HEPATITIS B, PERINATAL

CRUDE DATA	
Infants Born to HBsAg+ Mothers	773
HBsAg+ Infants	2
Incidence of Exposure[a]	
LA County	5.6
Maternal Age at Diagnosis	
Mean	31.6 years
Median	32 years
Range	15-46 years
Infant Age at Diagnosis	
Mean	12.5 months
Median	12.5 months
Range	12-13 months

[a]Number of infants born to HBsAg-positive mothers per 1000 live births in 2008.

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. In Los Angeles County (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. Post-exposure prophylaxis with hepatitis B vaccine and hepatitis B immune globulin (HBIG) administered 12 to 24 hours after birth, followed by completion of a 3-dose vaccine series, has been demonstrated to be 85 to 95% effective in preventing acute and chronic HBV infection in infants born to mothers who are positive for both HBsAg and hepatitis B e-antigen. Post-vaccination serologic (PVS) testing is recommended at age 9–18 months after completing immunoprophylaxis to verify vaccine success or failure. The LAC Immunization Program's Perinatal Hepatitis B Prevention Program (PHBPP) conducts enhanced case management of HBsAg-positive pregnant women, their newborns, and household and sexual contacts (SC). Household contacts (HHC) are defined as an individual(s) with anticipated continuous household exposure for greater than one year (often limited to nuclear family).

2009 TRENDS AND HIGHLIGHTS

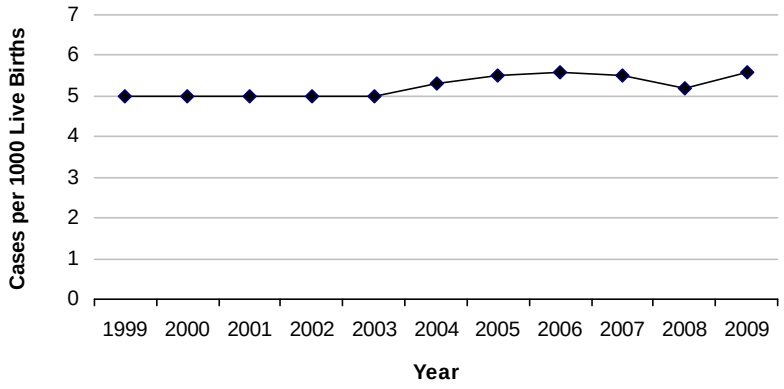
- In 2009, 773 infants (including 13 twins) were born to 760 HBsAg+ women.
- In 2009, the incidence of exposure increased by 8% from 5.2 to 5.6 per 1000 infants born in 2008 (Figure 1).
- Over 68.4% (n=520) of women screened for HBsAg were between 15 and 34 years of age.
- As consistent with previous years, in 2009, the majority of HBsAg+ women were Asian (n=557, 73.3%) followed by white (n=110, 14.5%), Other unknown (n=44, 5.8%), black (n=35, 4.6%), and Pacific Islanders (n=14, 1.8%) (Figures 2 and 3).
- The majority of HBsAg+ women reside in Service Planning Area (SPA) 3 (n=355, 46.7%), which has a large Asian population (Figure 4).
- The majority of infants received the first dose of Hepatitis B vaccine and HBIG within 12 hours of birth (Figure 5).
- In 2009, 15.9 % (n=123) of infants born to HBsAg+ women received post-vaccination serology (PVS) testing to determine immunity to hepatitis B after receipt of one dose of HBIG and completion of the three dose hepatitis B vaccination series. PVS results for two infants were HBsAg +, indicating infection (Figure 6).
- The majority of HHCs 39% were among the age groups 0-10 years (n=438) and 31-40 years (n=326, 29%) (Figure 7).
- Of the household contacts screened (n=175, 16%), 6 % (n=11) were infected, 69% (n=120), were immune, and 25% (n=44) were susceptible to hepatitis B. The Hepatitis B vaccine series was recommended for those who were susceptible (Figure 8).

Reported Hepatitis B, Perinatal Cases and Rates* per 100,000 by Maternal Age Group, Race/Ethnicity, and SPA
Los Angeles County, 2005-2009

