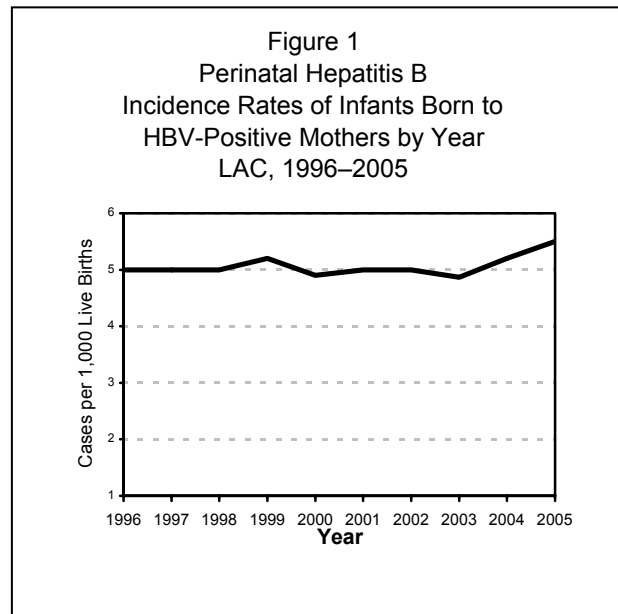




HEPATITIS B, PERINATAL

CRUDE DATA	
Number of Infants Born to HBsAg Positive Mothers	768
Incidence of Exposure ^a	
LA County	5.5
United States	N/A
Age at Diagnosis	
Mean	N/A
Median	N/A
Range	N/A
Case Fatality	
LA County	0.0%
United States	N/A



^a Number of Infants born to HBsAg-positive mothers per 1,000 live births.

DESCRIPTION

Hepatitis B is a vaccine-preventable disease transmitted through parenteral or mucous membrane exposure to blood and other body fluids of individuals infected with the hepatitis B virus (HBV). It is also transmitted from mother to infant during birth. Within LAC, it is estimated that over 40% of infants born to hepatitis B surface antigen (HBsAg) positive women will become infected without prophylaxis. An estimated 90% of infants who become infected by perinatal transmission develop chronic HBV infection and up to 25% will die from chronic liver disease as adults. Hepatitis B vaccination and one dose of hepatitis B immune globulin (HBIG), administered within 24 hours after birth, are 85–95% effective in preventing both HBV infection and the chronic carrier state. Post-vaccination serologic testing is recommended 3–18 months after completing immunoprophylaxis to verify vaccine success or failure. The Immunization Program's Perinatal Hepatitis B Prevention Program (PHBPP) conducts case management of HBsAg-positive pregnant women, their newborns, and household contacts.

DISEASE ABSTRACT

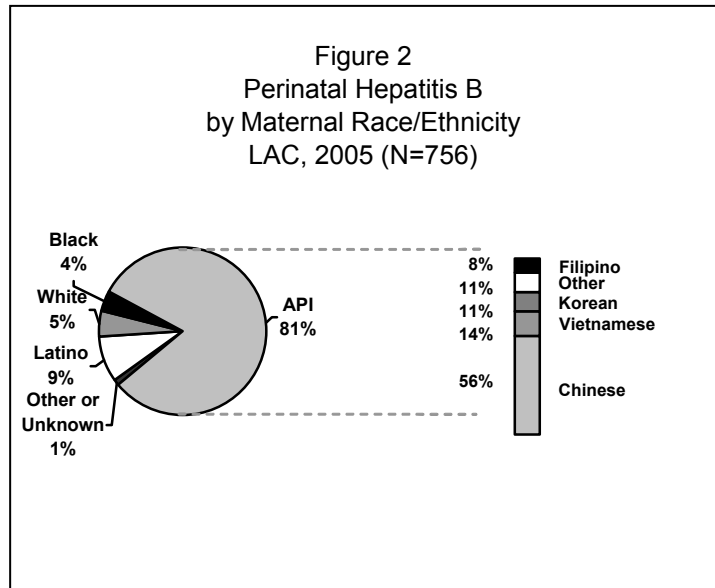
- The majority of HBsAg-positive women giving birth were born in areas of the world with high or intermediate levels of endemic hepatitis B disease (e.g., Asia, Africa, Eastern Europe, Newly Independent States of the former Soviet Union, Middle East, and several Central and South American counties).
- Of infants born to HBsAg-positive mothers, 98% received hepatitis B vaccine and 97% received HBIG within 24 hours of birth.
- Among those infants whose pediatric health care providers responded to a survey after the completion of the full vaccination series, 97% of infants were protected against HBV, 2% were still susceptible, and 1% were infected with HBV.
- The incidence of exposure of infants born to HBsAg-positive mothers increased by 4% from 5.3 births per 1,000 infants born in 2004 to 5.5 births per 1,000 infants born in 2005.



