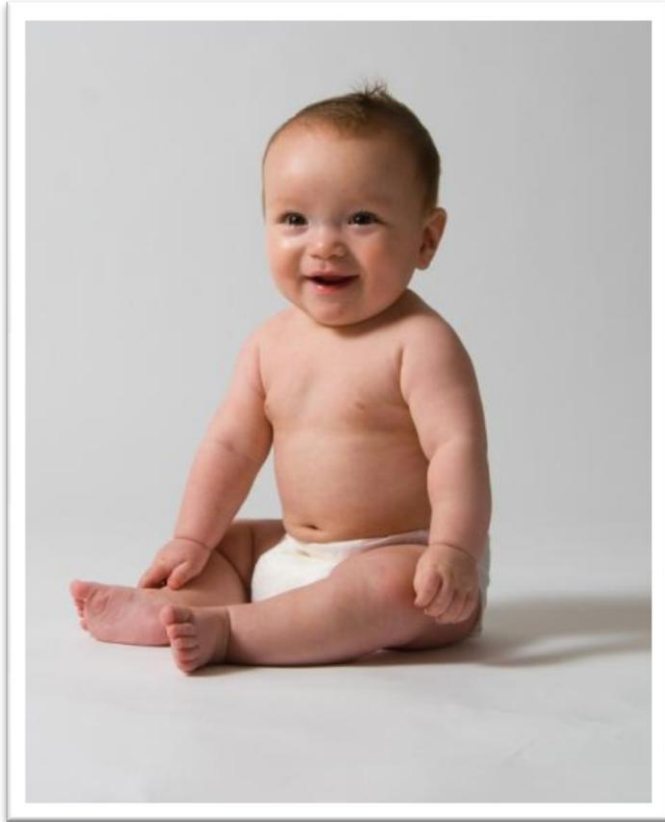
To assess current levels of knowledge and clinical practice related to hepatitis B among perinatal nurses in a U.S. population at high risk of chronic hepatitis B

...

To improve population-wide perinatal hepatitis B prevention



METHODS



- Cross-sectional study
- IRB approved
- Location: Santa Clara County
- Self-administered 18 question multiple choice surveys:
 - Current HBV practices
 - Current HBV knowledge
 - Post-seminar HBV practices (future)
 - Post-seminar HBV knowledge
- Exclusions:
 - Nurses who omitted more than ½ the questions in a given survey section

METHODS

RN education provided at hospital-wide nurse competency trainings or skills days, during weekly staff meetings and at seminars in between nursing shifts

...

81 sessions on 31 separate days



NURSE DEMOGRAPHICS

N

- N=518

Gender

- Female= 99%

Experience

- Range= 20-69 years
- Mean= 44 years
- Median= 44 years

Ethnicity

- Asian= 42%
- Non-Hispanic White= 37%

RESULTS: Practice Survey

<i>N=481, questions only asked pre-seminar</i>	<i>Pre-seminar</i>
1. Have you ever had a pregnant patient who tested positive for HBsAg?	80%
2. Do you routinely provide education information about hepatitis B to HBsAg+ pregnant patients?	51%
3. Do you routinely advise HBsAg+ pregnant women to consult with a liver specialist or internist ?	17%
4. Do you routinely inform HBsAg+ pregnant women that it is important to receive a birth dose within 12 hours ?	78%
5. Do you routinely inform HBsAg+ pregnant women that it is important to receive HBIG within 12 hours ?	75%
6. Do you routinely inform HBsAg+ pregnant women that their infants need to receive 2nd and 3rd doses ?	62%
7. Do you routinely inform HBsAg+ pregnant women that their infants should be tested for HBsAg and anti-Hbs between 9-18 months?	19%
8. Do you routinely advise HBsAg+ pregnant women that their household and sexual contacts should be tested?	34%