	2005 (N=762)			2006 (N=803)			2007 (N=774)			2008 (N=778)			2009 (N=760)		
	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000	No.	(%)	Rate/ 100,000
Age Group															
<1	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
1-4	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
5-14	0	0.0	0.0	0	0.0	0.0	1	0.1	0.1	0	0.0	0.0	0	0.0	0.0
15-34	572	75.1	20.4	613	76.3	22.0	567	73.3	20.1	550	70.7	19.2	520	58.4	18.4
35-44	187	24.5	12.4	190	23.7	12.6	206	26.6	13.7	225	28.9	14.9	237	31.2	10.7
45-54	3	0.4	0.2	0	0.0	0.0	0	0.0	0.0	3	0.4	0.2	3	0.4	0.2
55-64	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
65+	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
Unknown	0	0.0		0	0.0		0	0.0		0	0.0		0	0.0	
Race/Ethnicity															
Asian	619	81.2	49.2	627	78.1	49.3	636	82.2	49.5	611	78.5	46.9	570	75.0	43.8
Black	35	4.6	4.1	30	3.7	3.6	28	3.6	3.3	32	4.1	3.7	33	4.0	3.9
Hispanic	70	9.2	1.5	90	11.2	1.9	70	9.0	1.5	71	9.1	1.5	76	10.0	1.6
White	35	4.6	1.2	51	6.4	1.8	29	3.7	1.0	30	3.9	1.0	40	5.0	1.4
Other	3	0.4	10.6	4	0.5	14.0	11	1.4	52.8	34	4.4	137	41	5.0	1.6
Unknown	0	0.0		1	0.1		0	0.0		0	0.0		0	0.0	
SPA															
1	8	1.0	2.3	6	0.7	1.7	8	1.0	2.2	4	0.5	1.1	6	0.8	1.6
2	100	13.1	4.7	99	12.3	4.6	100	12.9	4.6	96	12.3	4.4	117	15.4	5.3
3	361	47.4	21.1	396	49.3	23.0	392	50.6	22.7	394	50.6	22.7	355	46.7	20.5
4	81	10.6	6.5	97	12.1	7.7	88	11.4	7.0	96	12.3	7.5	83	10.9	6.7
5	36	4.7	5.7	37	4.6	5.8	33	4.3	5.2	37	4.8	5.7	32	4.2	4.9
6	38	5.0	3.7	41	5.1	3.9	33	4.3	3.2	43	5.5	4.1	38	5.0	3.6
7	62	8.1	4.5	58	7.2	4.2	54	7.0	3.9	55	7.1	4.0	50	6.6	3.6
8	76	10.0	6.9	56	7.0	5.0	66	8.5	5.9	50	6.4	4.4	75	9.9	6.7
Unknown	0	0.0		13	1.6		0	0.0		3	0.4		4	0.5	

*Rates calculated based on less than 19 cases or events are considered unreliable