STRATIFIED DATA

Trends: In 2005, 768 infants (including 12 sets of twins) were born to 756 HBsAg-positive women. The incidence exposure of infants born to HBsAg-positive mothers increased 4% from 2004 (Figure 1).

Race/Ethnicity: The majority of the cases were among Asian/Pacific Islanders (API). Six hundred fourteen (81%) of the women were API, 69 (9%) were Latino, 36 (5%) were White, 33 (4%) were Black, and 4 (1%) were classified as other or unknown ethnic group (Figure 2). Of API women, half were Chinese (n=344, 56%). The remaining API women included: Vietnamese (n=87, 14%), Korean (n=64, 10%), Filipino (n=53, 8%), and others from various API countries (e.g., Cambodia, Thailand, Samoa, Tonga, Japan, Laos, Burma, Indonesia; India, and Bangladesh (n=66, 11%).



Age: The age-range of mothers was 16–47 years of age with a median age of 31 years.

Location: The majority of the HBsAg-positive mothers (n=353, 47%) resided in SPA 3, which has a large Asian/Pacific Islander constituency. An additional 13% resided in SPA 2 (n=99), followed by SPA 4 (n=82, 11%), SPA 8 (n=74, 10%), SPA 7 (n=62, 8%), SPA 6 (n=37, 5%), SPA 5 (n=36, 5%), and SPA 1 (n=8, 1%).

Countries of Origin: The majority (n=688, 91%) of the HBsAg-positive women giving birth were born outside of the US. Of these women, 629 (91%) were born in areas of the world with high or intermediate levels of endemic hepatitis B disease, such as Asia, Africa, Eastern Europe, Newly Independent States of the former Soviet Union, Middle East, and several Central and South American countries.

CASES COMPLETED FOR FOLLOW-UP IN 2005

In 2005, follow-up was completed for 678 women, their 693 newborns, and 1,204 household contacts. One hundred-seven mothers were excluded (73 mothers miscarried, terminated or had fetal demise, 11 transferred/moved out of LAC or were unable to be located before delivery, and 23 were retested and found to be HBsAg negative). Case managers made numerous attempts to complete follow up of infants and household contacts; therefore, some of the cases completed in 2005 were reported in 2003 and 2004.

Enhanced case management protocol includes:

1. Educating pregnant HBsAg-positive women about HBV disease and transmission,
2. Identifying and referring household contacts for screening and vaccination,
3. Notifying hospitals of the expected deliveries and requesting that the hospitals return documentation after the infant's birth with the dates and times of the administration of hepatitis B vaccine #1 and HBIG,
4. Notifying the infant's health care provider about the need for hepatitis B vaccine #2 at 1 to 2 months and hepatitis B vaccine #3 at six months of age,
5. Reminding parents about these needed vaccinations, and
6. Sending post-vaccination serology letters to pediatric health care providers.



Infant Immunoprophylaxis Completion Rates: Of 693 eligible infants (including 15 sets of twins), nearly all received the hepatitis B vaccine #1 (n=678, 98%) and HBIG (n= 675, 97%) within 24 hours of birth. The majority of infants (n=648, 94%) received HBIG and a complete three-dose series of hepatitis B vaccine (Table 1).