RESULTS: Knowledge Survey

<i>N=481</i>	<i>Pre-seminar</i>
1. Hepatitis B can lead to which of the following health outcomes ?	90%
2. About 1 in __ foreign-born Asian and Pacific Islander Americans have chronic hepatitis B	14%
3. If a newborn is infected with hepatitis B, what is the chance that he or she will develop chronic infection?	16%
4. What are the symptoms of most people with chronic hepatitis B?	22%
5. Without appropriate monitoring or treatment, what are the chances that a person will die from chronic hepatitis B?	26%

RESULTS: Knowledge Survey

<i>N=481</i>	<i>Pre-seminar</i>	<i>Post-seminar</i>
1. Hepatitis B can lead to which of the following health outcomes ?	90%	95%
2. About 1 in __ foreign-born Asian and Pacific Islander Americans have chronic hepatitis B	14%	95%
3. If a newborn is infected with hepatitis B, what is the chance that he or she will develop chronic infection?	16%	93%
4. What are the symptoms of most people with chronic hepatitis B?	22%	86%
5. Without appropriate monitoring or treatment, what are the chances that a person will die from chronic hepatitis B?	26%	90%

All changes in knowledge statistically significant , $P < 0.0001$ vs. pre-seminar knowledge

RESULTS: Post-Seminar



- Nearly all nurses reported that they would educate all foreign-born Asian and Pacific Islander patients about chronic hepatitis B
- All nurses reported that they would provide hepatitis B educational materials to their patients
- All nurses reported that the session was useful

RESULTS

- Pre-seminar knowledge was not associated with pre-existing preventive clinical practices
- The change in knowledge did not significantly vary between nurses who reported following and not following hepatitis B preventive practices.



DISCUSSION

Low existing level of hepatitis B related knowledge
and clinical practice among perinatal nurses

WHY?

QUALITATIVE STUDY

Education and Counseling of Pregnant Patients with Chronic Hepatitis B: Perspectives from Obstetricians and Perinatal Nurses in Santa Clara County, California



- To better understand the barriers to hepatitis B prevention
- To investigate reasons for poor hepatitis B knowledge and delivery of education to HBsAg-positive pregnant women in Santa Clara County, California.

QUALITATIVE STUDY

- IRB approved
- Location: Santa Clara County, California
- Semi-structured, face-to-face interviews with 33 obstetricians and perinatal nurses
- Interviews transcribed. Data was coded, organized and developed into themes



QUALITATIVE STUDY: THEMES

Lack of Self Efficacy

- Lack of training and preparation in medical and nursing school
- Poor knowledge of hepatitis B

Patient Cues

- Patient apathy, stigma, and preferential concern for short-term health issues
- Doubt about efficacy of patient education

Environmental Factors

- Lack of time and resources
- Failures in the system
- Importance of accurate educational resources

DISCUSSION

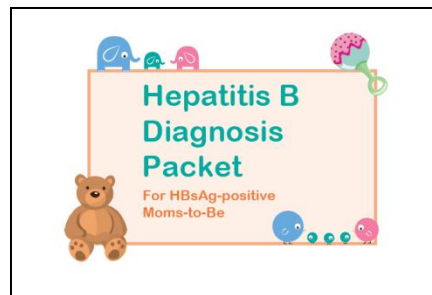
- Low existing level of hepatitis B related knowledge and clinical practice among perinatal nurses
- Effective education and training efforts are needed
- In-service seminars can successfully increase nurse knowledge about hepatitis B
- Institutional changes within the government, hospitals, and insurance companies may serve to improve hepatitis B prevention

Partners and coalition-building within the community is key!

EDUCATIONAL MATERIALS



- Diagnosis Packets for obstetricians
- Hospital Discharge Packets for new moms
- Educational brochures
- Provider education materials
- FREE of charge!