**Figure 1. Perinatal Hepatitis B Incidence of Exposure
LAC, 1999-2009**



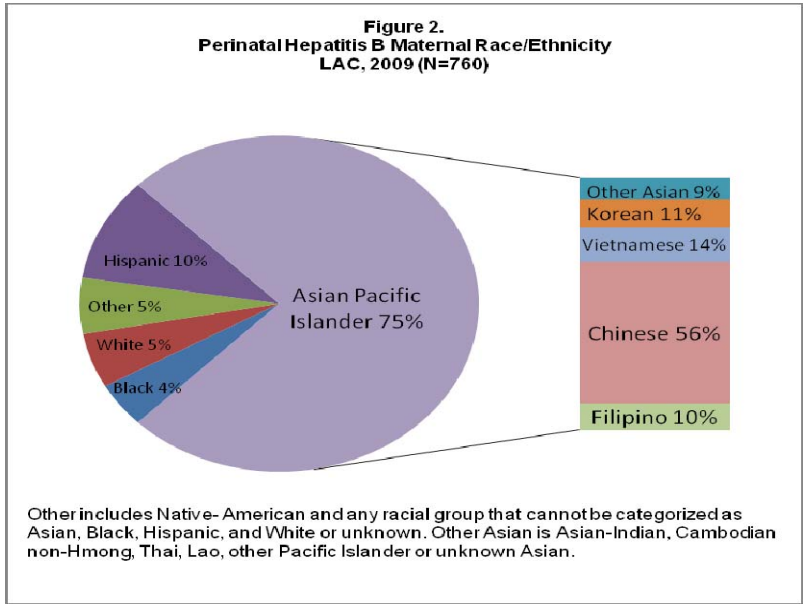


**Figure 3. Perinatal Hepatitis B Maternal Race/Ethnicity
LAC, 2004-2009 (N=4610)**

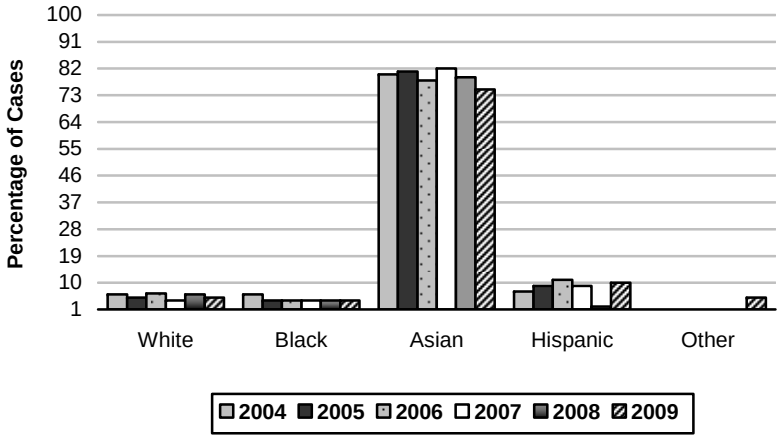


**Figure 4. Perinatal Hepatitis B Maternal by SPA
LAC, 2009 (N=760)**

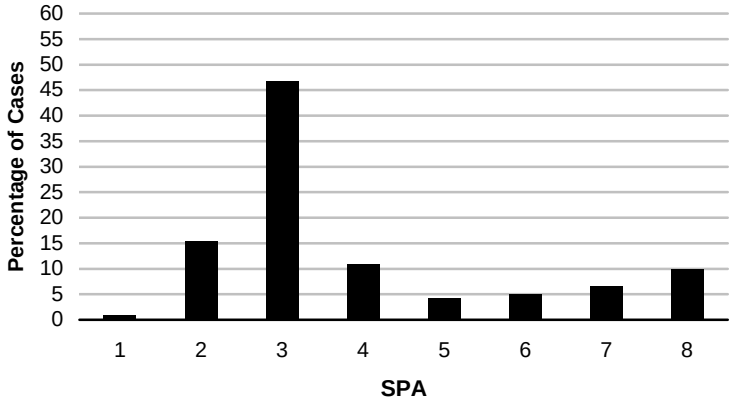


Figure 5. Perinatal Hepatitis B Summary of Infant Hepatitis B Immunoprophylaxis, LAC, 2009 (N=773)

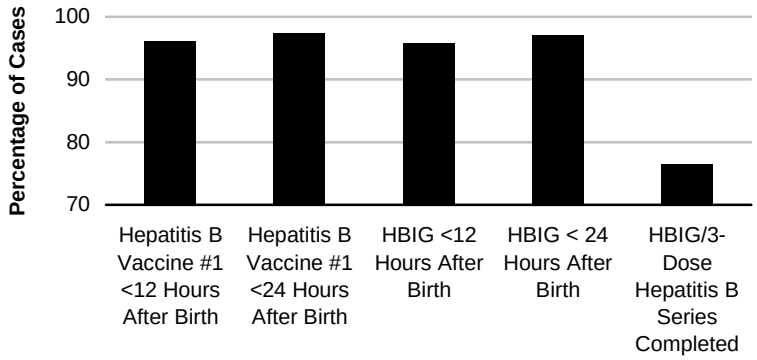
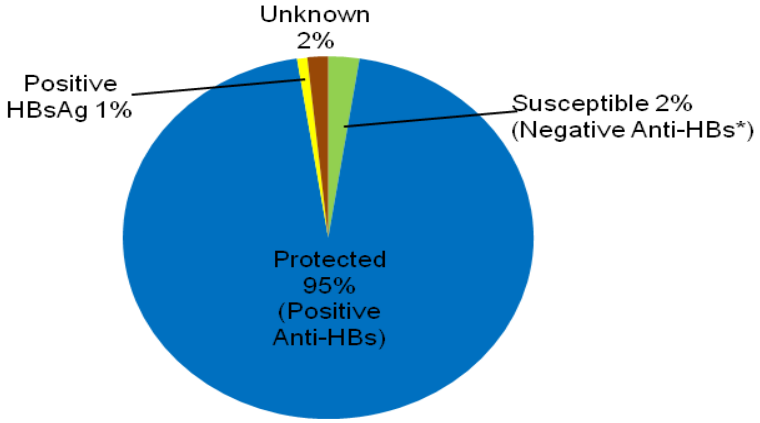


Figure 6. Perinatal Hepatitis B Infant Post Vaccination Serology Results LAC, 2009 (N=123)



*Antibody to Hepatitis B Surface Antigen

Figure 7. Perinatal Hepatitis B Household and Sexual Contacts Age Range, LAC, 2009 (N=1126)

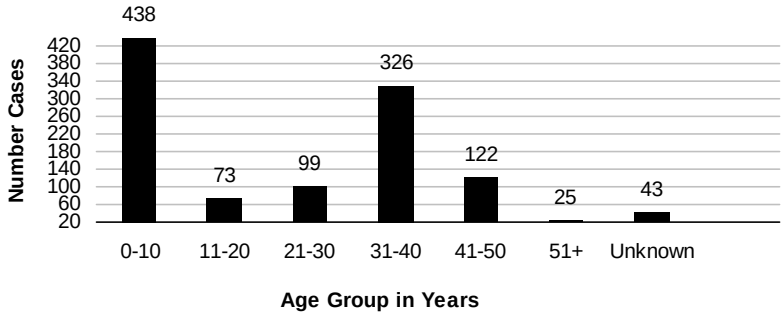


Figure 8. Hepatitis B Status of Household Contacts LAC, 2009 (N=1126)