



HEPATITIS B, PERINATAL

CRUDE DATA	
Infants Born to HBsAg+ Mothers	915
Incidence of Exposure ^a LA County	6.7
HBsAg+ Infant ^b	1
Maternal Age at Diagnosis	38 years
Infant Age at Diagnosis	9 months

^aNumber of infants born to HBsAg-positive mothers per 1000 live births in 2013.

^bBased on number of infants that had post vaccine serology testing.

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). A woman can transmit the HBV to her infant during pregnancy and from exposure to cervical secretions and blood during the birthing process. In Los Angeles County (LAC), it is estimated that over 40% of infants born to hepatitis B surface antigen (HBsAg) positive women would 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 (PEP) with hepatitis B vaccine and hepatitis B immune globulin (HBIG) administered 12 to 24 hours after birth, followed by completion of a three-dose vaccine series, has demonstrated 85%-95% effectiveness in preventing acute and chronic HBV infection in infants born to mothers who are positive for both HBsAg and hepatitis B e-antigen. However, efficacy is enhanced if administered within 12 hours of birth. Post-vaccination serologic (PVS) testing is recommended at age 9-18 months after completing PEP to verify vaccine success or failure. The LAC Immunization Program's Perinatal Hepatitis B Prevention Unit (PHBPU) 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

to the HBsAg-positive mother for greater than one year (often limited to nuclear family).

2013 TRENDS AND HIGHLIGHTS

- Nine hundred and fifteen infants (includes twelve sets of twins) were born to 891 HBsAg+ women.
- The incidence of exposure increased by 3% from 6.5 to 6.7 per 1000 infants born in 2013 compared to 2012 (Figure 1).
- Sixty-one percent (n=544) of women screened for HBsAg were 15-34 years of age (Figure 7).
- Eighty-eight percent (n=782) of HBsAg+ women were born outside of the United States.
- Eighty percent (n=712) of HBsAg+ women were Asian followed by 5% (n=51) unknown, 5% (n=44) Hispanic, 4% (n=32) black, 3% (n= 28) other and 3% (n=24) white (Figures 2 and 3).
- Sixty-five percent (n=580) of the HBsAg+ women reside in Service Planning Area (SPA) 3, which has a large Asian population (Figure 4).
- Ninety-five percent (n=867) of infants received the first dose of Hepatitis B vaccine and HBIG within 12 hours of birth (Figure 5).
- Eleven percent (n=105) of infants born to HBsAg+ women received 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. Infants born in the later part of 2013 are too young for PVS testing. One infant was HBsAg+, indicating infection (Figure 6).
- Among the HHCs, 37% (n=452) were 0-10 years of age and 30% (n=370) were 31-40 years of age (Figure 7).
- Hepatitis B virus marker status of HHCs (n=315) is as follows: Fifty-one percent (n=160) had positive antibodies to HBsAg (anti-HBs), 26% (n=82) were HBsAg negative, 6% (n=18) were susceptible (anti-HBs negative), 15% (n=46) were infected (HBsAg+) and 2% (n=9) had positive hepatitis B core antibodies, which indicates a previous or ongoing infection. The PHBPU recommends the Hepatitis B vaccine series for those who are susceptible (Figure 8).



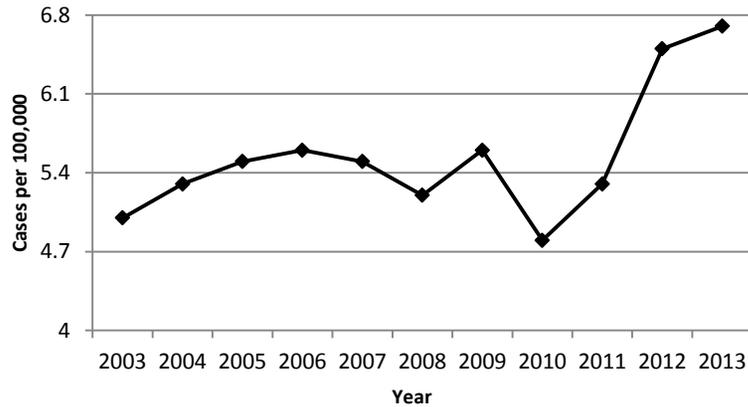
**Reported Hepatitis B, Perinatal Cases and Rates* per 100,000 by Maternal Age Group, Race/Ethnicity, and SPA
Los Angeles County, 2009-2013**