CHRONIC HEPATITIS B MONITORING
&
LIVER CANCER SCREENING
RECORD

Name _____
Birthdate _____
Allergies _____



HEP B DATA BY STATE

CALIFORNIA

CONTACT THE STAFF

**PERINATAL HEPATITIS B
DATA COORDINATOR:**
William (Billy) Luong
Email: William.Luong@cdph.ca.gov
Phone: 510-620-3728
Fax: 510-620-3949

ADDRESS:
CDPH Immunization Branch
850 Marina Bay Pkwy
Building P, 2nd Floor
Richmond, CA, 94804-6403

VPD EPIDEMIOLOGIST:
Jennifer Zipprich
Email: Jennifer.Zipprich@cdph.ca.gov
Phone: 510-620-3848

For a list of CA County Hepatitis B Prevention
Program Coordinators:
<http://www.cdph.ca.gov/HealthInfo/discond/Docs/ments/CAPHPPCoordinators.pdf>

SCREENING REQUIREMENTS

Does the jurisdiction require screening of
pregnant women for hepatitis B infection or
hepatitis B surface antigen (HBsAg)?

Does the jurisdiction specifically require
reporting of positive HBsAg status in pregnant
women?

Yes - Cal. Health & Safety Code § 125080 and
Cal. Health & Safety Code § 125085

Yes - Cal. Health & Safety Code § 125085

COMPLETION OF HEPATITIS B VACCINATION SERIES

3 or more doses among children 19-35 months of age

	Percentage of children 19-35 months of age receiving 3 or more doses	Rank among other states	U.S. National Average	#1 ranked state and coverage
1995	73.0 ± 5.2%	14	67.9 ± 1.3%	88.5 ± 5.4% (South Carolina)
1996	80.3 ± 3.5%	29	81.8 ± 0.9%	95.8 ± 2.2% (South Carolina)
1997	81.2 ± 3.4%	40	83.6 ± 0.8%	91.6 ± 4.2% (New Jersey)
1998	87.1 ± 2.9%	26	87.0 ± 0.7%	94.1 ± 2.7% (South Carolina)
1999	87.9 ± 2.8%	30	88.1 ± 0.7%	94.0 ± 3.1% (Rhode Island)
2000	90.8 ± 2.3%	23	90.3 ± 0.6%	96.4 ± 1.9% (Rhode Island)
2001	88.8 ± 2.8%	28	88.9 ± 0.7%	95.8 ± 2.2% (Rhode Island)
2002	88.2 ± 3.0%	40	89.9 ± 0.7%	97.0 ± 2.0% (Rhode Island)
2003	90.4 ± 2.8%	35	92.4 ± 0.6%	98.2 ± 1.4% (Connecticut)
2004	90.4 ± 2.6%	41	92.4 ± 0.6%	96.8 ± 1.7% (Florida)
2005	92.6 ± 2.3%	27	92.9 ± 0.6%	97.9 ± 2.0% (Massachusetts)
2006	95.0 ± 1.7%	16	93.3 ± 0.6%	97.8 ± 1.6% (Rhode Island)
2007	91.6 ± 3.2%	41	92.7 ± 0.7%	98.6 ± 1.5% (New Hampshire)
2008	94.7 ± 2.5%	15	93.5 ± 0.7%	98.1 ± 1.6% (Connecticut)
2009	90.3 ± 3.7%	36	92.4 ± 0.7%	98.8 ± 1.5% (Rhode Island)
2010	90.1 ± 3.8%	39	91.8 ± 1.5%	98.3 ± 1.5% (North Dakota)
2011	90.3 ± 3.2%	34	91.1 ± 0.7%	97.1 ± 1.7% (Louisiana)

Data compiled by the ALC from National Immunization Surveys, 1995-2011¹,
<http://www.cdc.gov/vaccines/imzstats/surveys/default.htm#nhs>

MICHIGAN

CONTACT THE STAFF

STATE COORDINATOR:
Pat Fineis
Email: fineisp@michigan.gov
Phone: 517-335-9443 or 800-964-4487
Fax: 517-335-9855 C