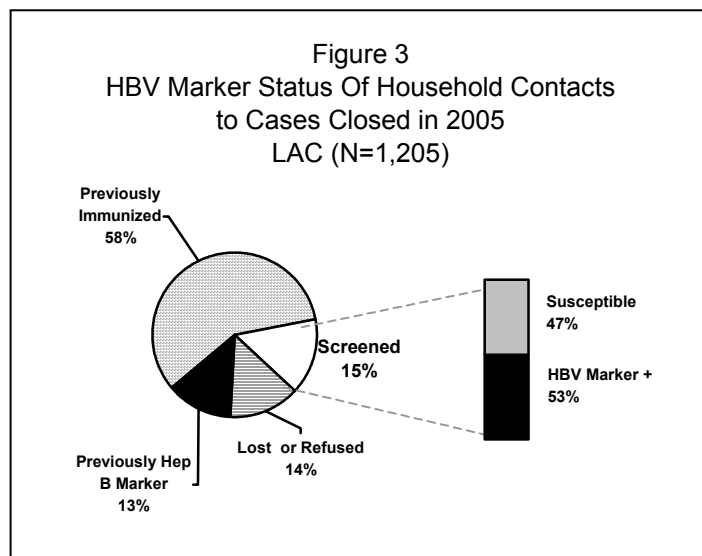
Table 1. Summary of Infant Hepatitis B Immunoprophylaxis, LAC—2005 (N=693)

Hepatitis B Immunoprophylaxis	# of Infants	Percent*
Received hepatitis B vaccine #1 ≤ 12 hours after birth	670	97%
Received hepatitis B vaccine #1 ≤ 24 hours after birth	678	98%
Received HBIG ≤ 12 hours after birth	664	96%
Received HBIG ≤ 24 hours after birth	675	97%
Completed HBIG/3-dose hepatitis B vaccine series	648	94%

* Percent of infants receiving hepatitis B immunoprophylaxis out of a total 693 infants born to 678 HBsAg+ mothers who completed follow-up in 2005. Total includes infants who moved out of LAC prior to 6 months of age and prior to completion of the 3-dose hepatitis B vaccine.

Household and Sexual Contacts Completion Rates:

A household contact was defined as an individual with anticipated continuous household exposure for greater than one year (often limited to nuclear family). Of 1,205 household and sexual contacts identified, 694 (58%) had already been vaccinated against hepatitis B, and 161 (13%) were known to have serologic evidence of hepatitis B infection. Of the remaining 350 (29%) contacts, 184 (15%) were screened for serologic evidence of hepatitis B infection or immunity, while 166 (14%) refused screening or vaccination, were lost to follow-up, or moved. Of the 184 (15%) household contacts that were serologically screened, 97 (53%) had positive markers for hepatitis B and therefore did not need vaccine.



Close to half of the screened household contacts (n=87, 47%) were seronegative, and therefore, susceptible to hepatitis B infection (Figure 3). At the time of completion of case management for the HBsAg-positive mothers, 70 (81%) of these susceptible household contacts had completed all three doses of hepatitis B vaccine.

Post-Vaccination Serology Results: Post-vaccination serology testing of infants born to HBsAg-positive mothers is recommended 3 to 18 months after completing immunoprophylaxis to verify efficacy of the hepatitis B immunoprophylaxis. Letters requesting post-vaccination serology results were mailed to pediatric health care providers of infants tracked by the PHBPP. Post-vaccination serology results were received for 334 infants screened in 2005. Of these, 323 (97%) had antibodies to hepatitis B surface antigen indicating protection against HBV, 3 (1%) were HBsAg-positive and infected, and 8 (2%) were negative for both markers and revaccination was recommended.

ADDITIONAL RESOURCES

Additional information is available from the CDC:

- General information – www.cdc.gov/ncidod/diseases/hepatitis/b/index.htm
- Publications – www.cdc.gov/ncidod/diseases/hepatitis/resource/pubs.htm
- Viral Hepatitis B Virus slide set – www.cdc.gov/ncidod/diseases/hepatitis/slideset/hep_b/slide_1.htm



Information from Hepatitis organizations include:

- Immunization Action Coalition – www.immunize.org
Hepatitis B Foundation – www.hepb.org