	2009 (N=760)			2010 (N=653)			2011 (N=700)			2012 (N=854)			2013 (N=891)		
	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	0.00	0	0.0	0.00
1-4	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.00	0	0.0	0.00
5-14	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.00	0	0.0	0.00
15-34	520	58.4	18.4	448	68.6	15.2	476	68	16.1	589	69.0	20	544	61.1	19.2
35-44	237	31.2	10.7	204	31.2	14.2	219	31.3	15.2	263	31.0	18.3	339	38.0	25.4
45-54	3	0.4	0.2	0	0	0	2	0.3	0.1	1	0.1	0.1	8	0.9	0.6
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		1	0.2		3	0.4		1	0.1		0	0.0	--
Race/Ethnicity															
Asian	570	75.0	43.8	491	75.2	37.4	555	79.3	42.3	678	79.0	51.7	712	79.9	52.7
Black	33	4.0	3.9	22	3.4	2.6	25	3.6	2.9	30	4.0	3.5	32	3.6	4.1
Hispanic	76	10.0	1.6	50	7.7	1.1	55	7.9	1.2	46	5.0	1.0	44	4.9	1
White	40	5.0	1.4	38	5.8	1.3	33	4.7	1.2	41	5.0	1.4	24	2.7	0.9
*Other	41	5.0	1.6	19	2.9	40.4	13	1.9	34.9	20	2.3	82.4	28	3.1	155
Unknown	0	0.0		33	5.1		19	2.7		39	5.0		51	5.7	--
SPA															
1	6	0.8	1.6	9	1.4	2.4	10	1.4	2.7	15	1.8	4.0	8	0.9	2.0
2	117	15.4	5.3	85	13	3.8	78	11.1	3.5	93	10.9	4.2	76	8.5	3.5
3	355	46.7	20.5	329	50.4	19.0	369	52.7	21.3	491	57.5	28.3	580	65.1	35.5
4	83	10.9	6.7	83	12.7	6.6	74	10.6	5.9	82	9.6	6.5	64	7.2	5.6
5	32	4.2	4.9	19	2.9	2.9	30	4.3	4.5	34	4.0	5.2	36	4.0	5.6
6	38	5.0	3.6	19	2.9	1.8	29	4.1	2.7	24	2.8	2.2	19	2.1	1.8
7	50	6.6	3.6	42	6.4	3.0	46	6.6	3.3	34	4.0	2.5	47	5.3	3.6
8	75	9.9	6.7	58	8.9	5.2	47	6.7	4.2	69	8.1	6.1	60	6.7	5.6
Unknown	4	0.5		9	1.4		17	2.4		12	1.4		1	0.1	--

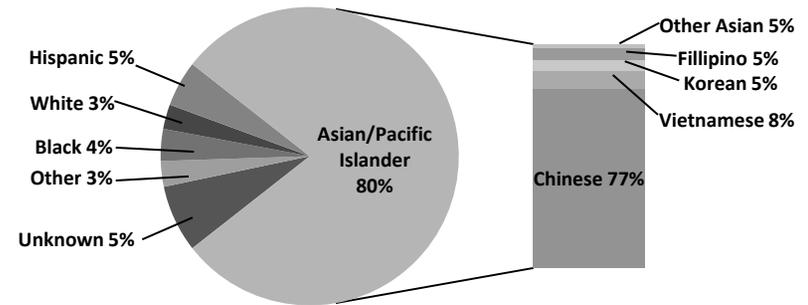
*Rates calculated based on less than 19 cases or events are considered unreliable * Other includes Pacific Islanders.