STATE ADDRESS:
Immunization Division
Michigan Department of Comm. Health
201 Townsend St
Lansing MI 48913

STATE CASE MANAGEMENT:
Marcy Smith
Email: smithm7@michigan.gov
Phone: 517-335-8122
Fax: 517-335-9855 C

DETROIT COORDINATOR:
Kari Tapley
Email: tapleyk@michigan.gov
Phone: 313-456-4431
Fax: 313-456-4427 C

DETROIT ADDRESS:
Michigan Department of Comm. Health
Detroit Regional Office
3056 West Grand Blvd, Suite 3-150
Detroit, MI 48202

DETROIT CASE MANAGEMENT:
Sallie Pray
Email: prays@michigan.gov
Phone: 313-456-4432
Fax: 313-456-4427 C

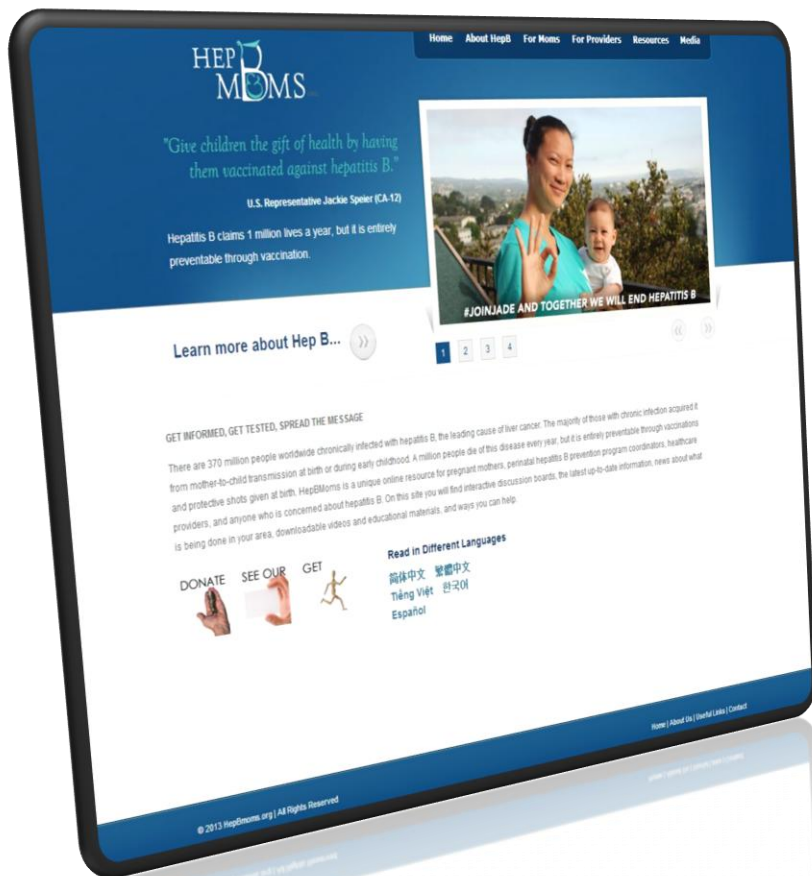
SCREENING REQUIREMENTS

Does the jurisdiction require screening of
pregnant women for hepatitis B infection or
hepatitis B surface antigen (HBsAg)?

Does the jurisdiction specifically require
reporting of positive HBsAg status in pregnant
women?

Yes - Mich. Comp. Laws § 333.5123

Yes - Mich. Admin. Code r. 325.172 and Mich.
Admin. Code r. 325.173



www.HepBMoms.org

Dedicated to the prevention of perinatal transmission of hepatitis B

This website was developed as a resource for moms, health care providers, and public health officials to reduce perinatal hepatitis B transmission and the associated health consequences.



THANK YOU

Contact information

Chrissy Cheung

Chris.Cheung@phd.sccgov.org

(408)792-1384