**Figure 1. Perinatal Hepatitis B Incidence of Exposure
LAC, 2003-2013**

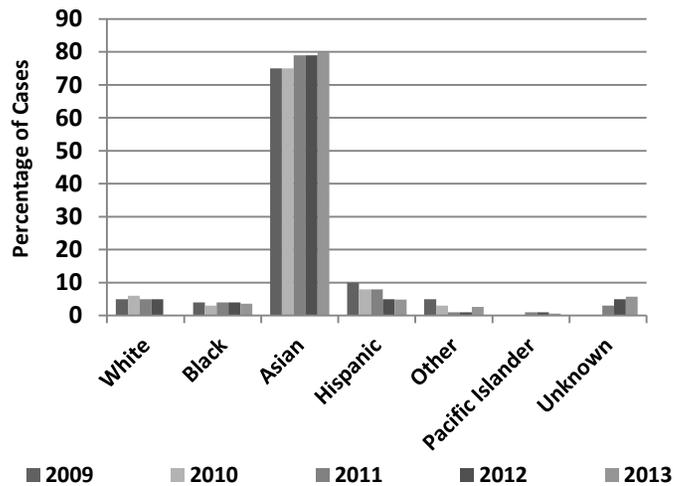


**Figure 2. Perinatal Hepatitis B Maternal Race/Ethnicity
LAC, 2013 (N=891)**



Other includes Native-American and any racial group that cannot be categorized as Asian, Black, Hispanic, White or unknown. Other Asian is Japanese, Asian-Indian, Cambodian non-Hmong, Thai, Lao or unknown Asian.

**Figure 3. Perinatal Hepatitis B Maternal Race/Ethnicity
LAC, 2009-2013 (N= 3858)**



**Figure 4. Perinatal Hepatitis B Maternal by SPA
LAC, 2013 (N=891)**

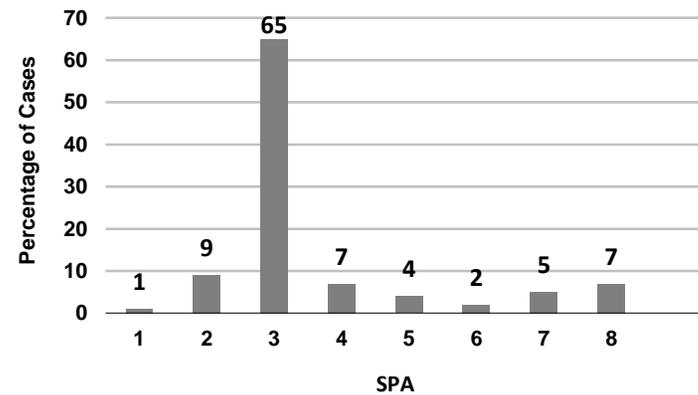
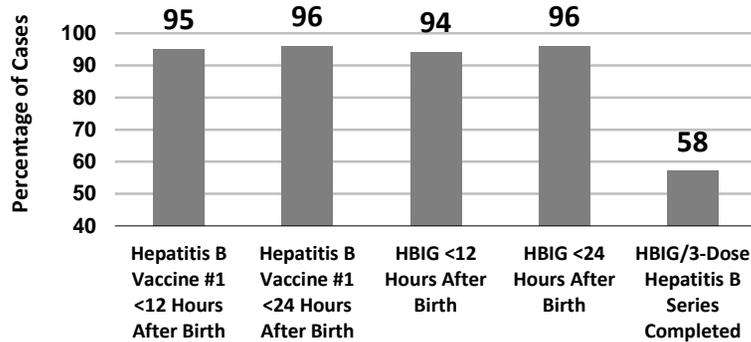


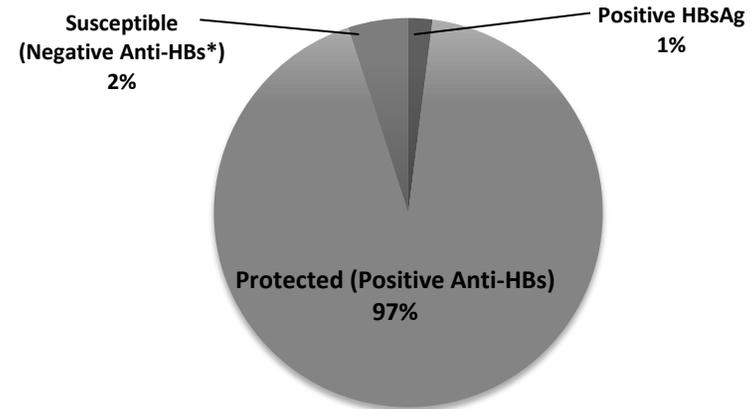


Figure 5. Perinatal Hepatitis B Summary of Infant Hepatitis B Immunoprophylaxis, LAC, 2013 (N=915)



Note: As of the date of this report, many infants born in the later part of 2012 are not due to receive the 3rd dose hepatitis B vaccine.

Figure 6. Perinatal Hepatitis B Infant Post Vaccination Serology (PVS) Results LAC, 2013 (N=105)



*Antibody to Hepatitis B Surface Antigen

Note: As of the date of this report, many infants born in the later part of 2013 are not eligible for PVS testing which is recommended at 9-18 months of age after completion of at least 3 doses of hepatitis B vaccine.

Figure 7. Perinatal Hepatitis B Household & Sexual Contacts Age Range, LAC, 2013 (N=1232)

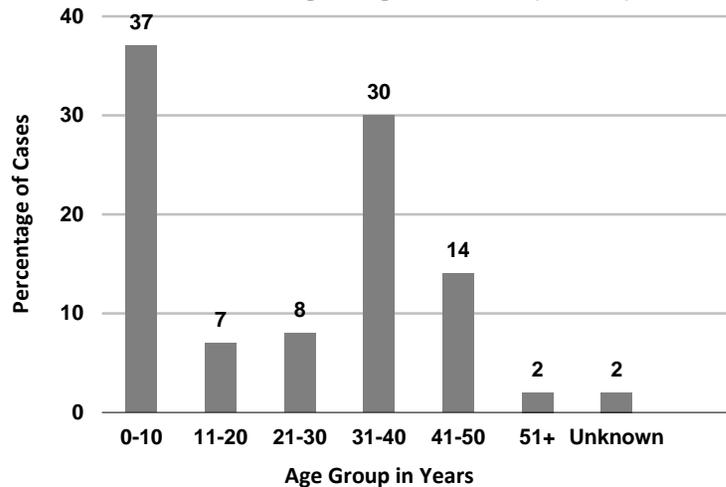
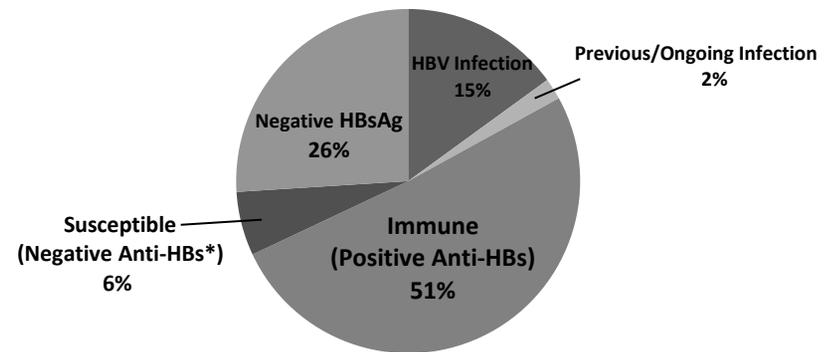


Figure 8. Hepatitis B Status of Household Contacts LAC, 2013 (N=315)



*Antibody to Hepatitis B Surface Antigen